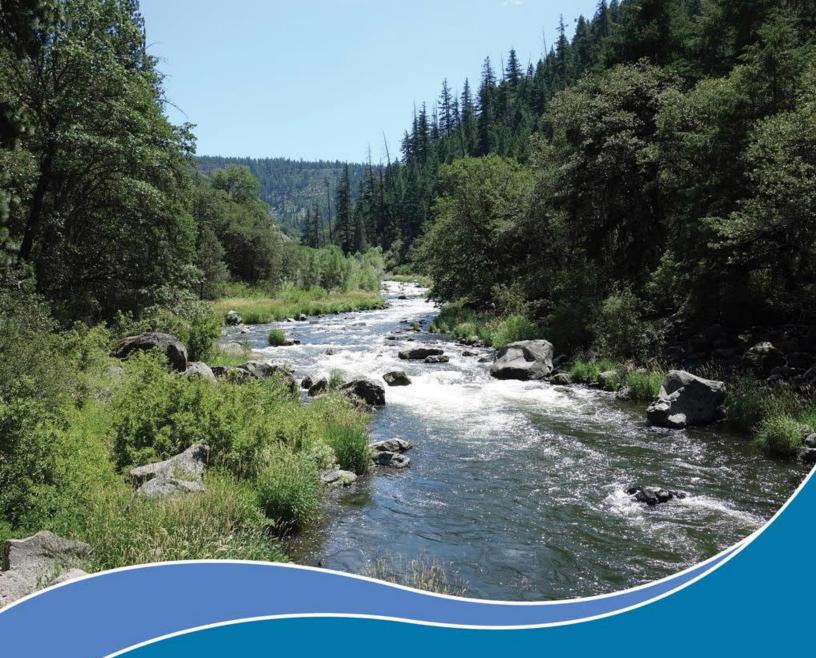
Attachment K

AECOM, Amended Estimate of Project Costs Report (July 2019)



Definite Plan for the Lower Klamath Project

Appendix P - Amended Estimate of Project Costs





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Acronyms and Abbreviations

AR Aquatic Resources
BOC Board of Consultants

CA California

CADD Computer Aided Design and Drafting
CEQA California Environmental Quality Act

CM Construction Management

EIS Environmental Impact Statement
EIR Environmental Impact Report
ENR Engineering News Record

FERC Federal Energy Regulatory Commission

FTE Full Time Equivalent

FY Fiscal Year

GIS Geographic Information System
GMP Guaranteed Maximum Price

KRRC Klamath River Renewal Corporation

KHSA Klamath Hydroelectric Settlement Agreement

lbs pounds LF Linear Feet

LVPP Looting and Vandalism Protection Program

m³ cubic meters

MDS Monitored Detection System MPE Most Probable Estimate

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MW Mega Watt MWh Mega Watt hour

NEPA National Environmental Policy Act

NPDES National Pollutant Discharge Elimination System

OC On center

ODC Other Direct Cost

OR Oregon

PDB Progressive Design-Builder

PLS Pure live seed

QRA Quantitative Risk Assessment

RES Resource Environmental Solutions, LLC

SF Square Foot

SWRCB State Water Resource Control Board

TCP Traditional Cultural Properties

TER Terrestrial Resources

USACE United States Army Corps of Engineers
USBR United States Bureau of Reclamation

USGS United States Geological Survey

YOC Year of Construction

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Chapter 1: Introduction



1. INTRODUCTION

This report documents the estimated project cost for the Lower Klamath Project (Project), which in addition to construction cost, includes costs for management, administration and legal support, insurance, liability transfer, environmental compliance and permitting, engineering design, procurement, mitigation and monitoring before, during and following construction, as well as construction management. The estimated project cost is based on the preliminary design presented in the Definite Plan for the Lower Klamath Project (KRRC 2018) (the Definite Plan), in addition to ongoing coordination and consultation with Project stakeholders and regulatory agencies.

1.1 Report Objectives

Section 7.2 of the Klamath Hydroelectric Settlement Agreement (KHSA), as amended sets forth required elements of the Definite Plan, which include:

- A detailed estimate of the actual or foreseeable costs associated with: the physical performance of Facilities Removal¹ consistent with the Detailed Plan; each of the tasks associated with the performance of the Klamath River Renewal Corporation's (KRRC) obligations as stated in Section 7.1; seeking and securing permits and other authorizations; and insurance, performance bond, or similar measures, as set forth in Appendix L to this Settlement;
- The KRRC's analysis demonstrating that the total cost of Facilities Removal is likely to be less than
 the State Cost Cap, which is the total of Customer Contribution and California Bond Funding as
 specified in Section 42; and
- A detailed statement of the estimated costs of Facilities Removal.

This report addresses these elements of the KHSA and documents both the engineer's opinion of construction cost, based on the project design elements and construction plan summary provided in the Definite Plan, and the total estimated project implementation cost. In addition to reporting the estimated project costs, an estimate of a P80 contingency (defined in greater detail in Section 2.7) was prepared using a Monte Carlo analysis to account for uncertainties associated with the estimated project costs and identified project risks. The P80 contingency considered probabilities and impacts associated with risks

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¹ "Facilities Removal" is defined in the KHSA as the "physical removal of all or part of each of the Facilities to achieve at a minimum a free-flowing condition and volitional fish passage, site remediation and restoration, including previously inundated lands, measures to avoid or minimize adverse downstream impacts, and all associated permitting for such actions."

² The State Cost cap is \$450,000.000.



included in the amended Risk Management Plan (KRRC 2019), in addition to accounting for price uncertainty and cost of schedule impacts.

1.2 Project Scope

The proposed Project (also referred to as the Full Removal alternative) is described in Sections 1, 4, 5, 6 and 7 of the Definite Plan. The Project involves the physical removal of each of the four dam developments (Iron Gate, Copco No. 1 and No. 2, and J.C. Boyle) to achieve at a minimum a free-flowing condition and volitional fish passage, site remediation and restoration, including previously inundated lands, measures to avoid or minimize adverse downstream impacts, and all associated permitting for such actions. Table 1-1 provides an overview of the four dam developments. The Project is located on the Klamath River approximately 200 miles from the Pacific Ocean in the states of Oregon (OR) and California (CA) (see Figure 1-1).

While the proposed Project includes full removal of all four developments, the Definite Plan also describes a "Partial Removal" alternative which is presented for purposes of environmental review. Under the Partial Removal alternative, the objectives of free-flowing river conditions and volitional fish passage will be achieved, but portions of each dam will remain in place, along with ancillary buildings and structures such as powerhouses, foundations, tunnels, and pipes. Section 5 of the Definite Plan discusses the details of infrastructure to remain under this alternative.

Prior to removal of the dams and hydropower facilities, KRRC's contractor will draw down the water surface elevation in each reservoir as low as possible to facilitate accumulated sediment evacuation and to create a dry work area for development removal activities. A few infrastructure modifications will be necessary to facilitate drawdown. In general, drawdown will begin on January 1 of the drawdown year, and will extend through mid-March of the same year.

Table 1-1 Existing Dam Development Overview

Dam (Sate)	Description	Year Built	Capacity/ Average Annual Production	Max. Surface Area of Reservoir (acres)	Reservoir Storage Capacity (acre-feet)	Dam Type	Dam Height/Length (feet)
J.C. Boyle (OR)	Reservoir, dam, fish ladder, power canal, two turbines and powerhouse	1958	98 MW/ 329,000 MWh	420	3,495 (total) 1,724 (active)	Earthfill	68/693
Copco No. 1 (CA)	Reservoir, dam, two turbines and powerhouse	1918	20 MW/ 106,000 MWh	1,000	46,900 (total) 6,235(active)	Concrete	126/ 415
Copco No. 2 (CA)	Division dam, small impoundment, two turbines and powerhouse	1925	27 MW/ 135,000 MWh	40	73 (total) negligible (active)	Concrete	33/ 278
Iron Gate (CA)	Reservoir, dam, one turbine, powerhouse and fish hatchery	1962	18 MW/ 116,000 MWh	944	58,800 (total) 3,790 (active)	Earthfill	173/ 740

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After drawdown is accomplished, remaining reservoir sediments will be stabilized to the extent feasible and dam and hydropower facility removal will begin. Full reservoir area restoration will begin after drawdown, extend throughout the year, and possibly extend into the subsequent year. Vegetation establishment could extend several years.

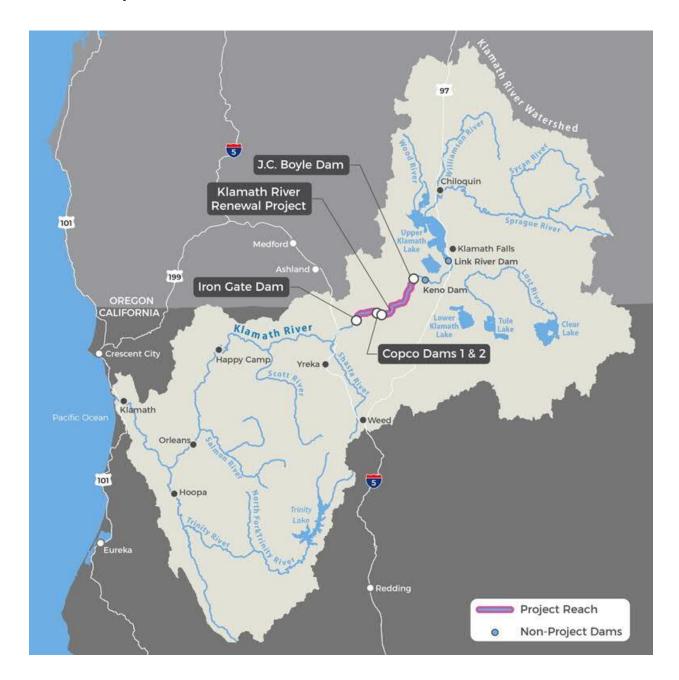


Figure 1-1 Klamath River Watershed and Facilities Locations

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Other key project components include measures to reduce Project-related effects to aquatic and terrestrial resources, road and bridge improvements, relocation of the City of Yreka's pipeline across Iron Gate Reservoir and associated diversion facility improvements, as well as demolition of various recreation facilities adjacent to the reservoirs. This estimate does not include costs associated with design and construction of any hatchery improvements associated with the Project (as described in the Definite Plan), and as per the KHSA, these will be funded separately by PacifiCorp.³

1.3 Changes Since Previous Estimate

This amended version of the Estimate of Project Costs report has been refined from previous versions based on several activities and input, including the following:

- 1. Formal and informal input from the Federal Energy Regulatory Commission (FERC) Board of Consultants (BOC): The BOC completed a review of the Definite Plan (KRRC 2018) and the associated estimate of project costs, which resulted in Letter Report No. 1 to present their findings, conclusions and recommendations. This followed their first BOC meeting of October 24, 2018, as well as the informal meeting and site visit of October 23, 2018. Matters addressed included the Definite Plan, the feasibility and cost associated with the Definite Plan, as well as the capacity of the KRRC to accept transfer of license from PacifiCorp. After receiving BOC Letter Report No. 1, additional informal cost submittals have been made to the BOC and discussions have been completed to address the BOC input of Letter Report No. 1. The KRRC believe that all BOC input has been incorporated or addressed in this amended Estimate of Project Costs report.
- Latest Project Understanding: Over the past year, risk management strategies have been implemented, project details have been refined, and informal agency consultations have allowed a more comprehensive understanding of project components, likely permit requirements, and other mitigations required for project implementation. The estimate herein considers this updated information.
- 3. Input from insurance and liability transfer experts: The KRRC has contracted with insurance and risk management companies in the past year to obtain refined input into the question of project insurance and liability transfer. This input has informed the approach to insurance and risk for the Project and the associated costs and is summarized herein.
- 4. Input from Progressive Design-Builder (PDB): The KRRC has contracted with a PDB contractor, Kiewit, to complete the final design and construction for the Project. Kiewit will complete their initial proof of concept deliverable and associated initial cost model in early July 2019. While limitations associated with these two early PDB submittals do not allow for their use as backup to the estimate

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³ See Section 7.6.6 of the KHSA.



of costs provided herein, the numbers will be reviewed to confirm they are in alignment and that Kiewit is comfortable with the design and construction budgets summarize herein.

1.4 Limitations

The opinion of estimated project costs presented in this report is based on information in the Definite Plan, ongoing coordination and consultation with project stakeholders and regulatory agencies, and market conditions at the time of preparation of the estimate. The construction cost was estimated with the use of a combination of built-up unit prices and statistical unit prices from published and internally developed and maintained historical databases factored for location, contractor markups, and other project-specific criteria. Logic, methods, and procedures for developing costs are typical for the construction industry.

Various limitations need to be considered in the use of both built-up and statistical unit prices. These limitations include the potential for changes in technology, methods, and construction applications; the impact of short-term economic cycles; and the time-lag of reporting databases. Any estimate of unit prices is not intended to predict the outcome of hard dollar results from open and competitive bidding.

AECOM represents that the services were conducted in a manner consistent with the standard of care ordinarily applied as the state of practice in the profession, given the amount of design information available at the time of estimate preparation. No other warranties, either expressed or implied, are included or intended.

Other implementation costs presented in this report, outside of the preliminary design and construction activities, should be considered preliminary, due to the fact that:

- Permitting coordination is currently ongoing. The understanding of anticipated mitigation, monitoring
 and reporting requirements should be considered preliminary until feedback is received from the
 agencies on the draft permit applications. KRRC will obtain additional clarity on mitigation,
 monitoring and reporting once the California Environmental Quality Act (CEQA) and National
 Environmental Policy Act (NEPA) processes are complete.
- While KRRC has executed a PDB agreement for preliminary design services with Kiewit, a
 Guaranteed Maximum Price (GMP) agreement amendment for construction has not be executed.
 The GMP agreement is anticipated by February 2020.

KRRC is undertaking additional due diligence on construction costs, measures to lower construction costs, and measures to manage construction risk. These measures include risk management, negotiation of permit requirements for natural resources, and negotiation of a PDB GMP for construction. Many risks considered in the Monte Carlo analysis that deal with design and regulatory compliance will be managed or better understood when this process is completed, likely lowering the P80 contingency. These results of these inquiries will be further informed by ongoing review and recommendations of the FERC approved independent BOC for the Lower Klamath Project.

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1.5 Results Summary

Table 1-2 below summarize the estimate of Project costs for both Full Removal and Partial Removal of the four dams.

The summary includes an estimate of the P80 contingency, which was prepared using a Monte Carlo analysis to account for uncertainties associated with the estimated project costs and identified project risks. The P80 contingency (likely final project cost in 80% of all scenarios) considered probabilities and impacts associated with risks included in the amended Risk Management Plan (KRRC 2019), in addition to accounting for price uncertainty and cost of schedule impacts. Details on these methods are described further in Section 2.7 (Quantitative Risk Assessment) of this report.

Table 1-2 Results Summary

Line Item / Cost Category	Estimate of Project Costs (Year of Construction Dollars)					
Line Item / Cost Category	Full Removal	Partial Removal				
Project Oversight (non PDB)	40,718,000	40,718,000				
Liability Transfer	35,530,000	35,530,000				
Environmental Compliance (KRRC-Managed)	8,097,000	8,097,000				
Technical Support	14,220,000	14,220,000				
Construction Management	13,167,000	13,167,000				
Progressive Design-Build Contract	237,612,000	219,150,000				
Mitigation Measures	17,141,000	17,141,000				
Monitoring & Reporting (KRRC)	4,406,000	4,406,000				
Subtotal	370,891,000	352,429,000				
Contingency	62,757,000	58,621,000				
TOTAL	433,648,000	411,050,000				

The Full Removal Estimate total with a P80 contingency is currently approximately \$16.3M below the funding cost cap of \$450M. As shown later in Section 4 (Results), the P99 (99% Confidence Level) is only slightly above the State cost cap at approximately \$452M.

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Chapter 2: Basis of Estimate



BASIS OF ESTIMATE

2.1 Cost Categories

For organizational purposes, the project costs have been summarized using the following cost categories:

- Project Oversight: Support services providing administration, project management and controls, contract management, BOC, outreach, corporate insurance and legal support.
- **Liability Transfer:** Specialty corporate indemnitor agreement for compliance and impacts to natural and cultural resources, and local impact mitigation fund for mitigation and property damage associated with downstream flooding and sediment, groundwater, reservoir rim stability.
- Environmental Compliance and Permitting: Environmental compliance support and permitting.
- **Technical Support:** Field studies, preliminary engineering design, vegetation test plots and initial seed collection, PDB procurement, and PDB management and design review (Owner's Representative).
- **Construction Management:** Full construction management services for implementation of all project components.
- Progressive Design-Build Contract:
 - + Final Design and Permitting Support: PDB field investigations, seed collection and propagation, invasive seed control, development of 30%, 60%, 90% and 100% design packages, and compliance support
 - + Project Insurance: Contractor controlled insurance package
 - Dam removals: Sequential removal of all four dams, including dam modifications, reservoir drawdown and removal of all associated dam infrastructure (including spillways, fish ladders, intake structures, penstocks, turbine units, electrical installations, buildings) and demolition of existing recreation areas
 - + Reservoir area improvements: Removal, grading and shaping of portions of reservoir sediment, bank stability measures
 - + Reservoir area restoration: Seeding, planting, weeding, monitoring and maintenance.

 Hydroseeding methods include by barge along the reservoir bank, by helicopter along steep

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slopes, by airplane along uneven large areas and by trailer mounted blower for areas easily accessible by truck; Monitoring, maintenance and reporting costs associated with habitat restoration are now being covered through the specialty corporate indemnitor, as described in more detail in Section 2.3.

- + Yreka water supply improvements: Improvements to the City of Yreka's water supply intake and relocation of their water supply pipeline.
- + Transportation improvements: Improvements to, or replacement of, bridges, culverts and road resurfacing to mitigate any project or construction related impact and to accommodate necessary construction traffic.
- + Recreation improvements: New recreation infrastructure (e.g., water access, day-use areas, etc.) to avoid or minimize project impacts
- + Downstream flood improvements: Improvements to existing structures and facilities to avoid or minimize adverse downstream flood-related impacts. This cost is now being covered through a local impact mitigation fund, as described in more detail in Section 2.3.
- + Public Health and Safety Fencing: Fencing around reservoirs to prevent access by the public and certain wildlife
- + Fire Management Plan: Measures to limit the impact of the Project on fire management
- + Spawning Gravel Augmentation: Aquatic resource measure to install gravel in certain portions of the Klamath River to mitigate impacts to aquatic resources
- Anticipated Mitigation Measures: Anticipated cultural resource measures, groundwater analysis (to support potential improvements), and downstream water supply improvements that may be required by regulatory agencies to mitigate Project-related impacts. Costs associated with actual groundwater improvements are now being covered through a local impact mitigation fund, as described in more detail in Section 2.3.
- Monitoring and Reporting: Baseline studies to support future aquatic resource, terrestrial resource, water quality, and sediment monitoring and reporting. Construction and post-construction monitoring and reporting are now being covered through the specialty corporate indemnitor, as described in more detail in Section 2.3.

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2.2 Construction Procurement Approach

KRRC based estimates for the various cost categories on the executed PDB agreement with Kiewit, for construction of the dam removal work package, which includes construction access road and bridge accommodations, dam modifications, Yreka water supply improvements, dam and hydropower facility removal, recreation demolition/improvements, fire management plan implementation, spawning gravel installation, site fencing, and reservoir and other restoration. It is important to note that Kiewit is not responsible for downstream flood improvements/mitigation, groundwater improvements/mitigation or reservoir rim stability improvements/mitigation, which is being completed through management of a local impact mitigation fund, as described in more detail in Section 2.3.

Kiewit is responsible for final design of all components above, except for the Yreka water supply improvements, which are being designed by KRRC. KRRC used a qualifications-based selection approach to select Kiewit, who is currently completing field work and developing detailed design submittals.

2.3 Liability Transfer

Indicative pricing for liability transfer was developed by Resource Environmental Solutions, LLC (RES) and consist of two separate approaches to liability transfer. These approaches include utilization of a specialty corporate indemnitor and development and management of a local impact mitigation fund. Both approaches are discussed in detail in the amended Risk Management Plan (KRRC 2019) for the Project, and are summarized below, as they pertain to cost:

- 1. Special Corporate Indemnitor: The special corporate indemnitor (RES) will indemnify the KRRC, PacifiCorp and the States against harm associated with natural resource and cultural resource impact risks for a fee, through an indemnification agreement. This agreement will also require RES to complete all activities (monitoring, maintenance, reporting, and responding to unforeseen conditions) associated with habitat restoration and other natural resource-related permitting, CEQA and NEPA requirements, as well as cultural resource inadvertent discoveries.
- 2. Local Impact Mitigation Fund: The local impact mitigation fund would be a pool of capital independently administered by a third party following a methodology for compensating impacted parties. RES identified five key areas of property damage where insurance or indemnification was not available, and where a local impact mitigation fund would be a cost-effective solution to manage associated risks: (a) the potential for increased flooding, (b) impacts associated with the release of sediment, (c) the potential for instability around reservoir rims, (d) impacts to groundwater wells and (e) the potential for diminution in land value and similar claims.

2.4 Construction Pricing

The construction estimates summarized herein are intended to capture the most current pricing for materials, wages and salaries, equipment, accepted productivity standards, and typical construction

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practices, procurement methods, current construction economic conditions, and site conditions for the current level of design. Detailed construction cost breakdowns for both Full Removal and Partial Removal alternatives are provided in Attachment A. Pay item cost detail worksheets, describing the calculation of individual cost estimate line items rates and prices are provided in Attachment B.

Construction cost estimates were prepared based on less than complete designs and have inherent levels of risk and uncertainties (as discussed in Section 2.7). The following sections discuss the various aspects and assumptions associated with construction pricing for the Project.

2.4.1 Construction Pricing - Direct Costs

Experienced construction cost estimators developed direct cost construction pricing using logic, methods, and procedures for pricing that are typical for the construction industry. Unit rates were established using input from RS Means database, Equipment Watch database and Davis Bacon Wage Determination database. Rates were further determined and validated with project data and awarded bids from similar projects including Oroville Spillway and Calaveras Dam, and other similar AECOM estimated projects including Sites Reservoir Project, Folsom Dams, Pine Flat Dam. Caltrans estimate data was also utilized to back-check unit rates and production where relationships could be determined. Overall prices were established by taking location, access and construction operation into consideration. Estimate items incorporate inefficiencies associated with breaks throughout the shifts. Benefits provided to the field staff are accounted for in the Field Overhead costs.

KRRC used the latest Davis Bacon Wage Determination for labor rates and fringes. The area used is based on Siskiyou County, CA. The Project is in a remote location which will require per diem for all employees. This consideration is included within the Field Overhead costs.

KRRC based equipment costs on the latest understanding of the equipment required to complete the work. Unit prices include equivalent/similar pieces of equipment with present day rates from Equipment Watch Blue Book and include equipment mobilization. In selecting the rates, Redding, CA was used as the nearest available location. Equipment hourly rates include fuel, which is a factored rate of \$3.00/gallon based on average retail prices from nearby gas stations. KRRC estimated equipment and material sales tax at 7.75% based on recent sales tax data in Siskiyou County.

The major features and/or items in the estimate, such as the dam modifications, dam removal, and reservoir restoration are well defined. KRRC estimated costs for these items using crew and equipment work-item analysis to develop unit costs, and then multiplied these by the quantity measurement to arrive at work item subtotals. Crew and equipment work-item analysis spreadsheets are presented in Attachment B.

KRRC used vendor quotes for materials such as gates for drawdown, pipelines, instrumentation, and hydroseeding. KRRC based costs for some of the smaller items of work within the estimate on the experience and judgment of the estimator using historical data from similar types of construction, factored for location, size, and other Project-specific criteria.

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2.4.2 Construction General Requirements

As discussed in more detail below, the following markups were applied into the contractor's direct costs to account for general requirements:

- Markup by subcontractor, where work associated with direct costs will be performed by a
 subcontractor and not self-performed by PDB Contractor. The 15% markup by subcontractor is to
 reflect the supplemental overheads and profit incurred by the subcontractor and reflects the
 maximum allowable markup by subcontractor described in the PDB Contractor's Project Agreement.
- PDB Contractor's overhead, profit and risk (Project Company Fee) at 10% based on the negotiation
 Project Agreement with Kiewit
- Cost of PDB Contractor's Performance Bond and Payment Bond, calculated at 1% of total direct cost including markup by subcontractors and PDB Contractor overhead profit and risk.
- PDB Contractor's insurance is estimated based on indicative pricing received by Aon, which is a
 global professional services firm with a Commercial Risk Solutions' division that provides risk
 advisory, risk transfer and structured solutions to reduce the client's total cost of risk⁴. The specific
 Project insurance coverages are described in detail in the amended Risk Management Plan (KRRC
 2019) and are summarized below.

Field Overhead

Project costs necessary to support the performance of the work, but not included in the itemized estimates for the measured work scope, are included in the estimate under the term of Field Overheads. Due to the expansive geographical limits of the project, Field Overheads facilities are addressed separately as four locations - Iron Gate dam, Copco dams (combined), JC Boyle dam and a fourth location to support work associated with bridges, roads, habitat restoration and Yreka water supply improvements.

Field Overheads are categorized and captured in separate elements as listed and described below:

- OH-01 Mobilization; accounts for mobilization of permanent materials, miscellaneous loads, and equipment
- OH-02 Project Staff; salaries, burdens, salaried employee per-diems, and salary uplifts associated
 with project staff including the disciplines of project management and administration, quality control,
 construction support, engineering, safety, survey and superintendents.

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⁴ Additional information regarding this firm may be found at https://www.aon.com



- OH-03 Temporary Buildings; includes bunk house trailers, office trailers, storage containers and associated mobilization, demobilization, cleaning and maintenance. For contractor and owner's representative.
- OH-04 Temporary Utilities; accounts for utilities associated with temporary facilities including power, water, telephone, internet, sewer, drinking water. Also includes job radios, garbage disposal and portable toilets.
- OH-05 Temporary Construction; temporary access roads to temporary buildings, parking and laydown areas, fences, grading and maintenance of site and access areas, fuel stations and signage.
 Temporary work associated directly with construction is not included in field overheads and measured separately in their own estimate line items.
- OH-06 Transportation; road runner service including driver and vehicles, crew flat boats, all-terrain vehicles and maintenance.
- OH-07 Office Supplies; including routine office supplies, photocopy and printing facilities, computers and office furniture and office storage.
- OH-08 Safety Supplies; including safety supplies and an allowance for staff safety incentives.
- OH-09 Employee Expense; project staff travel costs based on two trips per month for 10 salary employees, and travel for business activities and internal audits.
- OH-10 Contract Services; associated training costs, at \$0.50 per manhour, and photography services for project record keeping purposes.
- OH-11 Employee Living Cost; field staff per diem. Salaried staff per diems included in OH-02
- OH-12 Winter and Summer Protection; allowances for winter protection. Equipment accounted for in OH-27.
- OH-13 Quality Assurance/ Quality Control; salary for quality control technician and support staff during construction periods. Includes allowances for laboratory equipment and testing.
- OH-14 Lost Production/Overtime/Travel Time; for field staff. Additional overtime above 50
 hours/week (up to 50 hours/week accounted for in construction estimate line items). Also includes
 for loss of production associated with daily travel. Vacation travel already accounted for in labor
 rates.
- OH 16 Demobilization; accounts for demobilization of permanent materials, miscellaneous loads, and equipment

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- OH 18 Survey; survey materials only. Survey staff included in OH-02.
- OH 21 Small Tools; field staff small tool allowance at \$2.50 per manhour.
- OH 22 Traffic Control; water truck and erosion control.
- OH 27 Project Equipment; project staff pickup trucks, field crew pickup trucks, site equipment (1 per site) including 19-ton boom truck, all terrain forklift, tool carrier, 900 CFM compressor, electric welder, highboy trailer, crew bus (1 for entire Project), box trailer, flatbed trailers, light plants.
- OH 28 Project Labor; operators and maintenance for equipment listed on OH-27.
- OH-99 Dead Rent; cost of equipment in idle status and standby status when not performing listed construction activities. Calculated on a per equipment item basis, as listed on the pay item cost sheets.

The Cost Estimate lists amounts for each Field Overhead category and is identified separately per project site. These costs are incorporate into the estimate by allocating them to all applicable estimate construction items proportionate to their cost. A separate column is identified on the Cost Estimate to identify the distribution of Field Overhead costs over the full estimate.

Contractor Overhead, Profit & Risk

The executed Project Agreement with Kiewit includes a Project Company Fee of 10% of the Project implementation work costs (other than the general conditions costs and the costs of the performance bond and the payment bond). The Project Company Fee is an amount attributable to profit and risk and includes consideration for all costs that Kiewit may incur in connection with or related to the Project that are not specifically compensable through the Project Agreement as Project implementation work costs.

Subcontractor Markups

The executed Project Agreement with Kiewit includes a maximum subcontractor markup of 15%.

Bond Markups

KRRC selected a bonding markup of 1% of direct construction cost as derived by using industry standard bond requirements on similar projects.

2.4.3 Quantities

Detailed quantity takeoffs made for the earthwork items (excavation, fill and erosion protection) were computer-generated (and independently checked) using the surfaces presented in the drawings, and

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represent neat-line quantities. Earthwork volumes (cut, fill, balance) and other quantities are provided in Section 5 and associated figures of the Definite Plan.

2.4.4 Construction Schedule

KRRC based the estimate on the construction schedule provided as Attachment C, and the construction plan described in the Definite Plan. As shown on the schedule and/or discussed in the plan, the schedule is predicated on the following:

- Construction of City of Yreka water supply improvements will be completed in 2021 (prior to drawdown) by the PDB
- Construction of downstream flood control improvements will be completed in 2021 prior to drawdown) by the PDB
- Construction of the access road improvements will be completed in 2021 (prior to drawdown) by the PDB
- An effective Date of Agreement (GMP) for the dam removal PDB on or before February 15, 2020
- Lineal and concurrent activities
- Equipment application and production
- The ability to drawdown J.C. Boyle, Copco No. 1, Copco No. 2 and Iron Gate reservoirs at the beginning of 2022
- Major earthworks and removal activities are assumed to be performed using two 10-hour shifts, six days per week
- In-stream construction window in Oregon is assumed to be from July 1 through September 30
- In-stream construction window in California is assumed to be from June 15 through October 15

The duration of many of the schedule activities are determined from the labor and equipment productivity associated with the estimate pay item sheets.

The access road, dam modification, water supply, and downstream flood control construction will be completed during an estimated 6- to 8-month period in 2021, since these activities require completion prior to drawdown and facility removal. Subsequent dam removal and associated construction will occur during 8 months of work in 2022, with restoration related construction activities likely extending through 2022. Monitoring and reporting will extend for 5 years after construction completion. KRRC will encumber funds via the liability transfer approach (see Section 2.3) for post-2027 mitigation and monitoring, as appropriate.

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2.5 Consulting Services Pricing

Outside of construction costs, other implementation activities such as project oversight, field studies, design, permitting, mitigation measures and monitoring generally involve labor and associated other direct costs (ODCs). ODCs can include office space, travel, meals, postage, specialty reproduction, and vendor quotes for materials, supplies or services. For each of the implementation activities referenced above, KRRC developed independent estimates using standard labor rates and ODC values based on the latest understanding of the scope or work for the life of the Project. Details for each cost category are provided in Section 3. KRRC used a standard labor rate sheet for an environmental/engineering consulting firm, as shown below in Table 2-1, to develop the majority of the other implementation costs listed above. In some cases, KRRC used specialty rates to develop estimates for specialty activities such as project oversight and legal support.

Table 2-1 Environmental/Engineering Labor Rate Sheet

Labor Classification	Hourly Rate
Senior Technical Advisor	\$285.00
Principal	\$285.00
Project Manager	\$230.00
Principal Engineer	\$200.00
Senior Engineer	\$180.00
Engineer	\$145.00
Junior Engineer	\$100.00
Principal Scientist/Planner	\$180.00
Senior Scientist/Planner	\$160.00
Scientist/Planner	\$120.00
Junior Scientist/Planner	\$95.00
Senior Field Technician	\$110.00

Labor Classification	Hourly Rate
Field Technician	\$75.00
Junior Field Technician	\$55.00
Certified Industrial Hygienist	\$165.00
Senior Data Management	\$130.00
Data Management	\$85.00
Senior GIS/CADD/Graphics	\$120.00
GIS/CADD/Graphics	\$90.00
Technical Editor	\$105.00
Community Relations Specialist	\$110.00
Project Controls/Procurement	\$95.00
Administrative Assistant	\$75.00
Clerical/Support	\$65.00

The hourly rates set forth in this schedule of fees and charges were valid from January 1, 2018 through December 31, 2018. The Hourly Rates are adjusted annually on January 1 of each subsequent year. The new Schedule of Fees and Charges will apply to existing and new assignments. For work extends beyond December 31, 2018 a 3% annual escalation on hourly rates was applied.

2.6 Escalation

KRRC based estimates on contemporary market information at the time of estimate preparation. As such it is necessary to include escalation to account for cost increases over the duration of the Project, particularly as this Project spans multiple years. KRRC escalated each line item in the cost estimate based on scheduled construction and other implementation activities.

KRRC used an escalation rate of 4% per year. This is based on cost index references and current cost trends observed in the industry. As shown in the below Engineering News Record (ENR) Historic Cost Index (Table 2-2), the last few years have seen a consistent uptrend in escalation, including the beginning of 2018.

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Considering this trend, along with other published historical data and professional judgment, it is reasonable to expect escalation to average out at around 4% per year over the duration of the Project.

Table 2-2 ENR Historic Cost Index

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NOV	DEC	ANNUAL AYG	AVERAGE ANNUAL INCREASE
1990	4680	4685	4691	4693	4707	4732	4734	4752	4774	4771	4787	4777	4732	
1991	4777	4773	4772	4766	4801	4818	4854	4892	4891	4892	4896	4889	4835	2.177%
1992	4888	4884	4927	4946	4965	4973	4992	5032	5042	5052	5058	5059	4985	3.102%
1993	5071	5070	5106	5167	5262	5260	5252	5230	5255	5264	5278	5310	5210	4.514%
1994	5336	5371	5381	5405	5405	5408	5409	5424	5437	5437	5439	5439	5408	3.800%
1995	5443	5444	5435	5432	5433	5432	5484	5506	5491	5511	5519	5524	5471	1.165%
1996	5523	5532	5537	5550	5572	5597	5617	5652	5683	5719	5740	5744	5620	2.723%
1997	5765	5769	5759	5799	5837	5860	5863	5854	5851	5848	5838	5858	5826	3.665%
1998	5852	5874	5875	5883	5881	5895	5921	5929	5963	5986	5995	5991	5920	1.613%
1999	6000	5992	5986	6008	6006	6039	6076	6091	6128	6134	6127	6127	6059	2.348%
2000	6130	6160	6202	6201	6233	6238	6225	6233	6224	6259	6266	6283	6221	2.674%
2001	6281	6272	6279	6286	6288	6318	6404	6389	6391	6397	6410	6390	6343	1.961%
2002	6462	6462	6502	6480	6512	6532	6605	6592	6589	6579	6578	6563	6538	3.074%
2003	6581	6640	6627	6635	6642	6694	6695	6733	6741	6771	6794	6782	6694	2.386%
2004	6825	6862	6957	7017	7065	7109	7126	7188	7298	7314	7312	7308	7115	6.289%
2005	7297	7298	7309	7355	7398	7415	7422	7479	7540	7563	7630	7647	7446	4.652%
2006	7660	7689	7692	7695	7691	7700	7721	7722	7763	7883	7911	7888	7751	4.096%
2007	7880	7880	7856	7865	7942	7939	7959	8007	8050	8045	8092	8089	7966	2.774%
2008	8090	8094	8109	8112	8141	8185	8293	8362	8557	8623	8602	8551	8310	4.105%
2009	8549	8533	8534	8528	8574	8578	8566	8564	8586	8596	8592	8641	8570	3.081%
2010	8860	8672	8671	8677	8761	8805	8865	8858	8857	8921	8951	8952	8857	3.349%
2011	8938	8998	9011	9027	9035	9053	9080	9088	9116	9147	9173	9172	9070	2.405%
2012	9176	9198	9268	9273	9290	9291	9324	9351	9341	9376	9398	9412	9308	2.624%
2013	9437	9453	9456	9484	9516	9542	9552	9545	9552	9689	9666	9668	9547	2.564%
2014	9664	9681	9702	9750	9796	9800	9835	9846	9870	9886	9912	9936	9806	2.716%
2015	9972	9962	9972	9992	9975	10039	10037	10039	10065	10128	10092	10153	10035	2.335%
2016	10132	10181	10242	10279	10315	10337	10379	10385	10403	10434	10442	10530	10338	3.019%
2017	10542	10559	10667	10678	10692	10703	10789	10826	10823	10817	10870	10873	10737	3.856%
2018	10878	10889	10959										10909	5.520%
						Base: 1913	3=100							

The Cost Estimate includes calculation of escalation on a line-by-line basis, but the detail of the calculation is omitted from this report in the interest of brevity. The method used to calculate the amounts in the 'Escalated YOC (year of construction) Estimate column is illustrated in Table 2-3 below. The estimate identifies the baseline year of the estimate line item ('Est. Basis' column), then escalates based on the allocation of percentages ('Escalation - Percentage per Year' columns) and outputs escalated costs per year in the columns on the far right. These are then totaled in the 'Escalated YOC Estimate' column.

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Table 2-3 Cost Estimate Escalation Example (Extract)

Est	Cost			(\$)	Escalated	Esca	lation -	Perce	entage pe	Y E	t Escala	Escalation - Cost at Year of Construction				
ID	Sheet	Heading	Description	Estimate	YOC Estimate	19	20	21	22 2	Ba	is 19	2	0	21	22	23
~		₩		~		_	_		- 1	•	~	-	-	-		
		Copco 1 Dam Removal														
41	2.001	Copco 1 Dam Removal	Furnish, Install, and Remove Barge-Mounted Crane in Reservoir	468,326	506,541			100		1			-	506,541	-	-
41	2.002	Copco 1 Dam Removal	Remove Sediment from Diversion Tunnel Intake to provide acce	390,280	422,126			100		1		-	-	422,126	-	-
41	2.003	Copco 1 Dam Removal	Mobilize and Demob Large Crane on Right Abutment	104,387	117,421				100	1		-	-	-	117,421	-
41	2.004	Copco 1 Dam Removal	Remove Water from behind Tailrace Cofferdam	2,645	2,975				100	1		-	-	-	2,975	-
41	2.005	Copco 1 Dam Removal	Cofferdam Fill Material Production for Equipment Access	207,047	232,900				100	1		-	-	-	232,900	-
41	2.006	Copco 1 Dam Removal	Provide Dew atering behind Tailrace Cofferdam	261,629	294,297				100	1		-	-	-	294,297	-
41	2.007	Copco 1 Dam Removal	Remove Current Diversion Tunnel Plug	165,500	179,005			100		1		-	-	179,005	-	-
41	2.008	Copco 1 Dam Removal	Tailrace Coffer Dam- Furnish & Unload Material	280,992	316,078				100	1			-		316,078	-
41	2.008.1	Copco 1 Dam Removal	Tailrace Coffer Dam- Drive Pile	472,314	531,289				100	1			-		531,289	-
41	2.008.2	Copco 1 Dam Removal	Tailrace Coffer Dam-Extract Pile	246,053	276,777				100	1		.	-	-	276,777	-
41	2.009	Copco 1 Dam Removal	Installation of 3 each 72" Blind Flanges	1,637,777	1,771,420			100		1		-	-	1,771,420	-	-
41	2.009.2	Copco 1 Dam Removal	Installation of 16.5 X 18.5 Roller Gate and Gate Structure	5,848,012	6,276,555		20	80		1		- 1,216	3,387	5,060,168	-	-

2.7 Quantitative Risk Assessment

KRRC completed a Quantitative Risk Assessment (QRA) to analyze uncertainties and risk, to be used as the basis for development of the Project contingency. The primary objective of the QRA is to provide KRRC with a confidence level for the Project contingency reserve and actionable recommendations based upon thorough research and best industry practices. The intent of QRA is to provide the Project and its stakeholder with information about the confidence levels in the present Project budget and schedule, and top project risks driving cost, so that timely, data-driven decisions can be made under the holistic umbrella of statistically-based confidence levels.

To get a comprehensive understanding of the risks, a thorough review of pertinent project documents was completed, including, but not limited to, the Definite Plan, AON's Risk and Insurance Due Diligence Report (Aon 2019), RES's Risk Transfer Plan, the Project estimate of project costs, and Project schedule through construction.

The process also involved working with the Project cost estimator to identify an account for the uncertainties and assumptions in the estimate. Several Estimate Uncertainty sessions were held and the uncertainties that are used as an input to the QRA were reached by consensus. Finally, the Project's planning and construction schedules were reviewed with the Project Team, simplified for the QRA and summarized in a Risk Fragnet.

These three elements are used as the skeleton of the Risk Model:

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Figure 2-1 Risk Model Input Material Schematic

Version: CWE dated July 2019

Klamath Dam Removal Summary

All collected data was used to develop an integrated cost and schedule risk model and perform a QRA. A Monte Carlo simulation was performed to develop the cumulative distributions of Project cost and schedule through which confidence levels were determined. This qualitative risk assessment was performed in compliance with the ISO 31000 Risk Management Framework. For additional details related to the QRA methodology, please refer to Attachment D.

Version: KRRC Risk Register

dated July 2019

Version: Planning Schedule

dated June 2019

Version: Construction Schedule dated July 2019

The Monte Carlo Simulation seeks to develop a large number of randomly generated outcomes (scenarios) for cost and schedule using the risk data obtained throughout the assessment. Each of these outcomes represents a possibility that could occur. The Monte Carlo that was run for this risk assessment used 5,000 iterations of the risk set to arrive at a distribution of scenarios. These 5,000 scenarios are intended to represent an adequate set of all possible outcomes that can result from the risk data set.

Due to the unique nature of this Project and the KRRC, KRRC selected a conservative P80 to represent the appropriate level of contingency for the Project. An 80% confidence level means that of the 5,000 scenarios, 4,000 (80% x 5,000) will be less than or equal to the value selected for the cost or the schedule confidence level. Of course, 1,000 scenarios will be greater than the value at this level of confidence.

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2.8 Ongoing Due Diligence

2.8.1 General

KRRC is undertaking additional due diligence on construction costs, measures to lower construction costs, and measures to manage construction risk. KRRC will complete additional engineering, manage the selected design-build contractor, establish a GMP for the work to be performed, implement its insurance programs, and enforce the Project Agreement requirements for all bid bonds, payment bonds, and the performance bond. Many risks considered in the Monte Carlo analysis that deal with design and regulatory compliance will be mitigated or better understood when this process is completed, likely lowering the contingency significantly.

2.8.2 Independent Board of Consultants (BOC)

The FERC approved the BOC for the Lower Klamath Project on May 22, 2018. Among other things, FERC's letter of approval included a plan and schedule to obtain BOC review of the estimate of project costs and contingency for the Full Removal alternative, adequacy of available funds for facilities removal, adequacy of the proposed contingency reserve, and adequacy of the proposed insurance and bonding arrangements. The five-member BOC includes Dan Hertel, PE (Engineering Solutions, LLC), James Borg, PE (D&H Concepts, LLC), Craig Findlay, PhD, PE, GE (Findlay Engineering, Inc.), Mary Louise Keefe, PhD (R2 Resource Consultants, Inc.), Ted Chant, PE (Chant Limited) and Steve Coombs (Risk Resources, Inc.).

The BOC completed a review of the Definite Plan (KRRC 2018) and the associated estimate of project costs, which resulted in a December 2019 Final Letter Report No. 1 to present their findings, conclusions and recommendations. This followed their first BOC meeting on October 24, 2018, as well as the informal meeting and site visit of October 23, 2018. Matters addressed included the Definite Plan, the feasibility and cost associated with the Definite Plan, as well as the capacity of the KRRC to accept transfer of license from PacifiCorp. After receiving BOC Letter Report No. 1, additional informal cost submittals have been made to the BOC and discussions have been completed to address BOC input from Letter Report No. 1. The KRRC believe that all BOC input has been incorporated or addressed in this amended Estimate of Project Costs report.

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Chapter 3: Cost Category Summaries



COST CATEGORY SUMMARIES

The following sections provide detailed summaries of methods, assumptions and results of the estimate development for the various cost categories and subcategories.

Project Oversight 3.1

Project oversight and administration costs generally include costs associated with KRRC set-up and corporate insurance, management labor and travel, accounting and administrative support, project controls, contract management, BOC participation and facilitation, legal support, and outreach. Oversight costs exclude technical services, engineering, mitigation measures, and construction contracting. Table 3-1 summarizes estimated project costs for project oversight across the various project phases. Project oversight costs are the same for the Full and Partial Removal alternatives.

KRRC developed labor estimates for each activity using the latest understanding of management requirements in any given year, and applicable industry labor rates. KRRC developed ODCs using an understanding of actuals spent to date and requirements to continue management efforts into the future. ODCs include office space, travel, meals, postage, specialty reproduction, and vendor quotes for materials, supplies or services.

Table 3-1 Project Oversight Estimate Per Phase

Est I	D	Estimate at Year of Performance										
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	Total		
	Project Oversight											
	Compensation & Benefits											
10	Compensation & Benefits	29,017	425,830	1,100,000	1,531,000	1,607,550	1,687,928	1,329,243	1,163,088	8,873,655		
	Travel and Meetings											
10	Travel and Meetings	45,223	82,607	85,000	163,000	75,000	75,000	40,000	40,000	605,830		
	Professional Services											
10	CEA Services & Expenses	1,054,732	1,120,224	755,000	712,000	360,000	180,000	-	-	4,181,956		
10	Legal Services; General Counsel	1,109,894	1,373,774	430,000	540,000	540,000	250,000	250,000	100,000	4,593,668		
10	Legal Services; Construction Counsel	-	170,824	1,400,000	1,210,000	250,000	250,000	250,000	50,000	3,580,824		
10	Legal Services; Regulatory Counsel	-	-	850,000	1,340,000	250,000	50,000	50,000	50,000	2,590,000		
10	Legal Services; Corporate Transation Counsel	-	-	300,000	200,000	100,000	50,000	50,000	50,000	750,000		
10	Board of Consultants	-	-	400,000	400,000	400,000	300,000	240,000	-	1,740,000		
10	Land Survey/Title Work	-	-	750,000	723,000	250,000	-	-	-	1,723,000		
10	Accounting and Audit Fees	-	59,395	120,000	75,000	120,000	50,000	50,000	50,000	524,395		
10	Risk Management Services	-	30,000	160,000	272,000	200,000	-	-	-	662,000		
10	Communications External Services	-	130,000	242,000	54,000	-	-	-	-	426,000		
10	Other Professional Fees	-	-	225,000	576,000	500,000	50,000	25,000	25,000	1,401,000		
	Admin, IT, Fees											
10	Admin, IT, Fees	64,717	83,800	200,000	201,000	211,050	221,603	174,512	122,158	1,278,840		
	Owner's Technical Representative (excluding	Permitting, Des	sign Reviews, C	Outreach)								
10	Owner's Technical Representative	-	923,136	811,067	850,000	690,000	520,000	540,000	280,000	4,614,203		
	Owner's Technical Representative (Outreach	only)										
10	Owner's Technical Representative	-	696,604	226,115	71,324	62,114	63,977	65,897	67,873	1,253,904		



Table 3-2 summarizes average Full Time Equivalent (FTE) staffing for the various activities and line items. FTE numbers give a general understanding of how many full-time staff may be working on each activity throughout each year or phase. KRRC calculated FTEs by dividing annual labor costs by the total working hours per year/phase and the average labor rate for each activity. FTE values for the BOC were calculated using working hours for a quarter of any given year, since BOC members are not full-time employees.

Project oversight FTEs are generally highest from 2019 through 2021, as the KRRC will be managing numerous contracts for engineering and construction of the various project components.

Project Oversight Average FTEs Per Phase Table 3-2

Est I	D	FTEs at Year of Performance										
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24			
	Project Oversight											
	Compensation & Benefits											
10	Compensation & Benefits	0.1	1.3	3.4	4.9	5.3	5.8	4.7	4.2			
	Travel and Meetings											
10	Travel and Meetings	0.1	0.3	0.3	0.5	0.2	0.3	0.1	0.1			
	Professional Services											
10	CEA Services & Expenses	3.1	3.4	2.4	2.3	1.2	0.6	-	-			
10	Legal Services; General Counsel	3.3	4.2	1.3	1.7	1.8	0.9	0.9	0.4			
10	Legal Services; Construction Counsel	-	0.5	4.4	3.9	0.8	0.9	0.9	0.2			
10	Legal Services; Regulatory Counsel	-	-	2.7	4.3	0.8	0.2	0.2	0.2			
10	Legal Services; Corporate Transation Counsel	-	-	0.9	0.6	0.3	0.2	0.2	0.2			
10	Board of Consultants	-	-	1.3	1.3	1.3	1.0	0.8	-			
10	Land Survey/Title Work	-	-	2.3	2.3	0.8	-	-	-			
10	Accounting and Audit Fees	-	0.2	0.4	0.2	0.4	0.2	0.2	0.2			
10	Risk Management Services	-	0.1	0.5	0.9	0.7	-	-	-			
10	Communications External Services	-	0.4	0.8	0.2	-	-	-	-			
10	Other Professional Fees	-	-	0.7	1.9	1.7	0.2	0.1	0.1			
	Admin, IT, Fees											
10	Admin, IT, Fees	0.2	0.3	0.6	0.6	0.7	0.8	0.6	0.4			
	Owner's Technical Representative (excluding	Permitting, De	sign Reviews, (Outreach)								
10	Owner's Technical Representative	-	2.8	2.5	2.7	2.3	1.8	1.9	1.0			
	Owner's Technical Representative (Outreach	only)										
10	Owner's Technical Representative	-	2.1	0.7	0.2	0.2	0.2	0.2	0.2			

Liability Transfer 3.2

Indicative pricing for liability transfer was developed by RES and consist of two separate approaches to liability transfer. These approaches include utilization of a specialty corporate indemnitor and development and management of a local impact mitigation fund. Section 2.3 provides a summary of these two proposed liability transfer solutions, and the amended Risk Management Plan for the Project (KRRC 2019) provides a detailed description. The total indicative pricing for these is approximately \$35.5M.

Environmental Compliance and Permitting 3.3

KRRC's plan for compliance with applicable laws and regulations is provided in Section 1.3 of the Definite Plan. Cost estimates reflected in this amended Appendix P are based upon implementation of that plan, and



further assume that the license surrender order to be issued by the FERC will authorize implementation of the Definite Plan (as proposed) and will not impose any conditions that conflict with or are materially inconsistent with the Definite Plan. In additional to FERC 's surrender order (which will incorporate any conditions or requirements of the National Environmental Policy Act, California § 401 Clean Water Act Water Quality Certification, Oregon § 401 Clean Water Act Water Quality Certification, the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act). The California § 401 Clean Water Act Water Quality Certification to be issued by the California State Water Resources Control Board (SWRCB) will include and address any measures needed to comply with CEQA. This report also assumes that implementation of the Definite Plan will require a Section 404 individual permit from the United States Army Corps of Engineers (USACE), coverage under a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permits for construction-related stormwater discharges to surface waters in California and Oregon, and various other state and local permits, as required by applicable law. Table 3-3 summarizes estimated environmental compliance and permitting costs across the applicable project years. Environmental compliance and permitting costs are the same for the Full and Partial Removal alternatives. It should be noted that the PDB will provide some level of support for compliance, and those costs are described separately in Section 3.5.

KRRC developed labor estimates for each activity using an understanding of actuals spent to date, as well as the latest understanding of management requirements in any given year, and applicable industry labor rates. KRRC developed ODCs using an understanding of actuals spent to date and requirements to continue permitting and associated field efforts into the future. ODCs include travel, meals, and vendor quotes for materials, supplies or services.

Table 3-4 summarizes average FTE staffing for the various activities and line items. FTE numbers give a general understanding of how many full-time staff may be working on each activity throughout each year or phase. KRRC calculated FTEs by dividing annual labor costs by the total working hours per year and the average labor rate for each activity.

Environmental compliance and permitting FTEs are generally highest in 2018 while numerous biological surveys are being completed along with development of materials to support FERC.

Table 3-3 Environmental Compliance Estimate Per Year

Est I	D	Estimate at Year of Performance								
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	Total
	Permit Acquisition, CEQA/NEPA Support, Compliance QA During Construction									
	KRRC Agency Fees and Reimbursements									
20	See breakout in Cost Estimate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,992,591
	Owner's Technical Representative (Permitting	J)								
20	Permitting	-	961,316	1,114,541	728,267	310,000	320,000	330,000	340,000	4,104,124



Table 3-4 Environmental Compliance Average FTEs Per Year

Est I	D	FTEs at Year of Performance								
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	
	Permit Acquisition, CEQA/NEPA Support, Compliance QA During Construction									
	KRRC Agency Fees and Reimbursements - Se									
20	See breakout in Cost Estimate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Owner's Technical Representative (Permitting)									
20	Permitting	-	2.9	3.5	2.3	1.0	1.1	1.2	1.2	

3.4 **Technical Support**

Technical Support services include all activities required to complete the preliminary engineering designs, procure the PDB, and to manage and complete design reviews of PDB work. Section 2.2 describes the construction procurement approach for the Project and is a basis for the procurement estimates provided herein.

The first step in the design process was to complete the necessary field work to obtain design data to support the design analyses and drawings. This work was primarily completed in 2017 and 2018. The following activities fall into this category:

- Preliminary Engineering Site Data:
 - Topographic/Bathymetric Surveys: Obtain updated data of topographic and reservoir bathymetric conditions at the Project
 - + Geotechnical Investigations: Obtain geologic information to evaluate reservoir rim stability and other geologic conditions to support design components
 - Hazardous Material Investigation: Complete phase 1 hazardous material assessments for existing hydropower and other pertinent project features
 - Biological Reconnaissance: Obtain initial understanding of existing biological conditions that may affect proposed design layout
 - + Engineering Reconnaissance: Obtain understanding of existing site facilities and infrastructure to inform design and demolition activities
 - + Groundwater Monitoring: Obtain groundwater well data adjacent to reservoirs to assess potential impacts associated with reservoir drawdown
- Vegetation Test Plots: Complete pilot studies using construction test plots to help determine ideal conditions, timing and species associated with reservoir seeding and restoration



• Initial Seed Collection & Propagation: Complete early seed collection and propagation to aid the subsequent PDB effort to provide the required seed volumes for reservoir restoration

The next step in the design process is to refine the preliminary designs based on the latest field data and input from regulatory and other stakeholders. This refined design, which is ongoing, will serve as the basis for environmental and regulatory reviews. Primary project components are listed below and described in detail in the Definite Plan.

- Dam & hydropower demolition (including existing recreation facilities)
- Reservoir area improvements
- Reservoir area restoration
- City of Yreka's pipeline relocation across Iron Gate Reservoir and associated diversion facility improvements
- Transportation improvements (road, bridge and culvert) improvements
- Recreation improvements
- Downstream flood control improvements
- Public health and safety fending
- Implementation of fire management plan
- Spawning gravel augmentation
- Fish hatchery modification and improvements (not included in estimate since funded separately by PacifiCorp)

After preliminary design, the final engineering plans and specifications will developed by the PDB and are summarized separately in Section 3.6.1.

Table 3-5 summarizes estimated technical support costs across the applicable project years. Technical support costs are the same for the Full and Partial Removal alternatives.

KRRC developed labor estimates for each activity using the latest understanding of engineering, procurement and owner's representative requirements in any given year, and applicable industry labor rates. KRRC developed ODCs using an understanding of actuals spent to date and requirements to continue engineering and procurement efforts into the future. ODCs include travel, meals, and vendor quotes for materials, supplies or services.



Engineering & Procurement Estimate Per Year Table 3-5

Est ID		Estimate at Year of Performance										
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	Total		
	Preliminary Engineering (Technical Re	presentative)									
	Technical Preparation	-	3,956,821	4,791,235	-	-	-	-	-	8,748,056		
	Yreka Water Line Design	-		-	477,000	-	-	-	-	477,000		
	Construction Procurement											
	Dam removal construction procurement	-	54,057	644,386	297,874	100,000	-	-	-	1,096,317		
	Owner's Representative (Design Overs	ight)										
	Design reviews	-	115,243	513,831	260,000	-	-	-	-	889,074		
	PDB Management	-	-	-	744,317	370,000	-	-	-	1,114,317		
	Engineer of Record (Yreka Water Line)	-	-	-	-	145,000	-	-	-	145,000		

Table 3-6 summarizes average FTE staffing for the various activities and line items. FTE numbers give a general understanding of how many full-time staff may be working on each activity throughout each year or phase. KRRC calculated FTEs by dividing annual labor costs by the total working hours per year and the average labor rate for each activity.

FTEs are highest for engineering design in 2019, when multiple engineering design teams will be developing final design packages for the various project components.

Table 3-6 Engineering & Procurement FTEs Per Year

Est	ID .	Estimate at Year of Performance									
ID	Heading/Description	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24		
	Preliminary Engineering (Technical Re										
	Technical Preparation	-	12.0	15.0	-	-	-	-	-		
	Yreka Water Line Design	-	-	-	1.5	-	-	-	-		
	Construction Procurement	-	-	-	-	-	-	-	-		
	Dam removal construction procurement	-	0.2	2.0	1.0	0.3	-	-	-		
	Owner's Representative (Design Overs	-	-	-	-	-	-	-	-		
	Design reviews	-	0.3	1.6	0.8	-	-	-	-		
	PDB Management	-	-	-	2.4	1.2	-	-	-		
	Engineer of Record (Yreka Water Line)	-	-	-	-	0.5	-	-	-		

Construction Management 3.5

The estimate and proposed construction management (CM) approach for the Project is based on the information available at the time of the development of this analysis and on the assumption that most Project construction will be performed under the current PDB Agreement.

KRRC estimated construction management to support all construction commencing with mobilization in early 2021, including dam modifications and commencement of work on construction of other components such as access road and bridge work, waterline relocation and downstream flood control improvements. Support continues through reservoir drawdowns into 2022 and ramps-up in the second year of construction for the parallel demolition of dams, and reservoir area restoration.



The proposed CM approach assumes that two construction management offices located at the Iron Gate and Copco areas will be established for 2021, with a third office established in 2022 for the J.C. Boyle area. The estimate also reflects the traveling constraints between each of the sites under the prospective contracts.

The principal construction management office will be located near the existing Copco No. 1 dam, where the Senior Construction Manager is located. There will be one Assistant Construction Manager, one Administrative Assistant, and one Project Control Manager to support the Senior Construction Manager, who will be located in the Copco No. 1 dam offices. Secondary construction management offices will each be headed up by a separate Construction Manager. Costs for these facilities are included in the construction Contractor's general conditions.

Third-party inspection oversight on the PDB is an important factor in construction management of a sensitive high-visibility project such as this. Inspectors will provide oversight of Contractors' safety, quality, environmental, cultural and scope compliance. They will also make timely observations of construction progress and conditions, to support identification of potential productivity issues, and support avoidance and evaluation of potential change work.

KRRC assumed that some construction work may occur outside normal working hours and is likely required for excavation of Iron Gate dam and demolition of Copco No. 1 dam. A second shift Inspector has been included for 5 months to allow for this likelihood.

A Safety Manager and Quality Manager are included at 20 hours/month each to provide audits of contractor and construction management practices against established procedures and standards.

KRRC calculated labor costs based on applicable industry contract rates where available and escalated them at 3% annually. KRRC based all labor costs on a 40-hour work week, except for construction manager and inspector labor costs which are based on a 50-hour work week. An allowance of 20% on labor has been included to cover ODCs including travel, lodging and other remuneration associated with the remote sites.

The estimated project cost assumes that cultural resources and environmental monitoring will be required. These costs are not captured in the CM section but are included elsewhere in this estimate.

Table 3-7 Table 3-7summarizes estimated construction management costs on a per-year basis, per labor category and shows ODCs included in the estimate. Construction management costs are the same for the Full and Partial Removal alternatives.

Table 3-8 show staff included in this estimate, where 1.00 = one FTE for one month.



Construction Management Estimate Per Year Table 3-7

Construction Management Staff	FTEs	Hrs/ Week	2021		2022		2023	Subtotal		
Sr. Construction Manager	1	40	\$	497,611	\$	554,718	\$ 281,458	\$	1,333,787	
Assistant Construction Manager	1	50	\$	426,109	\$	380,047	\$ 135,004	\$	941,160	
Administrative Assistant	1	40	\$	177,555	\$	252,584	\$ 140,872	\$	571,011	
Project Control Engineer	1	40	\$	340,887	\$	346,725	\$ 150,691	\$	838,303	
Construction Manager	varies	50	\$	1,538,675	\$	1,302,831	\$ 481,105	\$	3,322,612	
Inspector	varies	50	\$	963,492	\$	1,014,729	\$ 531,337	\$	2,509,558	
Second Shift Inspector	varies	50	\$	140,345	\$	308,758	\$ 168,414	\$	617,516	
Scheduler	0.5	40	\$	144,619	\$	132,608	\$ 49,441	\$	326,668	
Safety Manager	0.5	40	\$	170,444	\$	156,288	\$ 58,270	\$	385,002	
Quality Manager	0.5	40	\$	170,444	\$	156,288	\$ 58,270	\$	385,002	
ODCs at 20%	- E	æ	\$	729,292	\$	734,162	\$ 327,680	\$	1,791,134	
TOTAL			\$	5,299,473	\$	5,339,737	\$ 2,382,543	\$	13,021,753	



Table 3-8 Construction Management FTEs Per Month

							20	21											20	22						2023
CONSTRUCTION MANAGEM	MENT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Role	Responsibility																									
Iron Gate																										
Construction Manager	Dam Mods/Removal CM	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Inspector	Dam Mods/Removal	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Second Shift Inspector	Dam Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-
Construction Manager	Yreka Water Supply CM	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inspector	Yreka Water Supply	-	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inspector	Downstream Flood Improvements	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inspector	Specialty Inspection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33	0.33	0.33	0.33	0.33	0.33	0.33	-	-	-	-
Scheduler	Schedule management	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.5
Safety Manager	Safety manager	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.5
Quality Manager	Quality manager	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.5
ODCs at 20%																										
Copco 1 & 2																										
Sr. Construction Manager	Overall CM Oversight	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Assistant Construction Mana	Assistant to Sr. CM	-	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Administrative Assistant	Main Office Admin.	-	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Project Control Engineer	Project Controls Lead	-	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Construction Manager	Dam Mods/Removal CM	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Inspector	Dam Mods/Removal	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Second Shift Inspector	Dam Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00	1.00	1.00	-	-	-	-
Inspector	Roads & Bridges	-	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inspector	Specialty	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33	0.33	0.33	0.33	0.33	0.33	0.33	-	-	-	-
ODCs at 20%																										
JC Boyle																										
Construction Manager	Site Lead Construction Manager	-	-	-	-	-	-	-	-	-	-	-	-	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Administrative Assistant	Extra Admin. at Remote Site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5
Inspector	Dam Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
Inspector	Specialty	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.33	0.33	0.33	0.33	0.33	0.33	0.33	-	-	-	-
ODCs at 20%																										

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3.6 **Progressive Design-Build Contract**

Final Design & Permitting Support 3.6.1

As part of the existing Agreement with Kiewit, the preliminary services scope includes the primary tasks listed below. The current allocated budget for these scope items is approximately \$18M, which was negotiated through the competitive RFP process.

- Project Management
- **Project Site and Project Conditions Verification**
- Permitting Support and Compliance Program
- Initial Cost Model and Schedule
- Design Criteria Report
- 30% Design Completion Documents
- 60% Design Completion Documents
- GMP Project Submittal and Supporting Cost Estimates
- 90% Design Completion Documents

Subsequent tasks for 100% design, seed collection and propagation, and invasive weed management have been estimated at approximately \$3.7M and will be negotiated with Kiewit in the coming months.

3.6.2 Dam Removal

The dam removal scope for Full and Partial Dam Removal alternatives is defined in Section 5 of the Definite Plan and was used as the basis for this estimate. Estimates were developed using the methods and schedule constraints summarized in Section 2.4 of this report. Escalation was applied per Section 2.6.

Pertinent assumptions from the Definite Plan are as follows:

- KRRC confirmed or updated quantities where new information was available, and as described in Section 5 of the Definite Plan.
- Estimate and schedule assumes that a second shift will be required for Copco No. 1 and Iron Gate demolition. KRRC assumed two 10-hour shifts, 5 days a week.



- Estimate and schedule assumes that work days are 8 hours per day, 6 days a week for Copco No. 2 and J.C. Boyle demolition.
- All concrete demolition debris will be hauled to onsite disposal area as described in more detail in Section 5 of the Definite Plan for Decommissioning (KRRC 2018).
- All earth work material from excavation activities will be hauled to onsite disposal area as described in more detail in Section 5 of the Definite Plan for Decommissioning (KRRC 2018).
- All concrete and earthwork demolition material will be processed during demolition activity and there is no process equipment (crusher, screener, and stacker) operated at disposal areas.
- While Kiewit will manage the entire design build process as the prime, it is assumed that subcontractors will be used for certain specialized activities.

For any electrical or transmission facility demolition that is attached to existing or future electrical facilities to remain online and under the ownership of PacifiCorp, costs associated with design and construction are assumed to be the responsibility of PacifiCorp and are not included herein.

The savings associated with the partial removal alternative is detailed in Attachment A and includes the net savings after considering maintenance costs over a 10-year period for those facilities that remain in place.

3.6.3 Reservoir Area Improvements

This estimate assumes that a small percentage of sediment that remains in the reservoirs after drawdown will be mechanically excavated and placed elsewhere in the proposed floodplain area. Earthwork excavation volumes within the reservoir are based on surface models from historical site surveys compared to recently collected bathymetric data. KRRC developed labor rates, equipment rates, and materials costs from a combination of actual costs from past similar projects and RS Means Heavy Civil publication. Construction cost data used from past restoration projects with similar complexity, construction techniques and size include:

- 1. Snake River restoration near Boise, Idaho constructed in 2016
- 2. Kootenai River restoration near Bonners Ferry, Idaho constructed in 2010 2018
- 3. Rogue Basin restoration near Medford, OR constructed in 2010
- 4. Multiple helicopter large wood placement costs throughout Oregon on projects constructed in 2010 2018

Unit rates and quantities associated with the various activities that make up this work can be found in Attachment A. This estimate assumes the following:



- Earth excavation and subsequent fill (or disposal) will happen at the same time so that material is handled only once and placed on-site in the final location with minor grading and compaction. KRRC based volume estimates on neat line quantities using digital surface models.
- All excavated material is suitable for in-water disposal and will be disposed of on-site.
- Estimates include equipment and road access into site, assuming 3,000 linear feet (LF) on center (OC) or 0.56 miles per site (6 sites).

KRRC proposes elements for bank stability and channel fringe complexity and will include a process-based restoration and velocity variations along bank line by adding large wood complexity for resting zone, feeding seams, cover and velocity refugia. KRRC based restoration areas and treatments on expected conditions after drawdown and may change based on actual conditions.

Areas identified for reservoir earthwork activities and engineered stability elements are described and shown in plan in Appendix H, Restoration Plan, of the Definite Plan.

3.6.4 Reservoir Restoration

Restoration activities can be broken into three primary categories: (1) Earthwork/engineered improvements (Section 3.6.3 above), (2) pre-drawdown activities, and (3) post drawdown activities. The following text summarizes key assumptions that are pertinent to the estimate development for the second two categories. A full description of these components can be found in Appendix H, Restoration Plan, of the Definite Plan.

Pre-drawdown activities include seed collection, seed propagation and weed eradication, as further summarized below. In addition to the work described below, KRRC assumes completion of an RFP process to select a contractor or vendor for each activity.

1. Seed Collection: The main component of the revegetation process will be locally eco-typic seed of native plants for four different planting zones (bank wetland, bank riparian, floodplain riparian, and upland) based on hydrology. The seed will preserve the genetic integrity of the site and provide species and genetics best suited for this specific landscape. Collection of locally eco-typic seed subsequently grown by commercial growers to produce large amounts of seed or plant material will require advanced planning and will be implemented during the pre-dam removal period. To produce 50,000 lbs of pure live seed (PLS) in each of the four growing years before the 2023 fall season (totaling 200,000 lbs.), it is assumed that 3-7 lbs. of PLS/acre of wild collected seed will produce 2,000 lbs PLS/ acre. KRRC based this estimate upon propagation rate quotes obtained from BFI Native seed and Pacific Coast Seed. Conservatively, the higher seeding rate of 7 lbs PLS/acre is assumed to be planted on 25 acres at the seed propagation farm totaling the 175 lbs PLS of seed needed each year and resulting in the expected 50,000 lbs PLS if 2,000 lbs PLS is produced per acre on 25 acres. The cost of collecting 1 pound of wild seed ranges from low \$1,000 to high \$1,800. The seed must then be cleaned, stored in climate control warehouses and in some cases pre-treated. Seed pre-treatment may include scarification, stratification, imbibition, and others. Wild



collected seed will be substantially more expensive than propagated seed due to additional cleaning costs.

- 2. Seed Propagation: In order reach the goal of 200,000 lbs. of PLS over 4 years, 25 acres of land will need to be rented to propagate collected seed (with an assumed minimal yield of 2,000 lbs PLS/acre) to produce 50,000 lbs per year. KRRC based the yield and other unit cost estimates on information received from BFI, J Herbert Stone nursery, Pacific Coast Seed and the local forest service office.
- 3. Weed Eradication: The objective will be to implement a combination of weed control techniques that minimize the extent of environmental degradation and reduce the impact of chemical inputs on humans and non-target organisms. To identify the populations of existing invasive species, a field survey will be conducted at the site, geo-locating all invasive species. Assuming 100% of the project area outside of the existing reservoirs needs to be surveyed, it will take approximately 900 hours to survey the area. For a Scientist and Principal Scientist, the estimated cost is \$135,000 plus approximately \$2,247 for gas & mileage and \$21,000 for per diems and accommodations. In the years before drawdown, KRRC assumed that 30% of the site above the water line of the reservoir (85- acres) will require invasive species eradication. KRRC based this percentage on estimates from surveys performed in 2017-2018. Once drawdown occurs, the acreage of the site with vegetation will increase along with the need for invasive species control. For two years after drawdown, KRRC assumed 300 acres to potentially require weed eradication treatment.

Post-drawdown activities include pioneer seeding, pole cutting and salvaged plant collection, revegetation in each planting zone, followed by establishment period and long-term maintenance. Each activity is further summarized below:

1. Pioneer Seeding: Establishing a pioneer crop on the site soon after drawdown of the reservoirs is essential to prevent erosion, development of inhospitable substrate, and invasive species from establishing at the site, and building up soil biota and structure. The pioneer seed mix is intended to take advantage of less expensive native seed. The seed generated in large amounts during propagation (overstock), and sterile non-native seed (sterile wheat and Regreen) can readily establish in the sediment and will be less of a risk if it is washed out due to spring flooding or if it freezes in the early months of the year. Once river and soil conditions have stabilized, a fall broadcast seeding will be applied including locally ecotypic, native and diverse seed stock for each planting zone. Broadcast aerial seeding will be performed from helicopter(s) and is a very costefficient method of application. KRRC based pricing on an estimate from Ben Timberland (Timberland Helicopters, Inc., Ashland, OR) on the hourly rate of \$950/hr. at the rate at which the operator can distribute the seed. KRRC assumed that the seed weighs on average 14 lbs/cubic foot, with a seed bucket that holds 27 cubic feet of seed, 12 minutes is assumed for each bucket. For distributing 100 lbs. PLS per acre, KRRC estimated to be 140 hours totaling 133,000 for a medium cost. The cost of seed per pound is based on cost for readily available seed from nurseries that are anticipated be working within the Project (i.e., California brome = \$8-9 per PLS).



2. Pole Cuttings and Salvaged Plants: The establishment of habitat will greatly accelerate with the installation of pole cuttings, as well as transplantation of salvaged plants. These plants will also help prevent erosion and add species diversity to the site. KRRC's contractor will collect pole cuttings and potentially store them, short-term, prior to installation. 'Salvaged plants' will be transplanted on site therefore their costs are not associated with contract growing and nursery care. KRRC assumed that the contractor will absorb the cost of an expected 30% mortality rate of the pole cuttings. KRRC's contractor will collect pole cuttings from areas surrounding the site. To increase the number of pole cuttings available, in the year prior to drawdown, contractors will selectively cut back pole cutting species marked for plant salvage. This will promote an ample supply of young growth that can be harvested as needed the following year. It is assumed that the harvest and installation will be simultaneous, limiting the need for storage off-site. The number of pole cuttings allotted will vary by zone. Each 100 square foot (SF) area, for both the bank riparian and bank wetland zones, will include five pole cuttings. For the floodplain riparian zone, each 100 SF area will contain one pole cutting.

3. Revegetation

- a) Emergent Wetland Planting Zone: Revegetation for emergent wetlands will be installed instream along the river's edge. This vegetation will consist of 100% salvaged plants, taken from the rim of the reservoirs. During the first year, KRRC assumes salvaged plants at 20 LF OC along the edges of the river. The following spring, once the plants have established, KRRC's contractor will harvest propagules from installed salvaged plants and will then be planted at 10 LF OC between the plants from the prior year. KRRC based cost estimates for plant layout per acre on estimates from Caltrans and RS Means.
- b) Bank Wetland Planting Zone: Bank wetland zones will be delineated as areas suitable for plant growth approximately between the base flow and 2-year flood event water surface elevations (Q2) of the Klamath River. These areas will consist of salvaged plants and pole cuttings. KRRC expects 50 percent of this area to be restored. KRRC's contractor will transplant salvaged plants to this zone from the existing reservoir edge. KRRC based cost estimates for this work on RS Means and Caltrans data for the operation of a backhoe with a bucket and the plantings for pole cuttings. KRRC's contractor will install pole cuttings in this initial stage of planting in the spring after drawdown. KRRC's contractor will perform plant layout for all plants by the Contractor's crews marking each planting spot with a pinflag for an overall review by a restoration ecologist. KRRC's contractor will aerial seed the pioneer crop in all zones early in the drawdown year creating fast-growing erosion control before the river stabilizes. Once the pioneer crop has grown, KRRC's contractor will either roll or mow it to help open the soil to sunlight and create a habitat for the fall broadcasting of ecotypic native seed. In the early spring of the following year, KRRC's contractor will layout and install one pole cutting per 100 SF.
- c) Bank Riparian Planting Zone: The Bank Riparian Zone will extend approximately from the 2-year (Q2) to the 25-year (Q25) flood water surface elevations (Q-lines) of the Klamath River. KRRC expects 50 percent of this area to be available for restoration. It will be the most critical zone for rapid re-establishment of riparian habitat, short-term stability of the channel and banks, and for



long-term establishment of an important transitional area between the riverine features and floodplain habitat areas. Planting densities within the riparian-bank areas will be variable, however, the substantial density of initial planting will be important to prevent invasion by reed canary grass (Phalaris arundinacea), a highly invasive non-native hybrid that is widespread around the reservoirs. The Bank Riparian zone will have a similar treatment to the Bank Wetland; with the same plant material and spacing. After drawdown, KRRC's contractor will transplant the plants from the rim of the reservoir to the river's edge. In the pioneer seeding process, KRRC's contractor will mainly apply mycorrhiza with the seed in this area. In the fall, the area will be broadcast seeded with ecotypic zone selected seed. KRRC's contractor will install an additional pole cutting in the following spring. Selected areas will be fenced off to deter deer predation and to serve as a seed bank to areas without fencing. Costs for fencing and installation is based on Caltrans data.

- d) Floodplain Riparian Planting Zone: Floodplain riparian zones will be delineated as those areas suitable for revegetation that occur approximately between the 25-year (Q25) and 100-year (Q100) flood water surface elevations of the Klamath River. The Riparian Floodplain Planting Zone will be planted similarly to the Bank Riparian Planting Zone; however, the plant densities will decrease, producing a decrease in plant layout costs for this zone. For each 100 SF area, there will be one pole cutting and one seed plant installation in the second year. The cost of construction/installation maintenance decreases slightly from Bank Riparian area; it will have an18-month duration, until Plant Establishment. This section also includes emergency overhead irrigation in the high price estimate. Costs include \$60k for setup and design, \$40k/month to rent and \$30k to disassemble the irrigation system, and a 5-month rental (\$320K) and an uncertainty factor of 2 for 1,790 acres (costs pro-rated from the estimate for the Project). KRRC based costs for this on a quote from Rain for Rent for the entire site that includes design and rental of all equipment.
- Uplands below Rocky Wake Zone: The area between the upper edge of the Riparian Floodplain Planting Zone and the lower edge of the Rocky Wake Planting Zone constitutes the Uplands below the Rocky Wake Planting Zone. This area is the only formerly submerged area where upland vegetation will grow on sedimentary substrate. KRRC expects 50 percent of this area to be restored. The restoration process will be the same as for the planting zones below; mycorrhizal inoculant will be in the pioneer seed mix in the spring, broadcast seeding of the native ecotypic seed will be conducted in the fall 2022, and a final seeding in spring 2023 with deer fence, emergency irrigation, and construction/installation maintenance. However, plantings in this zone will consist of four woody plants per 100 SF. Species will include acorns, juniper berries, pine nuts fir and various shrubs. KRRC's contractor will install these plants with cocoon irrigation planters that will irrigate the plants and slowly deteriorate as the plant becomes selfsustainable. KRRC's contractor will use an auger to create a planting pit approximately 2 feet in diameter and 1 foot deep. KRRC based installation costs upon Saylor's installation cost.
- Rocky Wake Planting Zone: The Rocky Wake Planting Zone is the area of wake and wave action erosion around the edge of the existing reservoirs. Fluctuations of water level and wave action in the reservoir has eroded soil in a band or 'bathtub ring' leaving exposed rocky substrate, bedrock and areas that lack in vegetation. KRRC assumed that only 20% of this area is feasible to



restore. Soil amendments consisting of mycorrhizal inoculant will be added at the time of seeding. After the pioneer crop is broadcast seeded in the spring, the grown vegetation will be mowed or rolled in preparation for the fall broadcast seeding of the ecotypic seed. The plant selection and densities will be the same as the uplands below rocky wake zone. KRRC's contractor will place deer fence in selected areas within the zone to create areas free of deer predation. These areas will serve as seed banks for the rest of the site if predation becomes severe. Additionally, overhead irrigation is included in the high estimation cost.

- g) Disturbed Uplands Planting Zone: The Disturbed Uplands Planting Zone will consist of the existing developed areas proposed for demolition and recreational areas that will be removed after drawdown occurs. The revegetation schedule remains the same. However, the initial soil preparation may vary. These areas will most likely have highly compacted areas due to the existence of concrete or vehicular traffic on gravel areas. In these areas, it is assumed that 75% of the recreation area will need de-compaction. KRRC's contractor will cross rip compacted areas (before fall seeding) to a depth of 24 inches to loosen the soil and prepare it for seeding and planting. After de-compaction, KRRC expects this area to have healthy viable soils, so it is assumed that 90% of the area will be restored.
- h) Upland Stockpiles Planting Zone: Upland Stockpiles Planting Zones include areas where materials from the dam removal will be deposited. The topsoil in these areas will be heavily compacted. The revegetation process for these areas will be the same as for the Disturbed Uplands Planting Zone, however, 100% of this zone will have to be de-compacted, slightly increasing it's per acre cost. KRRC based estimates for this treatment on RS Means data for \$110 to rip soil with a bulldozer.
- Undisturbed Uplands Planting Zone: The Undisturbed Uplands Planting Zone will consist of areas above the Rocky Wake Zone that may be only minimally disturbed by the eradication of invasive exotic species. These areas will go through active weed removal for at least 3 years before drawdown. KRRC's contractor will reseed potential bare and disturbed patches resulting from invasive species eradication with a native upland seed mix via broadcasting. The majority of these areas will have existing native vegetation and only 30% is expected to need restoration.
- 4. Establishment Period Maintenance: KRRC assumes that the Project will be monitored and maintained for 5 consecutive years. Costs associated with this activity is covered by the Special Corporate Indemnitor, as summarized in Section 2.3.
- 5. Long-term Maintenance: After Establishment Period Maintenance and Monitoring, long-term monitoring is assumed to continue for 4 years. Costs associated with this activity is covered by the Special Corporate Indemnitor, as summarized in Section 2.3.

Yreka Water Supply Improvements 3.6.5

KRRC assumed for development of this estimate that an underground pipeline will be constructed to relocate the City of Yreka's water supply line currently crossing Iron Gate reservoir. This relocation option is discussed in detail in Section 7.5 of the Definite Plan.



The scope for relocating the Yreka waterline will involve installation of two micro-tunneling pits on either side of the Klamath River. Once these pits are fully excavated and shored, micro tunneling equipment will install a 36" steel casing below the river bed. Once the casing is installed, a new 24-inch waterline will be installed to take the place of the river crossing section of the existing water line. On either side of the Klamath River, the new pipe will be installed using an open cut excavation method. Once the waterline is completely installed, tested and active, the micro tunneling pits and the open excavation are to be backfilled with existing material. Once the backfill operation is complete, the existing waterline will be removed and recycled.

The cost estimate for the Yreka Water Supply Improvements was developed using the RS Means database with a city cost index adjustment of Redding, CA. Crew output for each operation was adjusted to account for access, location, and construction operation. KRRC assumed that a pile and lagging wall will be used to shore micro tunneling pits and it will be installed simultaneously with the excavation operation.

3.6.6 Transportation Improvements

This section describes the proposed road improvements and maintenance activities that are the basis for the estimate of project costs. It is based on design information provided in Sections 5 and 7.4 of the Definite Plan. Several road, intersection, structure and culvert improvements are proposed as part of the Project to:

- Facilitate access for project-related vehicles and equipment associated with dam removal
- Provide safety measures for both public and project roads used during the dam removals
- Return roads used by project-related vehicles to the respective owners and users in an acceptable state, restoring any reduction in function attributed to the Project

The improvements will be implemented at various phases throughout the Project. Some will require completion prior to the dam removals (related to construction access), and others will be contingent on a future assessment of road elements once reservoir drawdown or hauling activities are complete (maintenance activities). There will also be some ongoing activities throughout the Project to maintain roads heavily trafficked by project construction vehicles.

Table 3-9 provides a summary of all pertinent road segments, bridges, and culverts and the associated improvements or maintenance. Table 3-10 summarizes maintenance and rehabilitation cost assumptions associated with roads being used for construction access. Section references within the table refer to the sections within the Definite Plan.



Table 3-9 Transportation Improvements

Location	Improvements	Purpose						
	(Section References to Definite Plan (KRRC 2018))	Construction Access	Drawdown Related	Maintenance/ Rehabilitation				
J.C. Boyle								
The Dalles California Highway (US97)	Pavement rehabilitation unlikely during or post-Project (Section 5.2.2)			Х				
Green Springs Highway (OR66)	Pavement rehabilitation unlikely during or post-Project (Section 5.2.2)			X				
Keno Worden Road	Pavement rehabilitation unlikely during or post-Project (Section 5.2.2)			Χ				
Topsy Grade Road	Potential pavement rehabilitation during or post-Project (Section 5.2.2)			Χ				
Culvert at Unnamed Creek	 Potential sediment removal and downstream erosion protection (Section 7.4.3) 		Х					
J.C. Boyle Dam Access Road from OR66	Re-grading uneven or rutted areas (Section 5.2.2)	Х						
Junction of OR66 and J.C. Boyle Dam Access Road	 Intersection widening (Section 5.2.2) Tree removal (Section 5.2.2) Signage (Section 5.2.2) 	X						
Timber Bridge	Remove (Section 5.2.2)	Χ						
Power Canal Access Road	 Periodic roadway maintenance grading during construction (Section 5.2.2) 	Х						
J.C. Boyle Disposal Access Road	Re-grading (Section 5.2.2)Minor widening (Section 5.2.2)	X						
Copco and Iron Gate								
Copco Road (I-5 to Ager Road)	Potential pavement rehabilitation during or post-Project (Section 5.2.2)			Χ				
Copco Road (Ager Road to Lakeview Road)	Potential pavement rehabilitation during or post-Project (Section 5.2.2)			X				

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Location	Improvements	Purpose						
	(Section References to Definite Plan (KRRC 2018))	Construction Access	Drawdown Related	Maintenance/ Rehabilitation				
Dry Creek Bridge	Temporary bridge for construction access during Project (Section 5.2.2)	Х						
Copco Road (Lakeview Road to Daggett Road)	 Roadway maintenance during construction (Section 5.2.2) Potential pavement rehabilitation during or post-Project (Section 5.2.2) 	X		Х				
Unnamed Culverts between Brush Creek and Scotch Creek	Potential rehabilitation or replacement post-construction (Section 7.4.3)			X				
Scotch Creek Culvert	Replace (Section 7.4.3)		Х					
Camp Creek Culvert	Replace with bridge (Section 7.4.3)		Х					
Jenny Creek Bridge	Replace (Section 7.4.3)		Χ					
Copco Road (Daggett Road to Copco Access Road)	 Potential road surface maintenance during or post-Project (Section 5.2.2) 			Х				
Fall Creek Bridge	Replace (Section 5.2.2)	Х						
Copco Road (Copco Access Road to Copco Road Bridge)	 Potential road surface maintenance during or post-Project (Section 5.2.2) 			X				
Beaver Creek and E.F. Beaver Creek Culverts	Potential erosion protection (Section 7.4.3)		Х					
Raymond Gulch Culvert	Potential erosion protection (Section 7.4.3)		Х					
Copco Road Bridge	Potential abutment erosion protection (Section 7.4.3)		Χ					
Copco Access Road	 Clear, grub and regrade (Section 5.2.2) Minor widening into hillside if possible (Section 5.2.2) Remove after construction is complete and restore area to native vegetation 	X						
Copco Cove Access	Minor works to enable barge mobilization (Section 5.2.2)	Х						

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Location	Improvements	Purpose						
	(Section References to Definite Plan (KRRC 2018))	Construction Access	Drawdown Related	Maintenance/ Rehabilitation				
Culverts at Unnamed Creeks (Copco Lake)	Potential erosion protection (Section 7.4.3)		Х					
Ager Beswick Road	None (Section 5.2.2)							
Mallard Cove Boat Ramp Access	Minor works to enable barge mobilization (Section 5.2.2)	Х						
Daggett Road	 Minor grading improvements (Section 5.2.2) Potential road surface maintenance during and post-Project (Section 5.2.2) 	X		Х				
Daggett Road Bridge	Replace (Section 5.2.2)	Χ						
Lakeview Road (Copco Road to Iron Gate disposal site)	 Potential road surface maintenance during and post-Project (Section 5.2.2) 			X				
Lakeview Road Bridge	Replace (Section 5.2.2)	Х						
Iron Gate Powerhouse Access Road	 Signage Potential road surface maintenance during construction (Section 5.2.2) Remove after construction is complete and restore area to native vegetation (Section 5.2.2) 	X		Х				
Iron Gate Left Abutment Access Road	 Remove after construction is complete and restore area to native vegetation (Section 5.2.2) 	X						
Iron Gate Upstream Left Abutment Access Road	 Remove after construction is complete and restore area to native vegetation (Section 5.2.2) 	X						
Other Locations								
Pedestrian Bridge #1	Will likely need to be removed by KRRC (Section 7.2). Cost estimate includes demolition only.			X				

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Location	Improvements	Purpose						
	(Section References to Definite Plan (KRRC 2018))		Drawdown Related	Maintenance/ Rehabilitation				
Pedestrian Bridge #2	 Evaluation will be performed by KRRC to determine whether removal or replacement will be required (Section 7.2). Cost estimate includes demolition only. 			X				

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Table 3-10 Road Maintenance Assumptions

Location	Maintenance/Rehabilitation Assumptions
J.C. Boyle	
The Dalles California Highway (US97)	• None
Green Springs Highway (OR66)	• None
Keno Worden Road	• None
Topsy Grade Road	Pre and post-construction 0.9 miles of 9-inch aggregate base section repair
J.C. Boyle Dam Access Road from OR66	 Pre-construction improvements include minor cut/fill, 0.25 miles of new 9-inch aggregate base section and 0.7 miles of 9-inch aggregate base section repair; Post-construction improvements include 0.6 miles of 9-inch aggregate base section repair
Power Canal Access Road	Pre and post-construction 1.5 miles of 9-inch aggregate base section repair
Powerhouse Access Road	• None
J.C. Boyle Disposal Access Road	Minor regrading & widening
Copco and Iron Gate	
Copco Road (I-5 to Ager Road)	Post-construction 1-mile new asphalt overlay
Copco Road (Ager Road to Lakeview Road)	 Pre-construction improvements include 0.5 miles of crack sealer, and 0.75 miles of new asphalt section; Post-construction improvements include 1.0 miles of new asphalt overlay
Copco Road (Lakeview Road to Daggett Road)	 Pre-construction improvements include 1.0 mile of crack sealer, and 1.5 miles of new asphalt section; Post-construction improvements include 2.0 miles of new asphalt overlay
Copco Road (Daggett Road to Copco Access Road)	Pre and post-construction 1.5 miles of 9-inch aggregate base section repair
Copco Road (Copco Access Road to Copco Road Bridge)	 Pre and post-construction 1.5 miles of 9-inch aggregate base section repair Post-construction 0.25 mile overlay and minor riprap
Copco Access Road	 Pre-construction 2,500 CY cut/fill and 0.9 miles 9-inch aggregate base overlay Remove after construction is complete and restore area to native vegetation
Ager Beswick Road	• None
Mallard Cove Boat Ramp Access	Minor works to enable barge mobilization
Daggett Road	• None
Lakeview Road (Copco Road to Iron Gate disposal site)	Post-construction improvements include 0.7 miles 6-inch aggregate base overlay
Iron Gate Powerhouse Access Road	Remove after construction is complete and restore area to native vegetation



Location	Maintenance/Rehabilitation Assumptions
Iron Gate Left Abutment Access Road	Remove after construction is complete and restore area to native vegetation
Iron Gate Upstream Left Abutment Access Road	Remove after construction is complete and restore area to native vegetation

3.6.7 Recreation Plan

Costs associated with demolition of existing recreation facilities are included in the dam removal cost category. This section summarizes assumptions associated with construction of any new recreation facilities connected with the Project. Although the final recommendation for proposed recreation facilities has not been made, a list of possible improvements have been scoped for inclusion in this cost estimate.

Recreation costs were derived from itemized estimates for the various recreation facilities listed in Table 3-11. Rates and prices are derived from a combination of historical contracting information including Lake Berryessa Recreation Area Renovation project, and RS Means. Specific unit rates and quantities for the various activities involved at each site can be found in Attachment A.

Table 3-11 Proposed New Recreation Facilities

Site Name	Description
River Access Sites	
Keno River Access Site	The proposed Keno River Access Site would be located just downstream of Keno Dam on the river left. A river access launch site at this location would provide whitewater boating, fishing, general boating and informal shoreline recreation opportunities and mitigate Project whitewater boating and fishing impacts. The proposed river access launch (put-in) site includes an extension of the dam access road through the end of the existing Keno Camp parking area and a 10-foot wide, compacted gravel trail to a natural surface boat launch. In addition to the new access road improvements, trail, and gate, the site would include a turnaround and staging area for commercial vehicles, an information kiosk with angler box, a boat launch staging area, basalt retaining and seat wall, and basalt steps leading down the embankment to the river's edge.
Highway 66 Bridge River Access Site	The Highway 66 Bridge Crossing River Access Site would be located along the left bank of the Klamath River just south of the Highway 66 road crossing. A site at this location would provide river access for whitewater boating, fishing, general boating, and informal shoreline recreation opportunities. The proposed site includes both parking and launch facilities, and site amenities would include a paved parking area, boulders along the access road to prevent offroad driving, paved path to a universally accessible vault toilet, informational kiosk with angler box, bench, gathering area, garbage facilities, and trail down to the boat ramp.



Site Name	Description
Moonshine Falls River Access Site	The proposed Moonshine Falls River Access Site would be situated below the dam, at the power canal and south of the timber bridge crossing on the river right. A site at this location would provide whitewater boating, fishing, general boating, and picnicking/day use opportunities with upstream views of Moonshine Falls and downstream river views of the riparian corridor. The parking area would be in an area where former power canal facilities would be removed, resulting in less earthwork and disturbance needed. The parking area would include access road improvements, a paved path leading to 3 picnic sites and a universally accessible vault toilet, and garbage facilities.
Turtle Camp River Access Site	The Turtle Camp site is located along the right bank of the Klamath River within the Hell's Corner Reach of the river. Potential modifications to this site would provide a river access for whitewater and drift boating, fishing, and informal shoreline recreation opportunities. The proposed modifications to this site would include a new access road to a small parking area and formal boat launch and take-out site. Additional site amenities include paths to one picnic site, garbage facilities, a universally accessible vault toilet, information kiosk with angler box, and parking for 12 vehicles (including one space for ADA-accessible parking) and two oversized parking spaces for large vehicles and trailers.
Copco Valley River Access Site	The proposed Copco Valley River Access Site would be located on the right bank of the Klamath River in an area currently inundated by Copco Lake and near the existing Copco Cove recreation site, which would be removed during Project implementation. The proposed recreation site includes extensive parking areas for private and commercial boaters, as well as day use facilities and a boat launch.
Copco No. 2 Powerhouse River Access Site	The proposed Copco No. 2 Powerhouse River Access Site would be located on the river left on the south end of the existing powerhouse area near the maintenance buildings. The site would contain parking areas for 12-24 vehicles (including one space for ADA-accessible parking), 2 pull-through trailer parking spaces. an information kiosk with angler box, garbage facilities, and universally accessible vault toilet.
Camp Creek River Access Point	The Camp Creek River Access Site would be located on the right bank of the Klamath River in an existing user created area above and within the area currently inundated by Iron Gate Reservoir, near the existing Iron Gate Dispersed Site 3. Site amenities would include a trailhead and information kiosk with angler box, garbage facilities, universally accessible vault toilet, paved trail to 5 picnic sites, and compacted gravel surface trail to 2 river access areas. The parking area and picnic sites would be located on an existing hill while the trail to the river and 2 river access areas would be located within the reservoir drawdown area along the banks of the historic river channel.
Iron Gate Hatchery River Access Site	The Iron Gate Hatchery Day Use Area is an existing recreation site located downstream of the Iron Gate Dam and includes an undeveloped boat launch. The site would include a large parking area for 48 vehicles (including 2 spaces for ADA-accessible parking) and 4 vehicles with trailers and a boat launch. The site would also include infill vegetation, universally accessible vault toilet, garbage facilities, a beach, and an information kiosk with angler box.

3.6.8 **Downstream Flood Control Improvements**

Costs associated with mitigating potential flooding impacts to downstream properties are included in the budget allocated to the Local Impact Mitigation Fund, as described above in Section 2.3, so are not included here.



3.6.9 Public Health and Safety Measures

The estimate includes costs for cattle exclusion fencing at reservoir sites where the former reservoirs will no longer be able to serve as a natural barrier to livestock, and for the protection of revegetation efforts against damage. Fencing will likely be four-wire fence with metal T-posts at 12 LF intervals.

Fencing quantities have been determined from a detailed analysis of fencing lengths in GIS, focused on fencing the reservoir restoration areas while avoiding fencing along portions of the perimeter with steep topography above the reservoir, forest and housing. As the scope is developed further, additional definition may be obtained by considering where fences might need to tie into property boundary fences (if they exist) or where steep topography just below the reservoir surface might act as a barrier.

3.6.10 Fire Management Plan

The Fire Management Plan is currently being developed through close coordination with the various agencies listed below in Table 3-12.

Table 3-12 Fire Protection Agencies

Agency Name	Federal/State/Local	Jurisdiction
USDA Forest Service	Federal	National Forests, federally managed land
Bureau of Land Management	Federal	BLM lands, federally managed land
Cal Fire	State of California	State Resource Lands, California
Oregon Department of Forestry	State of Oregon	State Resource Lands, Oregon, BLM land in Klamath River Canyon
Klamath County Fire District	Local, County of Klamath	Unincorporated County Lands and the City of Klamath Falls
Colestin Rural Fire District	Local, County of Jackson	County Fire District in Jackson County, Oregon
Siskiyou County Fire Protection Districts: Copco Lake, Hornbrook, Montague, South Yreka, Tulelake, Etna, Ft. Jones, Weed	Local, County	Unincorporated County Lands throughout Siskiyou County, California
Mount Shasta Fire Department	Local, City of Mount Shasta	Mt. Shasta Municipal Boundaries
Yreka Fire Department	Local, City of Yreka	City of Yreka Municipal Boundaries

Kiewit will designate the Safety Officer, who will be available and on-call 24 hours a day, 7 days a week in the event of a fire. The Safety Officer will be the primary on-site communication linkage to ODF and Cal Fire foresters and will be responsible for managing all on-site fire prevention and suppression documentation, including the contact information of local emergency services, such as local fire departments and hospitals. The Safety Officer will be responsible for instructing other workers in the required fire prevention and suppression measures, including the use of fire suppression equipment and the protocols in the event of a



fire, and for communicating current fire hazards and any changes in prevention and suppression methods on a daily basis.

Proposed management resources that were accounted for in the estimate herein include the following:

- Monitored Detection System (MDS): The MDS is a powerful tool for rapidly detecting and locating wildfires. MDS cameras are proposed to be added to existing fire lookouts on Paradise Craggy, CA and Parker Mountain, OR and a MDS monitoring center at the CFSU headquarters in Yreka.
- Chipper: A chipper-dump bed trailer combo and a truck to haul it, previously owned and maintained by CFSU could provide frequent and consistent assistance with defensible space to the local community.
- Pressurized Hydrant System: The water supply for the existing pressurized hydrant system at Copco Lake is maintained by Copco dams. The system would be retrofitted to function without the dams.
- Boat Launches: These are accounted for in the proposed recreation features discussed above.
- Tactical Water Tenders: An opportunity to improve local department first response effectiveness is the addition of tactical water tenders, which have the capability to pump and store water, then transport it to rugged and remote areas in the rural Basin.
- Aerial River Access Points: In-channel locations that meet the requirements for helicopter drafting, will need to be developed and maintained in the former reservoirs specifically for fire suppression following the removal of the dams.

3.6.11 Spawning Gravel Implementation

To mitigate impacts to aquatic resource spawning habitat, approximately \$4 million in gravel augmentation will be completed at appropriate locations along the Klamath River. The actual amount necessary is likely less and will be based on surveys completed after drawdown.

Anticipated Mitigation Measures 3.7

The following sections summarize cost assumptions associated with anticipated regulatory mitigation measures for groundwater wells, downstream water intakes and cultural resources.

3.7.1 **Groundwater Analysis**

Groundwater well improvements adjacent to the reservoirs may be necessary if reservoir drawdown has a negative impact on existing well water levels. Costs associated with groundwater improvements are covered within the proposed Local Impact Mitigation Fund, as summarized in Section 2.3, so improvement costs are



not accounted for here. However, analysis to support a better understanding of likely impacts is currently underway and is the basis for this estimate.

The current estimates assume public outreach will be completed with relevant property owners, and subsequent installation and monitoring of up to five (5) new 60-foot deep, 3-inch diameter monitoring wells will be completed. Well drilling costs assume PVC casing and hard rock geology. Wells will be monitored monthly for water level and water quality constituents over a 3-year period.

3.7.2 Downstream Water Supply

Sediment buildup during reservoir drawdown may affect some downstream water supply intakes. The KRRC will excavate affected intakes as needed, to clear them of aggraded sediment materials, and provide temporary settling basins or groundwater wells if potable water supply is impacted. Jetting and vacuum technologies such as those used for cleaning storm drains and sewers will be used to remove sediment at intakes. Temporary settling basins may also be used to remove silt and sediment prior to the primary treatment performed by the water right holder. Table 3-13 summarizes the elements included in the estimate of Project Costs for downstream water supply.

There are approximately 50 water diversions off the Klamath River that could be affected. The United States Bureau of Reclamation (USBR) believed between 7 and 18 intakes would require maintenance. As some intakes have been added after the 2012 EIS/R, this estimate is based on the higher end of the range of the most probable number of intakes that could require maintenance actions.

In some cases, where diversions are used primarily for irrigation, the KRRC may need to pay for lost or damaged crops. Water rights holders reported alfalfa and pasture as the majority crop types irrigated with the diverted water during the drawdown period. In 2012, the average return for alfalfa produced in Siskiyou County was approximately \$1,200 per acre, where the average yield was approximately 6 tons per acre (UCCE 2012). Assuming all 129 acres will be affected, the cost will be approximately \$154,800.

Supplying livestock with water requires providing a stock water tank and water. A 500-gallon stock water tank is included in the estimate.

Table 3-13 Assumptions For Downstream Water Supply

Cost Level	Elements Included in Cost Estimate
Most Probable Estimate (MPE)	Intake excavation for 18 intakes Water supply for domestic use for 8 water rights (claimed or registered rights with reported diversions) Temporary settling basins at 18 intakes Temporary groundwater wells at 18 intakes
Direct Crop Loss Mitigation	Payment for lost hay crops on 129 acres of irrigated lands.
Stock watering	Provide 500-gallon water tank and 1,500 gallons of water per month.

References:



- UCCE (University of California Cooperative Extension). 2012. Sample Costs to Establish and Produce Alfalfa Hay Intermountain Siskiyou County, Scott Valley- Mixed Irrigation. Accessed February 27, 2018. Available at: https://coststudyfiles.ucdavis.edu/uploads/cs_public/a6/b3/a6b35d9d-bd82-495c-86b1-1987dd6154ae/alfalfa_im_scott2012.pdf
- County Road 67 Sediment Trap Maintenance Pilot Project 2013-2014, Douglas County CO. CH2M, Denver CO. Available at: http://www.vactor.com/Portals/O/PDF/hxx/HXX_Brochure_WEB_11.16.pdf
- League of Oregon Cities and the Community Planning Workshop at the University of Oregon. Water, Wastewater and Stormwater Rate Survey. March 2015.
- Raftelis Financial Consultants, Inc. and California-Nevada Section of the American Water Works Association. 2015 California-Nevada Water and Wastewater Rate Survey.

3.7.3 Cultural Resources

Cultural resources mitigation and protective measures may be required during drawdown, throughout the dam removal and reservoir restoration durations, and post-construction. Activities will likely involve shortand long-term cultural site monitoring, inadvertent discovery of cultural resources, among others. Additional information about the potential scope of activities is available in Appendix L of the Definite Plan.

Site monitoring and resolution of inadvertent discoveries of cultural resources and human remains will follow protocols established during agency and tribal consultations, as documented in the Historic, Cultural, and Tribal Resources Management Plan discussed in Appendix L of the Definite Plan, as well as actions developed and approved during consultations under Section 106 and agreed to during consultations with California-recognized tribes.

The cultural resource mitigation and protective measures estimate is based on the following assumptions associated with agency and tribal outreach, drawdown and post-drawdown surveys/inspections, curation fees, discovery contingencies and associated protection and mitigation measures.

Agency and Tribal Outreach

During the two-year construction period starting with reservoir drawdown, management of cultural resources and associated mitigation will require ongoing agency and tribal outreach, consultation, and meeting attendance.

Post-construction, long-term cultural resources management and monitoring activities are estimated for a 3year period, and based on the Historic, Cultural, and Tribal Resources Management Plan.

Drawdown Surveys

Archaeological and cultural inventories are planned for the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate reservoir zones during (1) the course of drawdown activities, and (2) post-drawdown reservoir areas as soon as surface conditions permit. Cost assumptions associated with each are listed below:



- Drawdown Shoreline Survey: To the extent possible, and in consideration of safety factors, periodic pedestrian archaeological inventory will be conducted along the reservoir shorelines as drawdown occurs. The principal goal of this shoreline survey is to identify and reduce looting and disturbances of known and currently unknown cultural resources. Inventory methods for this shoreline survey are still under development but may include low-elevation aerial surveys (e.g., drones, helicopter) or barge surveys, if feasible, that target areas subject to slumping or those that are not sufficiently dried to allow safe access via foot-traffic and survey vehicles. Three 2-person teams consisting of one archaeologist and one tribal monitor will conduct the shoreline inventory at each reservoir (J.C. Boyle, Copco No.1 and 2, and Iron Gate). The estimate allows for weekly reconnaissance for six people for a 2-month period before the post-drawdown pedestrian inventory of the reservoir areas can begin.
- Post-drawdown Reservoir Survey: Archaeological inventory will be conducted of the post-drawdown reservoir areas after water has receded and soils have sufficiently dried to allow for pedestrian survey. Based on current estimates, the former reservoir footprints encompass a total of 2,275 acres. Archaeological pedestrian inventory will focus on reservoir areas covered by 0-4 feet of sediment, where water-induced erosion has the greatest potential to reveal buried archaeological deposits. The 0-4-foot sediment area is estimated as encompassing about 1,500 acres. Selected deep probing may be used in areas of high archaeological sensitivity that exceed sediment depth of 4 feet. Using a standard rate of 25 acres per person per day, the 1,500-acre survey will require approximately 60 person/days to complete. Assuming an average of one site per every 50 acres inventoried, 30 archaeological sites would require recordation, which in turn will require an additional 60 person/days of effort.

Construction Surveys

Construction cultural resource monitoring is associated with implementation of the reservoir restoration plan during 2022 and 2023. The restoration plan involves removal of some portion of the remaining reservoir sediments to re-expose some high value pre-inundation river terraces. The Klamath River corridor and its associated terraces are areas of high archaeological and tribal resource sensitivity, and any subsurface disturbances associated with exposing the pre-inundation landscape (within approx. 5 vertical feet) will minimally require cultural resources monitoring.

Two teams comprised of archaeologists and tribal monitors will participate during any reservoir restoration actions. The estimate allows for monitoring for four people for a period of one year (FY 2022-2023). If cultural resources are inadvertently discovered during the restoration area monitoring activity, their recordation and evaluation will continue under Discovery Contingencies (see below).

Post-Construction Surveys

Post-construction cultural resources management and monitoring reflects compliance with mitigation of tribal cultural impacts. It will be developed in the Historic, Cultural and Tribal Resources Management Plan and will require ongoing consultation with affected tribes, including meetings to identify site-specific



mitigation as new sites are exposed or discovered. Requirements include needs for additional survey; development and implementation of a Looting and Vandalism Protection Program (LVPP), including long-term monitoring and site documentation; tribal issue facilitation; and long-term assistance with implementation of the Programmatic Agreement. These requirements are expected to include efforts beyond those covered under more routine agency and tribal consultation.

The LVPP provisions for archaeological and tribal monitoring are estimated to occur for a maximum of 3 years following completion of ground disturbance activities. Monitoring frequency is currently estimated at quarterly. The estimate for LVPP monitoring allows for two, 2-person crews, comprised of one archaeologist and one tribal monitor, for a 2-week period every quarter, for a total of 12 quarters. Additional non-field related costs are included for ongoing agency and tribal consultation and meetings.

Curation Fees

Curation fees have been included in the estimate for artifacts recovered during phase II and phase III fieldwork. As currently estimated, archaeological investigations involve excavation of 120 m³ for phase III efforts and 200 m³ for phase III efforts, for a total of 320 m³. The estimate allows for permanent curation of archaeological materials recovered during the phase II and phase III programs as 1 archive box per 2 m³ of excavated sediment, for 160 archive boxes. An additional 250 boxes may be required for discovery contingencies, for an estimated project total of 410 boxes. At an average of \$500/ft³ (2018 price quote from Oregon Museum of Natural and Cultural History), the curation of 410 archive boxes of cultural materials is estimated at \$205,000 excluding escalation. Curation support labor for final artifact and paperwork preparation is estimated at an average of 4 hours per archive box.

Inadvertent Discovery Contingencies

Two types of inadvertent discovery contingencies are anticipated during project implementation, including unanticipated exposure of archaeological resources and human remains. For purposes of this cost estimate, it is assumed that up to 160 discoveries (60 archaeological materials and 100 human remains) may occur in both short-term and long-term contexts. Additional information is provided below:

Archaeological Resources: It is anticipated that up to 30 new archaeological resources may be discovered during inventory of the former reservoir areas. Stabilization and/or recovery work (excavation) may be required at the anticipated sites to reduce project-related effects, particularly those related to erosion. In addition, ground disturbances associated with the reservoir restoration actions may expose archaeological components when reservoir sediments are removed, and the preinundation landscape is exposed. The estimate allows for discovery, stabilization, and/or recovery work of up to an additional 30 new archaeological resources associated with restoration actions. The estimate allows a per unit rate of \$30,000 per resource for stabilization and/or recovery work for each of the 60 newly identified archaeological resources, to include recordation, archaeological excavation, analysis, and reporting.



Human Remains: Drawdown, dam removal, and post-dam removal activities have the potential to
expose human burials within the former reservoir areas, as well as in downriver contexts where
elevated water levels and subsequent bank erosion may occur. The estimate allows a per resource
rate of \$15,000 for recovery of 100 human remain locations. Discovery, removal, and/or relocation
of human remains will require investigation and recovery by a 4-person team, comprised of one field
supervisor (archaeologist or physical anthropologist), two archaeological technicians, and one tribal
monitor for a period of two days in the field. Archaeological materials recovered from discovery
situations will require reporting, analysis and curation.

Traditional Cultural Properties Reserve Fund

Current agency and tribal consultation efforts have not yet addressed issues related to mitigation of impacts to Traditional Cultural Properties (TCPs). Therefore, a conservative reserve fund of \$1,000,000 has been estimated for this possibility.

3.8 Monitoring & Reporting

3.8.1 Aquatic Resource Measures

Measures to benefit aquatic resources (AR) have been developed through coordination with state and federal regulatory agencies and have been incorporated into the Project. Aquatic resource activities will take place prior to, during, and after dam removal and are based on Appendix I of the Definite Plan. Costs associated with implementation of ARs (during and post-construction) will be covered by the Specialty Corporate Indemnitor as described in Section 2.3, so are not included here. Baseline field studies to inform the ARs are included, most of which align with previously completed work (actuals).

3.8.2 Terrestrial Resource Measures

Measures to benefit terrestrial resources (TER) have been developed through coordination with state and federal regulatory agencies and have been incorporated into the Project. Terrestrial resource activities will take place prior to, during, and after dam removal and are based on Appendix J of the Definite Plan. Costs associated with implementation of TERs (during and post-construction) will be covered by the Specialty Corporate Indemnitor as described in Section 2.3, so are not included here. Baseline surveys completed to date (actuals) and pre-construction surveys for nesting birds, eagles, and Western Pond Turtle (WPT), as well as bat mitigation features are included in this estimate.

3.8.3 Water Quality Monitoring

Water quality monitoring was estimated to include monitoring at up to ten main stem stations along the Klamath River. Eight of these are existing United States Geological Survey (USGS) stations, while two will be new stations. Existing stations have been upgraded with equipment to meet the project objectives, and associated costs are included herein.



All sites were equipped with a multi-parameter sonde to measure temperature, pH, dissolved oxygen, specific conductance and turbidity. In addition, all sites except Keno were equipped with a high-range turbidity sensor and side-looking acoustic profiler (for acoustic attenuation and backscatter measurements). A TSS and NTU laboratory relationship study was conducted using sediment samples collected from the reservoirs.

Analysis and reporting of data will be according to USGS guidelines. The primary final products of the monitoring network will be 15-minute time series of stage, discharge, temperature, pH, dissolved oxygen, specific conductance, turbidity, acoustic attenuation, acoustic backscatter, and suspended-sediment concentration (SSC, potentially discriminating between silt/clay and sand), and suspended-sediment flux.

This estimate includes monitoring completed prior to the start of construction. Rates and prices are based on a USGS proposal submitted in March 2018. Water quality monitoring and reporting during and post construction will be covered by the Specialty Corporate Indemnitor as described in Section 2.3, so are not included here.

Chapter 4: Results



4. RESULTS

The following sections provide a summary of the results of the cost analyses described above. Detailed construction cost breakdowns for both Full Removal and Partial Removal alternatives are provided in Attachment A. Pay item cost detail worksheets, describing the calculation of individual cost estimate line items rates and prices are provided in Attachment B.

In addition to the estimated project cost results, a full range of results from the Monte Carlo analysis are provided in Section 4.2.

4.1 Total Cost Summary

Table 4-1 provides a summary of the estimate of project costs for Full and Partial Removal alternatives, respectively. As described in Section 4.2 below, a P80 risk contingency has been included in the estimates. As the detailed design advances toward final construction drawings and specifications, the pre-GMP portion of the contingency will decrease to near zero. While the post-GMP contingency may decrease as more field data and information becomes available, some level of construction contingency will persist throughout the construction phase.

Based on the Full Removal project estimate summarized below, the Project has adequate funding to implement all Project activities, with an approximately \$16.4M reserve (difference between \$450M funding ceiling and implementation estimate). The estimate includes over \$62.7M in risk contingency, as well as accounting for liability transfer and specialty insurance, both of which are beyond what is typically required or needed for successful project approval and implementation. The liability transfer and insurance, as well as the current reserve funds, will better protect all parties against possible cost overruns related to uncontrollable circumstances and other risks.

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 Table 4-1
 Results Summary - Full and Partial Removal

		Estimate of Project Costs			
Line Item / Cost Category		(Year of Construction Dollars)			
		Full Removal	Partial Removal		
Droid	ect Oversight (non PDB)	40,718,000	40,718,000		
10	Project Oversight	38,799,000	38,799,000		
11	Corporate Insurance	1,919,000	1,919,000		
	ility Transfer	35,530,000	35,530,000		
15	Liability Transfer	35,530,000	35,530,000		
	ronmental Compliance (KRRC-Managed)	8,097,000	8,097,000		
	Permit Acquisition, CEQA/NEPA Support,				
20	Compliance QA During Construction	8,097,000	8,097,000		
Tech	nnical Support	14,220,000	14,220,000		
30	Preliminary Engineering (Technical Representative)	9,225,000	9,225,000		
31	Vegetation Test Plots, Seed Collection, Seed Prop.	1,896,000	1,896,000		
32	Construction Procurement	1,096,000	1,096,000		
33	Owner's Representative (Design Oversight)	2,003,000	2,003,000		
Con	struction Management	13,167,000	13,167,000		
34	Construction Management	13,167,000	13,167,000		
Prog	ressive Design-Build Contract	237,612,000	219,150,000		
40	Final Design & Permitting Support (PDB)	21,799,000	21,799,000		
40A	Project Insurance	6,989,000	6,989,000		
41	Dam Removals	97,751,000	79,289,000		
42	Reservoir Area Improvements	21,779,000	21,779,000		
43	Reservoir Area Restoration	32,821,000	32,821,000		
44	Yreka Water Line Replacement	6,060,000	6,060,000		
45	Transportation Improvements	32,717,000	32,717,000		
46	Recreation Improvements	6,481,000	6,481,000		
48	Public Health And Safety Fencing	2,665,000	2,665,000		
49	Fire Management Plan	3,006,000	3,006,000		
49A	Spawning Gravel Augmentation	5,544,000	5,544,000		
Mitig	gation Measures	17,141,000	17,141,000		
51	Groundwater Analysis	391,000	391,000		
52	Downstream Water Supply/Rights	1,135,000	1,135,000		
53	Cultural Resources	15,615,000	15,615,000		
Mon	itoring & Reporting (KRRC)	4,406,000	4,406,000		
61	Aquatic Resource Measures	288,000	288,000		
62	Terrestrial Resources Measures	3,305,000	3,305,000		
63	Baseline Water Quality Monitoring	813,000	813,000		
	Subtotal	370,891,000	352,429,000		
Con	tingency (P80)	62,757,000	58,621,000		
E	Estimate Uncertainty	9,474,000	8,687,000		
F	Pre-GMP Contingency	18,208,000	17,209,000		
F	Post GMP Contingency	35,075,000	32,725,000		
	TOTAL	433,648,000	411,050,000		

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4.2 Quantitative Risk Assessment Results

The QRA results show that the total project cost for Full Removal may range from \$401 million to \$452 million (see Table 4-2). At an 80% confidence level, the total project cost for Full Removal is approximately \$434 million, leaving approximately \$16M in cash reserve (up to funding limit). Given these calculations, there is over 95% probability of the current funding limit (\$450M) being maintained, as shown in Figure 4-1.

Table 4-2 QRA Results Summary (Full Removal)

	Risk Assessment				
	Optimistic ^[1]	80% C.L.	90% C.L.	95% C.L.	Pessimistic ^[2]
Project Implementation Cost	\$370,891,000	\$370,891,000	\$370,891,000	\$370,891,000	\$370,891,000
Contingency					
Pre-GMP Risk Contingency	\$6,093,000	\$18,208,000	\$19,435,000	\$21,378,000	\$24,020,000
Estimate Uncertainty	\$8,260,000	\$9,474,000	\$10,134,000	\$10,214,000	\$10,318,000
Post-GMP Risk Contingency	\$15,367,000	\$35,075,000	\$37,494,000	\$39,794,000	\$47,116,000
Total	\$400,611,000	\$433,648,000	\$437,954,000	\$442,277,000	\$452,345,000

^{[1] 1%} Confidence Level

^[2] 99% Confidence Level

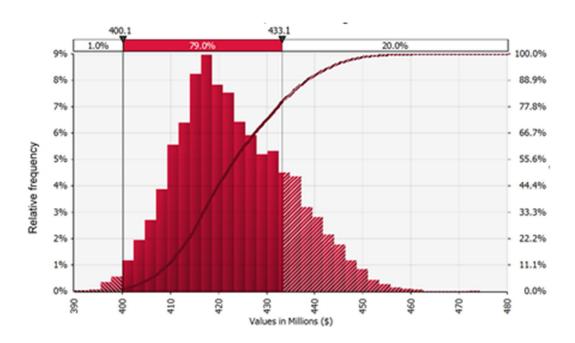


Figure 4-1 Relative Frequency of Total Project Cost (Full Removal)

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Further breakdown on the QRA results for the optimistic, P80 and pessimistic scenarios are shown in Table 4-3 below.

Table 4-3 QRA Results Breakdown (Full Removal)

	Risk Assessment			
	Optimistic ^[1]	80% C.L.	Pessimistic ^[2]	
Project Implementation Cost	\$370,891,000	\$370,891,000	\$370,891,000	
Contingency				
Cost Estimate Uncertainty	\$8,260,000	\$9,474,000	\$10,318,000	
Progressive Design Build	\$5,712,000	\$5,850,000	\$6,288,000	
Soft Costs	\$208,000	\$1,912,000	\$2,247,000	
Mitigations & Monitoring	\$2,340,000	\$1,656,000	\$1,703,000	
Insurance	-	\$56,000	\$80,000	
Risk Register	\$13,356,000	\$20,329,000	\$26,750,000	
Pre-GMP Contingency	\$6,093,000	\$7,601,000	\$10,133,000	
Post-GMP Contingency	\$7,263,000	\$12,728,000	\$16,617,000	
Cost of Schedule Delay	\$8,103,000	\$32,955,000	\$44,386,000	
Escalation - Start of Construction	-	\$10,607,000	\$13,887,000	
Impact Cost - PDB	\$4,244,000	\$14,589,000	\$19,934,000	
Impact Cost - Soft Cost	\$3,859,000	\$7,759,000	\$10,565,000	
Total	\$400,611,000	\$433,648,000	\$452,345,000	

^{[1] 1%} Confidence Level

Impacts to schedule are also quantified as part of the QRA and are utilized in determination of schedule related costs increases associated with certain risks. Table 4-4 below summarizes schedule impacts for the optimistic, P50, P80 and pessimistic scenarios from the QRA.

Table 4-4 QRA Schedule Results Summary (Full Removal)

	Risk Assessment - Schedule			
	Optimistic ^[1]	50% C.L.	80% C.L.	Pessimistic ^[2]
FERC Surrender Order Date	Sep-20	Jan-21	Feb-22	Aug-22
Construction Start Date	Apr-21	Jul-21	Jul-22	Feb-23
Construction Substantial Completion	Feb-23	Apr-24	Mar-25	Mar-26

^{[1] 1%} Confidence Level

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^{[2] 99%} Confidence Level

^[2] 99% Confidence Level



A similar assessment was completed for the Partial Removal alternative and the results are summarized in Table 4-5 below. For Partial Removal, there is over 99% probability of the current funding limit (\$450M) being maintained.

Table 4-5 QRA Results Summary (Partial Removal)

	Risk Assessment				
	Optimistic ^[1]	80% C.L.	90% C.L.	95% C.L.	Pessimistic ^[2]
Project Implementation Cost	\$352,429,000	\$352,429,000	\$352,429,000	\$352,429,000	\$352,429,000
Contingency					
Pre-GMP Risk Contingency	\$6,969,000	\$17,209,000	\$19,391,000	\$21,022,000	\$23,151,000
Estimate Uncertainty	\$5,755,000	\$8,687,000	\$9,520,000	\$9,990,000	\$10,005,000
Post-GMP Risk Contingency	\$15,487,000	\$32,725,000	\$35,986,000	\$37,876,000	\$43,379,000
Total	\$380,640,000	\$411,050,000	\$417,326,000	\$421,317,000	\$428,964,000

^{[1] 1%} Confidence Level

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^[2] 99% Confidence Level

Chapter 5: References



5. REFERENCES

Aon, 2019. Risk and Insurance Due Diligence Report, Klamath River Renewal Project, July 2019.

KRRC 2018. Definite Plan for the Lower Klamath Project, Klamath River Renewal Corporation, June 2018.

KRRC 2019. Amended Appendix A - Risk Management Plan, to the Definite Plan for the Lower Klamath Project, Klamath River Renewal Corporation, July 2019.

UCCE 2012. University of California Cooperative Extension – Sample Costs to Establish and Produce Alfalfa Hay, Intermountain – Siskiyou County.

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Attachment A Cost Estimate

FULL REMOVAL ESTIMATE

st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	uly 2019 Escalated
t		Heading	Description	Qtv	Unit	(\$) Rate	(a) Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	(a) Estimate	YOC Estimate
	Sneet	Heading	Description	Qiy	Ullit	Rate	Dilect Cost	INIO DY SUD	FDB OH&F	Dullus	Overneau	Estillate	TOC Estillate
		DDO IFOTOVEDOIOUT											
		PROJECTOVERSIGHT											
		Project Oversight											
		Compensation & Benefits		4.00		0.070.055	0.070.055					0.070.055	
)	-	Compensation & Benefits		1.00	EA	8,873,655	8,873,655	-	-	-	-	8,873,655	8,873,655
		Travel and Meetings											
)	-	Travel and Meetings		1.00	EA	605,830	605,830	-	-	-	-	605,830	605,830
		Professional Services											
)	-	CEA Services & Expenses	CEA Services & Expenses	1.00	EA	4,181,956	4,181,956	-	-	-	-	4,181,956	4,181,956
)	-	Legal Services	General Counsel	1.00	EA	4,593,668	4,593,668	-	-	-	-	4,593,668	4,593,668
)	-	Legal Services	Construction Counsel	1.00	EA	3,580,824	3,580,824	-	-	-	-	3,580,824	3,580,824
)		Legal Services	Regulatory Counsel (inc. Perkins Coie)	1.00	EA	2,590,000	2,590,000	-		-	-	2,590,000	2,590,000
)	-	Legal Services	Corporate-Transaction Counsel	1.00	EA	750,000	750,000		-			750,000	750,000
)	-	Board of Consultants	Board of Consultants	1.00	EA	1,740,000	1,740,000	-	-	-		1,740,000	1,740,000
				1.00	EA	1,740,000	1,740,000		-	-	-	1,723,000	1,723,000
)	-	Land Survey/Title Work	Land Survey/Title Work										
)	-	Accounting and Audit Fees	Accounting and Audit Fees	1.00	EA	524,395	524,395	-	-	-	-	524,395	524,395
)	-	Risk Management Services	Risk Management Services	1.00	EA	662,000	662,000	-	-	-	-	662,000	662,000
)	-	Communications External Services	Communications External Services	1.00	EA	426,000	426,000	-	-	-	-	426,000	426,000
)	-	Other Professional Fees	Yurok Wildlife Program Retirement Plan Svcs RLF TransTec etc. (N	1.00	EA	1,401,000	1,401,000	-	-	-	-	1,401,000	1,401,000
		Admin, IT, Fees											
)	-	Admin, IT, Fees	Admin, IT, Fees	1.00	EA	1,278,840	1,278,840	-	-	-	-	1,278,840	1,278,840
		Owner's Technical Representative (excluding Permitting, Design Re											
1		Project Management (1.1, 1.3-1.5)	AECOM FY17/18 Planning	1.00	YR	923,136	923.136				-	923.136	923.136
_				1.00	YR	811.067	811.067	_	-	-	-	811.067	811.067
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY18/19 Planning	1.00	YR		. ,	-	-		-	850,000	. ,
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY19/20 Prelim Services			850,000	850,000	-		-			850,000
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	690,000	690,000	-	-	-	-	690,000	690,000
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY21/22 Dam Mods / Dam Removal	1.00	YR	520,000	520,000	-	-	-	-	520,000	520,000
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY22/23 Dam Removal & Restoration	1.00	YR	540,000	540,000	-	-	-	-	540,000	540,000
)	-	Project Management (1.1, 1.3-1.5)	AECOM FY23/24+ Post Construction	1.00	YR	280,000	280,000	-	-	-	-	280,000	280,000
		Owner's Technical Representative (Outreach only)											
)		Outreach (1.2)	AECOM FY17/18 Planning	1.00	YR	696,604	696,604	-	-	-	-	696,604	696,604
)		Outreach (1.2)	AECOM FY18/19 Planning	1.00	YR	226,115	226,115	-		-	-	226,115	226,115
_			· · · · · · · · · · · · · · · · · · ·	1.00	YR	71,324	71,324	_			-	71,324	71,324
)		Outreach (1.2)	AECOM FY19/20 Prelim Services	1.00	YR		62,114		-	-	-	62,114	62,114
)	-	Outreach (1.2)	AECOM FY20/21 Prelim Services / Dam Mods			62,114		-	-	-			
)	-	Outreach (1.2)	AECOM FY21/22 Dam Mods / Dam Removal	1.00	YR	63,977	63,977	-	-	-	-	63,977	63,977
)	-	Outreach (1.2)	AECOM FY22/23 Dam Removal & Restoration	1.00	YR	65,897	65,897	-	-	-	-	65,897	65,897
)	-	Outreach (1.2)	AECOM FY23/24+ Post Construction	1.00	YR	67,873	67,873	-	-	-	-	67,873	67,873
		Insurances (KRRC)											
1	-	Corporate Insurance	Corporate Insurance	1.00	EA	719,007	719,007	-	-	-	-	719,007	719,007
1		Contractor's Pollution Liability / Pollution Legal Liability	Contractor's Pollution Liability / Pollution Legal Liability	1.00	EA	1,200,000	1,200,000	-	-	-	-	1,200,000	1,200,000
		Libaility Transfer	Contactor of Challen Elability / Fortalion Eogal Elability	1.00	LS	35,530,000	35,530,000	-			-	35,530,000	35,530,000
		ENVIRONMENTAL COMPLIANCE (KRRC MANAGED)		1.00		00,000,000	00,000,000					00,000,000	00,000,000
		Permit Acquisition, CEQA/NEPA Support, Compliance QA During											
			\										
		KRRC Agency Fees and Reimbursements											
)	-	Army Corps of Engineers	Generally, no charge.	1.00	EA	-	-	-	-	-	-	-	-
)	-	California State Water Resources Control Board (SWRCB)	401 Certification	1.00	EA	174,000	174,000	-	-	-	-	174,000	174,000
)	-	California State Water Resources Control Board (SWRCB)	Still Water Sciences	1.00	EA	3,203,228	3,203,228	-	-	-	-	3,203,228	3,203,228
)	-	California State Water Resources Control Board (SWRCB)	NPDES Stormwater Program	1.00	EA	4,852	4,852	-	-	-	-	4,852	4,852
)	-	California Dept of Fish and Wildlife (CDFW) Permit Reviews	Streambed alteration agreement	1.00	EA	19,126	19,126	-	-	-	-	19,126	19,126
)	-	California Dept of Fish and Wildlife (CDFW) Permit Reviews	California Endangered Species Act (CESA)	1.00	EA	31,963	31,963	-	-	-	-	31,963	31,963
)	-	Division of Safety of Dams (DSOD) Filing Fees	Filing Fees	1.00	EA	426,000	426,000	-	-	-	-	426,000	426,000
)			National Environmental Policy Act (NEPA)	1.00	EA	-	-		-		-	- 420,000	.23,000
		Federal Energy Regulatory Commission (FERC)		1.00	EA	130,000	130,000		-	-	-	130,000	130,000
)	-	Oregon Dept Environmental Quality (ODEQ)	Generally										
)	-	Oregon Dept Environmental Quality (ODEQ)	NPDES Stormwater Program	1.00	EA	2,130	2,130	-	-	-	-	2,130	2,130
)	-	Oregon Dept State Lands (ODSL)	Permit	1.00	EA	1,292	1,292	-	-	-	-	1,292	1,292
		Owner's Technical Representative (Permitting)											
)	-	Permitting (4.1, 4.3-4.5)	AECOM FY17/18 Planning	1.00	YR	961,316	961,316	-	-	-	-	961,316	961,316
)	-	Permitting (4.1, 4.3-4.5)	AECOM FY18/19 Planning	1.00	YR	1,114,541	1,114,541	-	-	-	-	1,114,541	1,114,541
)	-	Permitting (4.1, 4.3-4.5)	AECOM FY19/20 Prelim Services	1.00	YR	728,267	728,267	-	-	-	-	728,267	728,267
)	-	Permitting (4.1, 4.3-4.5)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	310,000	310,000	-	-	-	-	310,000	310,000
)		Permitting (4.1, 4.3-4.5)	AECOM FY21/22 Dam Mods / Dam Removal	1.00	YR	320,000	320,000	-	-	-	-	320,000	320,000
)		Permitting (4.1, 4.3-4.5)	AECOM FY22/23 Dam Removal & Restoration	1.00	YR	330,000	330,000		-	-	-	330,000	330,000
)				1.00	YR	340,000	340,000	-	-	-	-	340,000	340,000
,	-	Permitting (4.1, 4.3-4.5)	AECOM FY23/24+ Post Construction	1.00	I IX	340,000	340,000		_			340,000	340,000
		TECHNICAL SUPPORT Preliminary Engineering (Technical Representative)											

		Cost Estimate - Full Removal											luly 2019
Est	Cost				l	(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
30	-	Technical Preparation (2.1-2.4, 2.7, 2.8, 3.1-3.7)	AECOM FY17/18 Planning	1.00	YR	3,956,821	3,956,821	-	-	-	-	3,956,821	3,956,821
30	-	Technical Preparation (2.1-2.4, 2.7, 2.8, 3.1-3.7)	AECOM FY18/19 Planning	1.00	YR	4,791,235	4,791,235	-	-	-	-	4,791,235	4,791,235
30	-	AECOM Yreka Water Line Design (3.3)	AECOM FY19/20 Prelim Services	1.00	YR	477,000	477,000	-	-	-	-	477,000	477,000
30	-	AECOM Hatchery Design (3.7)	AECOM FY19/20 Prelim Services - excluded from scope	1.00	YR	-	-	-	-	-	-	-	-
		Vegetation Test Plots, Seed Collection, Seed Propagation											
		Vegetation Test Plot											
31	-	Vegetation Test Plot (KRRC/Hanford)	Chain-link fence, 7 LF high	404	LF	65	26,260	-	-	-	-	26,260	26,260
31	-	Vegetation Test Plot (KRRC/Hanford)	Chain-link fence gate, 7LF high x 10LF long	1.00	EA	3,260	3,260	-	-	-	-	3,260	3,260
31	-	Vegetation Test Plot (KRRC/Hanford)	Bank Wetland planting beds	8.00	EA	2,000	16,000	-	-	-	-	16,000	16,000
31	-	Vegetation Test Plot (KRRC/Hanford)	Bank Riperian planting beds	8.00	EA	2,000	16,000	-	-	-	-	16,000	16,000
31	-	Vegetation Test Plot (KRRC/Hanford)	Floodplain Riperian planting beds	8.00	EA	2,000	16,000	-	-	-	-	16,000	16,000
31	-	Vegetation Test Plot (KRRC/Hanford)	Uplands planting beds	8.00	EA	2,400	19,200	-	-	-	-	19,200	19,200
31	-	Vegetation Test Plot (KRRC/Hanford)	Irrigation system	1.00	EA	39,880	39,880	-	-	-	-	39,880	39,880
31	-	Vegetation Test Plot (KRRC/Hanford)	Irrigation lines, including trench and backfill	1,000	LF	9	9,000		-	-	-	9,000	9,000
31	-	Vegetation Test Plot (KRRC/Hanford)	Planting bed irrigation lines and nozzles	32.00	EA	450	14,400	-	-		-	14,400	14,400
31	-	Vegetation Test Plot (KRRC/Hanford)	Pressure supply line	100	LF	25	2,500			-		2,500	2,500
31		Vegetation Test Plot (KRRC/Hanford)	Electrical Supply	1.00	EA	27.013	27.013		-	-		27.013	27.013
31		Vegetation Test Flot (KRRC/Hanford)	Equip to backfill planting beds	1.00	EA	7,520	7,520		-		-	7,520	7,520
31	-:-	Vegetation Test Plot (KRRC/Hanford)	Negotiated Cost Saving	1.00	EA	-7,487	(7,487)	-	-	-	-	(7,487)	(7,487)
				1.00	EA	100.000	100,000				-	100.000	100,000
31	-	Vegetation Test Plot (KRRC/Hanford)	Site restoration		YR	27,360	27,360		-	- :	-	27,360	28,454
31	-	Vegetation Test Plot	2019 Maintenance w/2-man crew, one 12-hr day ea. visit to 3 sites,	1.00									
31	-	Vegetation Test Plot	2020 Maintenance w/2-man crew, one 12-hr day ea. visit to 3 sites,	1.00	YR	27,360	27,360	-	-	-	-	27,360	29,593
		Native Seed Collection											
31	-	Native Seed Collection (KRRC/PCS)	2018 Seed collection, preparation, storage	117	LB	1,334	155,726	-	-	-	-	155,726	155,726
		Seed Propagation											
31	-	Seed Propagation (KRRC/BFI)	Phase 1 Scope 2019-2021	7,055	LB	75	529,569	-	-	-	-	529,569	529,569
31	-	Seed Propagation (KRRC/S&S)	Phase 1 Scope 2019-2021	1,462	LB	260	380,012	-	-	-	-	380,012	380,012
31	-	Seed Propagation (KRRC/BFI)	Phase 3 Scope 2019-2021	23,055	LB	21	483,127	-	-	-	-	483,127	483,127
		Construction Procurement											
32	-	Dam Removal Procurement (5.1-5.5)	AECOM FY17/18 Dam Removal Procurement	1.00	YR	54,057	54,057	-	-	-	-	54,057	54,057
32	-	Dam Removal Procurement (5.1-5.5)	AECOM FY18/19 Dam Removal Procurement	1.00	YR	644,386	644,386	-	-	-	-	644,386	644,386
32	-	Dam Removal Procurement (5.1-5.5)	AECOM FY19/20 Dam Removal Procurement	1.00	YR	297,874	297,874	-	-	-	-	297,874	297,874
32	-	Dam Removal Procurement (5.1-5.5)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	100,000	100,000		-	-	-	100,000	100,000
		Owner's Representative (Design Oversight)											
33	-	Design Reviews (6.1)	AECOM FY17/18 Planning	1.00	YR	-	-	-	-	-	-	-	-
33	-	Design Reviews (6.1)	AECOM FY18/19 Planning	1.00	YR	115,243	115,243			-	-	115,243	115,243
33		Design Reviews (6.1)	AECOM FY19/20 Prelim Services	1.00	YR	513,831	513,831	-		-	-	513,831	513,831
33	-	Design Reviews (6.1)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	260,000	260,000		-	-		260,000	260,000
33		PDB Management (6.2)	AECOM FY19/20 Prelim Services	1.00	YR	744,317	744,317		-	-	-	744,317	744,317
33				1.00	YR	370.000	370,000		-	-	-	370,000	370,000
34		PDB Management (6.2)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	145,000	145,000	-	-	-	-	145,000	145,000
34	-	Engineer of Record (Yreka Water Supply)	AECOM FY20/21 Prelim Services / Dam Mods	1.00	IK	145,000	145,000	-	-	-	-	145,000	145,000
		Construction Management		4.00	VD	0.040.070	2.342.278		_			0.040.070	0.040.070
34	-	Construction Management	AECOM FY20/21	1.00	YR	2,342,278	, , ,			- :	-	2,342,278	2,342,278
34	-	Construction Management	AECOM FY21/22	1.00	YR	5,914,390	5,914,390	-	-		-	5,914,390	5,914,390
34	-	Construction Management	AECOM FY22/23	1.00	YR	4,765,085	4,765,085	-	-	-	-	4,765,085	4,765,085
		PROGRESSIVE DESIGN-BUILD CONTRACT											
		Final Design & Permitting Support (PDB)											
		Engineering (PDB)											
40	-	Engineering (PDB)	Project Management	1.00	EA	3,830,881	3,830,881	-	-	-	-	3,830,881	3,830,881
40	-	Engineering (PDB)	Site & Conditions Verification	1.00	EA	1,859,749	1,859,749	-	-	-	-	1,859,749	1,859,749
40	-	Engineering (PDB)	Initial Cost Model and Schedule	1.00	EA	49,880	49,880	-	-	-	-	49,880	49,880
40	-	Engineering (PDB)	Design Criteria Report	1.00	EA	281,328	281,328	-	-	-	-	281,328	281,328
40	-	Engineering (PDB)	30% Design Completion Documents	1.00	EA	4,335,923	4,335,923	-	-		-	4,335,923	4,335,923
40	-	Engineering (PDB)	60% Design Completion Documents	1.00	EA	4,113,785	4,113,785	-	-	-	-	4,113,785	4,113,785
40	-	Engineering (PDB)	GMP Project Submittal	1.00	EA	168,080	168,080	-			-	168,080	168,080
+0 40		Engineering (PDB)	90% Design Completion Documents	1.00	EA	2,396,186	2,396,186	-	-	-		2,396,186	2,396,186
+0 40		Engineering (PDB)	Seed Collection & Propagation (included in 43 for now)	1.00	EA	2,030,100	_,_50,.00	-	-	-	-	_,100,100	_,500,.50
				1.00	EA	1,797,140	1,797,140		-	-	-	1,797,140	1,797,140
10	-	Engineering (PDB)	100% Design Completion Documents	1.00	EA	1,797,140	1,797,140	-	-	-	-	1,797,140	1,797,140
10	-	Engineering (PDB)	Allowance for extended project schedule	1.00	EA	1,915,441	1,910,441	-		-	-	1,915,441	1,915,441
		Permit Acquisition (PDB)	D 111 D 11 D	4.00	F.	1.051.000	1.051.000					1.051.000	1.051.000
10	-	Permit Acquisition (PDB)	Permitting Support and Compliance Program	1.00	EA	1,051,068	1,051,068	-	-	-	-	1,051,068	1,051,068
		CCIP Insurance				40000							
10A	-	Insurances (PDB)	Builder's risk	1.00	EA	488,750	488,750	-	-	-	-	488,750	488,750
0A	-	Insurances (PDB)	CCIP	1.00	EA	6,500,000	6,500,000	-	-	-	-	6,500,000	6,500,000

1 (1 (100	Jost Estimate - Full Remova	ll									J	uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
ID	Sheet	t Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
40A	-	Insurances (PDB)	Commercial Auto (corporate programs)	1.00	EA	-		-	-	-	-	-	-
40A	-	Insurances (PDB)	Professional liability (use of corporate policy)	1.00	EA				-		-		
40A		Insurances (PDB)	Watercraft and aircraft liability TBD	1.00	EA	-		-	-		-		_
40A				1.00	LA	-	-	-	-		-		-
		Field Overheads (to be distributed over the	following PDB Sections)		-								
		Copco 1 & 2											
NA	-	Copco 1 & 2	OH 01 Mobilization	1.00	LS	100,000	100,000	-	-	-	NA	100,000	-
NA	-	Copco 1 & 2	OH 02 Project Staff	1.00	LS	310,375	310,375	-	31,038	3,414	NA	344,827	-
NA	-	Copco 1 & 2	OH 03 Temporary Buildings	1.00	LS	173,000	173,000	-	-	1,730	NA	174,730	-
NA	-	Copco 1 & 2	OH 04 Temporary Utilities	1.00	LS	184,000	184,000		-	1,840	NA	185,840	
				1.00	LS	935,420	935,420	-		9,354	NA NA	944,774	_
NA		Copco 1 & 2	OH 05 Temporary Construction			333,420	333,420			3,334		344,774	_
NA	-	Copco 1 & 2	OH 06 Transportation	1.00	LS	-					NA		
NA	-	Copco 1 & 2	OH 07 Office Supplies	1.00	LS	16,500	16,500	-	-	165	NA	16,665	-
NA	-	Copco 1 & 2	OH 08 Safety Supplies	1.00	LS	107,773	107,773	-	-	1,078	NA	108,851	-
NA	-	Copco 1 & 2	OH 09 Employee Expense	1.00	LS	-	-	-	-	-	NA	-	-
NA		Copco 1 & 2	OH 10 Contract Services	1.00	LS	53,887	53,887	-	-	539	NA	54,425	-
NA		Copco 1 & 2	OH 11 Employee Living Cost	1.00	LS	600,000	600,000	-	60,000	6,600	NA	666,600	-
				1.00	LS	50,000	50,000		-	500	NA NA	50,500	-
NA	-	Copco 1 & 2	OH 12 Winter and Summer Protection										
NA	-	Copco 1 & 2	OH 13 Quality Assurance/ Quality Control	1.00	LS	50,000	50,000	-	5,000	550	NA	55,550	-
NA	-	Copco 1 & 2	OH 14 Lost Production/Overtime/Travel Time	1.00	LS	459,113	459,113	-	45,911	5,050	NA	510,075	-
NA	-	Copco 1 & 2	OH 16 Demobilization	1.00	LS	90,000	90,000	-	-	900	NA	90,900	-
NA	-	Copco 1 & 2	OH 18 Survey	1.00	LS	75,000	75,000	-	-	750	NA	75,750	-
NA		Copco 1 & 2	OH 21 Small Tools	1.00	LS	269,433	269,433	-	-	2,694	NA	272,127	-
				1.00	LS	200,272	200,272	-	-	2,003	NA NA	202,275	-
NA	-	Copco 1 & 2	OH 22 Traffic Control										
NA	-	Copco 1 & 2	OH 27 Project Equipment	1.00	LS	724,904	724,904	-	72,490	7,974	NA	805,368	-
NA	-	Copco 1 & 2	OH 28 Project Labor	1.00	LS	60,228	60,228	-	6,023	663	NA	66,913	-
NA	-	Copco 1 & 2	OH 99 Dead Rent	1.00	LS	640,117	640,117	-	64,012	7,041	NA	711,170	-
		Iron Gate											
NA		Iron Gate	OH 01 Mobilization	1.00	LS	300,000	300,000		-	3,000	NA	303,000	
NA		Iron Gate	OH 02 Project Staff	1.00	LS	2,463,153	2,463,153	-	246,315	27,095	NA	2,736,563	-
				1.00						9,700	NA NA		-
NA		Iron Gate	OH 03 Temporary Buildings		LS	970,000	970,000		-			979,700	
NA	-	Iron Gate	OH 04 Temporary Utilities	1.00	LS	354,500	354,500	-	-	3,545	NA	358,045	-
NA	-	Iron Gate	OH 05 Temporary Construction	1.00	LS	1,063,040	1,063,040	-	-	10,630	NA	1,073,670	-
NA	-	Iron Gate	OH 06 Transportation	1.00	LS	377,040	377,040	-	-	3,770	NA	380,810	-
NA	-	Iron Gate	OH 07 Office Supplies	1.00	LS	53,000	53,000	-	-	530	NA	53,530	-
NA		Iron Gate	OH 08 Safety Supplies	1.00	LS	69,721	69,721	-		697	NA	70,418	-
				1.00	LS	34,000	34,000		3,400	374	NA	37,774	-
NA	-	Iron Gate	OH 09 Employee Expense					-					
NA	-	Iron Gate	OH 10 Contract Services	1.00	LS	54,861	54,861		-	549	NA	55,410	
NA	-	Iron Gate	OH 11 Employee Living Cost	1.00	LS	600,000	600,000	-	60,000	6,600	NA	666,600	-
NA	-	Iron Gate	OH 12 Winter and Summer Protection	1.00	LS	50,000	50,000	-	-	500	NA	50,500	-
NA	-	Iron Gate	OH 13 Quality Assurance/ Quality Control	1.00	LS	220,000	220,000	-	22,000	2,420	NA	244,420	-
NA		Iron Gate	OH 14 Lost Production/Overtime/Travel Time	1.00	LS	297,011	297,011		29,701	3,267	NA	329,979	
NA		Iron Gate	OH 16 Demobilization	1.00	LS	270,000	270,000	-		2,700	NA.	272,700	_
						-7							
NA	-	Iron Gate	OH 18 Survey	1.00	LS	75,000	75,000			750	NA NA	75,750	-
NA	-	Iron Gate	OH 21 Small Tools	1.00	LS	174,303	174,303	-	-	1,743	NA	176,046	-
NA	-	Iron Gate	OH 22 Traffic Control	1.00	LS	608,656	608,656	-	-	6,087	NA	614,743	-
NA	-	Iron Gate	OH 27 Project Equipment	1.00	LS	1,697,004	1,697,004	-	169,700	18,667	NA	1,885,371	-
NA	-	Iron Gate	OH 28 Project Labor	1.00	LS	381,920	381,920	-	38,192	4,201	NA	424,313	-
NA	-	Iron Gate	OH 99 Dead Rent	1.00	LS	403,446	403,446		40,345	4,438	NA	448,229	-
. 47 (JC Boyle	Or too boad North			.00, . 10	.50,0		.0,0.0	.,		. 10,220	
			011041441777	1.00	10	250.000	250.000			0.500	N/O	252.500	
NA	-	JC Boyle	OH 01 Mobilization	1.00	LS	250,000	250,000	-	-	2,500	NA	252,500	-
NA	-	JC Boyle	OH 02 Project Staff	1.00	LS	1,297,328	1,297,328	-	129,733	14,271	NA	1,441,332	-
NA	-	JC Boyle	OH 03 Temporary Buildings	1.00	LS	634,000	634,000	-	-	6,340	NA	640,340	-
NA	-	JC Boyle	OH 04 Temporary Utilities	1.00	LS	230,900	230,900	-	-	2,309	NA	233,209	-
NA		JC Boyle	OH 05 Temporary Construction	1.00	LS	731,236	731,236	-		7,312	NA	738,548	-
NA		JC Boyle		1.00	LS	238,224	238,224		-	2,382	NA NA	240,606	-
			OH 06 Transportation	1.00	LS			-	-	338	NA NA		
NA	-	JC Boyle	OH 07 Office Supplies			33,800	33,800					34,138	
NA	-	JC Boyle	OH 08 Safety Supplies	1.00	LS	60,000	60,000	-	-	600	NA	60,600	-
NA	-	JC Boyle	OH 09 Employee Expense	1.00	LS	26,000	26,000	-	-	260	NA	26,260	-
NA	-	JC Boyle	OH 10 Contract Services	1.00	LS	42,000	42,000	-	-	420	NA	42,420	-
NA	-	JC Boyle	OH 11 Employee Living Cost	1.00	LS	360,000	360,000	-	36,000	3,960	NA	399,960	-
NA		JC Boyle		1.00	LS	50,000	50,000		-	500	NA.	50,500	-
	-		OH 12 Winter and Summer Protection										-
NA	-	JC Boyle	OH 13 Quality Assurance/ Quality Control	1.00	LS	161,600	161,600	-	16,160	1,778	NA	179,538	
		LC Poylo	OH 14 Lost Production/Overtime/Travel Time	1.00	LS	255,600	255,600	-	25,560	2,812	NA	283,972	-
NA	-	JC Boyle	Of 14 Lost 1 loade non/overame/ Travel 1 line	1.00	LS	225,000	225,000		-	2,250	NA	227,250	_

IXIXI	RC C	ost Estimate - Full Removal											uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
AV		JC Boyle	OH 18 Survey	1.00	LS	75,000	75,000	-	-	750	NA	75,750	-
AV		JC Boyle	OH 21 Small Tools	1.00	LS	150,000	150,000	-	-	1,500	NA	151,500	-
NΑ		JC Boyle	OH 22 Traffic Control	1.00	LS	319,825	319,825	-	-	3,198	NA	323,023	-
NΑ		JC Boyle	OH 27 Project Equipment	1.00	LS	939,094	939,094	-	93,909	10,330	NA	1,043,333	-
AV		JC Boyle	OH 28 Project Labor	1.00	LS	178,556	178,556	-	17,856	1,964	NA	198,376	-
NΑ		JC Boyle	OH 99 Dead Rent	1.00	LS	352,335	352,335	-	35,233	3,876	NA	391,444	-
		Bridges, Roads, Veg, Waterline											
NΑ		Bridges, Roads, Veg, Waterline	OH 01 Mobilization	1.00	LS	250,000	250,000	-	-	2,500	NA	252,500	-
AV		Bridges, Roads, Veg, Waterline	OH 02 Project Staff	1.00	LS	861,953	861,953	-	86,195	9,481	NA	957,630	-
AV		Bridges, Roads, Veg, Waterline	OH 03 Temporary Buildings	1.00	LS	477,000	477,000	-	-	4,770	NA	481,770	-
NΑ		Bridges, Roads, Veg, Waterline	OH 04 Temporary Utilities	1.00	LS	144,000	144,000	-	-	1,440	NA	145,440	-
AV		Bridges, Roads, Veg, Waterline	OH 05 Temporary Construction	1.00	LS	429,628	429,628	-	-	4,296	NA	433,924	-
AV		Bridges, Roads, Veg, Waterline	OH 06 Transportation	1.00	LS	134,112	134,112	-	-	1,341	NA	135,453	-
NΑ		Bridges, Roads, Veg, Waterline	OH 07 Office Supplies	1.00	LS	25,700	25,700	-	-	257	NA	25,957	-
AV		Bridges, Roads, Veg, Waterline	OH 08 Safety Supplies	1.00	LS	60,000	60,000	-	-	600	NA	60,600	-
NΑ	-	Bridges, Roads, Veg, Waterline	OH 09 Employee Expense	1.00	LS	20,000	20,000	-	2,000	220	NA	22,220	-
NΑ		Bridges, Roads, Veg, Waterline	OH 10 Contract Services	1.00	LS	36,000	36,000	-	-	360	NA	36,360	-
NΑ		Bridges, Roads, Veg, Waterline	OH 11 Employee Living Cost	1.00	LS	180,000	180,000	-	-	1,800	NA	181,800	-
A	-	Bridges, Roads, Veg, Waterline	OH 12 Winter and Summer Protection	1.00	LS	50,000	50,000	-	-	500	NA	50,500	-
A	-	Bridges, Roads, Veg, Waterline	OH 13 Quality Assurance/ Quality Control	1.00	LS	101,000	101,000	-	10,100	1,111	NA	112,211	-
A	-	Bridges, Roads, Veg, Waterline	OH 14 Lost Production/Overtime/Travel Time	1.00	LS	255,600	255,600	-	25,560	2,812	NA	283,972	-
NΑ	-	Bridges, Roads, Veg, Waterline	OH 16 Demobilization	1.00	LS	225,000	225,000	-	-	2,250	NA	227,250	-
NA	-	Bridges, Roads, Veg, Waterline	OH 18 Survey	1.00	LS	75,000	75,000	-	-	750	NA	75,750	-
NA	-	Bridges, Roads, Veg, Waterline	OH 21 Small Tools	1.00	LS	150,000	150,000	-	-	1,500	NA	151,500	-
NA	-	Bridges, Roads, Veg, Waterline	OH 22 Traffic Control	1.00	LS	240,746	240,746	-	-	2,407	NA	243,153	-
NA		Bridges, Roads, Veg, Waterline	OH 27 Project Equipment	1.00	LS	543,492	543,492	-	54,349	5,978	NA	603,820	-
NA		Bridges, Roads, Veg, Waterline	OH 28 Project Labor	1.00	LS	114,576	114,576	-	11,458	1,260	NA	127,294	-
		Dam Removals											
		Drawdown control & monitoring											
11		Drawdown control & monitoring		1.00	LS	1,012,800	1,012,800	-	101,280	11,141	included	1,125,221	1,265,720
		Copco 1 Dam Removal				, , , , , , , , , , , , , , , , , , , ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		. ,				, ,
11		Copco 1 Dam Removal	Furnish, Install, and Remove Barge-Mounted Crane in Reservoir for [1.00	Is	358,915	358,915	-	35,891	3,948	69,571	468,326	506,541
11		Copco 1 Dam Removal	Remove Sediment from Diversion Tunnel Intake to provide access	1,000	CY	299	299,102	_	29,910	3,290	57,977	390,280	422,126
11		Copco 1 Dam Removal	Mobilize and Demob Large Crane on Right Abutment	1.00	LS	80,000	80,000	_	8,000	880	15,507	104,387	117,421
11		Copco 1 Dam Removal	Remove Water from behind Tailrace Cofferdam	200,000	GAL	0	2.027	-	203	22	393	2.645	2,975
11		Copco 1 Dam Removal	Cofferdam Fill Material Production for Equipment Access	4,000	CY	40	158,677	-	15,868	1,745	30,757	207,047	232,900
11		Copco 1 Dam Removal	Provide Dewatering behind Tailrace Cofferdam	1.00	LS	200,507	200,507	_	20,051	2,206	38,866	261,629	294,297
11		Copco 1 Dam Removal	Remove Current Diversion Tunnel Plug	195	су	650	126,836	_	12,684	1,395	24,585	165,500	179,005
11		Copco 1 Dam Removal	Tailrace Coffer Dam- Furnish & Unload Material	25.00	LD	8,614	215,346	-	21,535	2,369	41,742	280,992	316,078
$\overline{}$		·		12.080	SF	30	361.972	_	36.197	3.982	70.164	472.314	531,289
		Copco 1 Dam Removal	Tailrace Coffer Dam- Drive Pile	12,080	SF	16	188,570	-	18,857	2,074	36,552	246,053	276,777
		Copco 1 Dam Removal	Tailrace Coffer Dam-Extract Pile	38,000	LBS	33		-		13,807			
11		Copco 1 Dam Removal	Installation of 3 each 72" Blind Flanges		LBS		1,255,158	-	125,516		243,297	1,637,777	1,771,420
		Copco 1 Dam Removal	Installation of 16.5 X 18.5 Roller Gate and Gate Structure	1.00	_	4,481,794	4,481,794		448,179	49,300	868,739	5,848,012	6,276,555
		Copco 1 Dam Removal	Removal of 16.5 X 18.5 Roller Gate and Gate Structure	300	CY	662	198,699	-	19,870	2,186	38,515	259,270	291,643
11		Copco 1 Dam Removal	Remove Concrete Dam down to Elev. 2463.5	36,000	су	129	4,636,534	-	463,653	51,002	898,734	6,049,923	6,805,341
11		Copco 1 Dam Removal	Remove Concrete Intake Structure on Right Abutment	16,400	cy	144	2,361,194	-	236,119	25,973	457,688	3,080,974	3,465,677
11		Copco 1 Dam Removal	Remove Structural Steel from Spillway	55,000	LBS	1	73,760	-	7,376	811	14,297	96,245	108,262
11		Copco 1 Dam Removal	Install Diversion Tunnel Plugs	30.00	CY	3,278	98,349	-	9,835	1,082	19,064	128,330	144,354
11		Copco 1 Dam Removal	Remove Diversion Tunnel Control Structure Concrete	350	CY	995	348,092	-	34,809	3,829	67,473	454,203	491,266
11		Copco 1 Dam Removal	Remove & Dispose of Hand Rails at dam	11,000	LBS	0	4,986	-	499	55	967	6,506	7,037
11		Copco 1 Dam Removal	Remove & Dispose of Radial Gates	140,500	LBS	1	93,906	-	9,391	1,033	18,202	122,532	132,531
11		Copco 1 Dam Removal	Remove & Dispose Radial Gate Stop logs	18,000	LBS	0	5,104	-	510	56	989	6,660	7,204
11	2.018	Copco 1 Dam Removal	Remove & Dispose Stop log hoist, track and supports	26,000	LBS	0	9,809	-	981	108	1,901	12,799	13,843
11	2.019	Copco 1 Dam Removal	Remove & Dispose of 3 sections of 23' of 72" Dia. steel lining (embed)	54,000	LBS	4	228,843	-	22,884	2,517	44,358	298,603	322,969
11	2.020	Copco 1 Dam Removal	Remove & Dispose of 3 - 72" butterfly valves (embedded)	55,000	LBS	4	207,267	-	20,727	2,280	40,176	270,449	292,518
11	2.021	Copco 1 Dam Removal	Remove & Dispose of 3 - 72" flapper valves with remote mechanical	78,000	LBS	2	151,723	-	15,172	1,669	29,410	197,974	214,128
11	2.022	Copco 1 Dam Removal	Remove & Dispose of Spillway gate motor & control panel	1.00	EA	5,354	5,354	-	535	59	1,038	6,986	7,556
	2.023	Copco 1 Dam Removal	Remove & Dispose Distribution equipment, panelboards	1.00	EA	5,839	5,839	-	584	64	1,132	7,619	8,571
11		Copco 1 Dam Removal	Remove Powerhouse Concrete down to top of rock under the Powerh	3,100	CY	170	527,781	-	52,778	5,806	102,304	688,668	774,658
11 11	2.024				LBS	1	62,180	-	6,218	684	12,053	81,135	91,266
		Copco 1 Dam Removal	Remove Powerhouse Structural Steel	110,000	LDO								
11 11	2.025			38,000	LBS	1	37,584	-	3,758	413	7,285	49,041	55,164
11	2.025 2.026	Copco 1 Dam Removal Copco 1 Dam Removal Copco 1 Dam Removal	Remove & Dispose of 2 - Governor Oil Systems					-					55,164 16,423
11 11 11	2.025 2.026 2.027	Copco 1 Dam Removal		38,000	LBS	1	37,584		3,758	413	7,285	49,041	

	10 00	ost Estimate - Full Removal											July 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimat
				4.000	100	4	4.074		407	45	000	4 700	0.04
		Copco 1 Dam Removal	Remove & Dispose of Compressed Air System	1,000	LBS	1	1,371	-	137	15	266	1,789	
		Copco 1 Dam Removal	Remove & Dispose of 2 - CO2 Systems	3,100	LBS	1	2,795	-	279	31	542	3,647	4,10
		Copco 1 Dam Removal	Remove & Dispose of Plant Water and Fire Protection	2,600	LBS	1	2,302	-	230	25	446	3,004	3,37
		Copco 1 Dam Removal	Remove & Dispose of Transformer Oil Fire Protection	5,400 27,000	LBS	0	5,879 8,994	-	588 899	65 99	1,139 1,743	7,671 11,736	8,62 13,20
		Copco 1 Dam Removal	Remove & Dispose of Unwatering Piping		LBS	0	1,810	-	181	20		2,362	2,65
		Copco 1 Dam Removal	Remove & Dispose of Drainage Piping	5,000	GAL	3	3,313	-	331	36	351 642	4,322	4,86
		Copco 1 Dam Removal	Remove petroleum products from mechanical equipment	1,250 2.00	EA	67,269	134,538	-	13,454	1,480	26,079	175,550	197,47
		Copco 1 Dam Removal	Remove & Dispose of Horizontal AC Generator, Indoor Open Frame	1.50	EA	7,271	10,907	-	1,091	1,460	2,114	14,231	16,00
		Copco 1 Dam Removal	Remove & Dispose of Excitation equipment for 12.5 MVA Generator	2.00	EA	2,257	4,515	-	451	50	875	5,891	6,62
		Copco 1 Dam Removal	Remove & Dispose of Surge protection equip. for 12.5 MVA Generat	2.00	EA	1,937	3,874	-	387	43	751	5,054	5,68
		Copco 1 Dam Removal	Remove & Dispose of Neutral grounding equip. for 12.5 MVA General	1.00	EA	16,056	16,056		1.606	177	3,112	20.950	23,56
		Copco 1 Dam Removal	Remove & Dispose of Generator Switchgear, 5kV-includes unit brea	1.00	EA	9,002	9,002		900	99	1,745	11,746	13,21
\rightarrow		Copco 1 Dam Removal	Remove & Dispose of Station Service Switchgear, 600 volt - (5 section Se	1.00	EA	4,364	4,364		436	48	846	5,695	6,40
		Copco 1 Dam Removal	Remove & Dispose of Unit and plant control switchboard	1.00	EA	14,110	14,110		1,411	155	2,735	18,411	20,71
		Copco 1 Dam Removal	Remove & Dispose of Battery System	1.00	EA	12,596	12,596		1,260	139	2,733	16,435	18,48
$\overline{}$		Copco 1 Dam Removal	Remove & Dispose of Raceways, Conduit and Cable	1.00	EA	5,030	5.030	-	503	55	975	6.563	7.38
		Copco 1 Dam Removal	Remove & Dispose of Misc. power & control boards	3.00	EA	32,682	98,045		9,804	1,078	19,005	127,933	143,90
		Copco 1 Dam Removal	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-pha	3.00	EA	32,682	98,045	-	9,804	1,078	19,005	127,933	143,90
		Copco 1 Dam Removal	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-pha	1.00	EA	2,965	2,965	-	9,804	1,078	19,005	3.869	4,35
		Copco 1 Dam Removal	Remove & Dispose of Seven 40-Ton Travelling Crane motors - hoist	1.00	EA	2,903	2,903	-	293	32	568	3,825	4,30
		Copco 1 Dam Removal	Remove & Dispose of 40-Ton Travelling Crane control equipment Remove & Dispose of 40-Ton Travelling Crane Festoon Cable	1.00	EA	1,394	1,394	-	139	15	270	1,819	2,04
-		Copco 1 Dam Removal		1.00	EA	682	682	-	68	8	132	891	1,00
		Copco 1 Dam Removal	Remove & Dispose of Four 15-Ton Overhead Crane Motors - hoist	1.00	EA	899	899	-	90	10	174	1,174	1,32
		Copco 1 Dam Removal	Remove & Dispose of 15-Ton Overhead Crane control equipment	1.00	EA	1,408	1,408	-	141	15	273	1,174	2,06
		Copco 1 Dam Removal	Remove & Dispose of 15-Ton Overhead Crane Festoon Cable	10,500	GAL	1,406	38,124	-	3,812	419	7,390	49,745	55,95
-		Copco 1 Dam Removal	Remove petroleum products from mechanical equipment	2.00	EA	1,966	3,931		393	43	7,390	5,130	5,77
		Copco 1 Dam Removal	Remove & Dispose of 69kV circuit breakers, oil filled, PCB	2.00	EA	1,966	3,931	-	393	43	762	5,130	5,77
		Copco 1 Dam Removal	Remove & Dispose of 69kV disconnect switches, group-operated	12.00	EA	1,010	12,119	-	1,212	133	2,349	15,814	17,78
		Copco 1 Dam Removal	Remove & Dispose of 60-foot wood poles	24.00	EA	251	6,017	-	602	66	1,166	7,851	8,83
		Copco 1 Dam Removal	Remove & Dispose of 30-foot wood cross arms	12.00	EA	226	2,715	-	272	30	526	3,543	3,98
		Copco 1 Dam Removal	Remove & Dispose of 69-kV insulator strings	12.00	EA -	226	2,715	-	2/2	30	526	3,543	3,98
		Copco 1 Dam Removal	[PacifiCorp Cover] Remove & Dispose of Transmission Line No. 3	-	-	-	-	-		-			-
		Copco 1 Dam Removal	[PacifiCorp Cover] Remove & Dispose of Transmission Line No. 15	0.07	MILE	28,438	1,991	-	199	22	386	2,598	2,92
		Copco 1 Dam Removal	Remove & Dispose of Transmission Line No. 26-1	0.07	MILE	28,438	1,991		199	22	386	2,598	2,92
		Copco 1 Dam Removal	Remove & Dispose of Transmission Line No. 26-2	720	SF	15	10,965		1,096	121	2,125	14,307	16,09
\rightarrow		Copco 1 Dam Removal	Remove gate house #1 from top of dam	690	SF	16	10,965		1,082	119	2,123	14,307	15,87
		Copco 1 Dam Removal	Remove gate house #2 from top of dam	1,050	су	91	95,337		9,534	1,049	18,480	124,400	139,93
		Copco 1 Dam Removal Copco 1 Dam Removal	Remove Concrete Items associated with 10 ft. diam. Penstocks, reil Plug 14-foot diameter penstock with concrete	38.00	CY	3,331	126,594	-	12,659	1,393	24,539	165,185	185,81
		Copco 1 Dam Removal	Remove & Dispose of 8 screens	18.000	LBS	3,331	19.893	-	1.989	219	3.856	25.957	29.19
			Remove & Dispose of 8 Water Gates	18,000	LBS	1	18,499	-	1,850	203	3,586	24,138	27,15
		Copco 1 Dam Removal Copco 1 Dam Removal	Remove & Dispose of 8 Water Gates Remove & Dispose of 3 - 30" Dia. x 25' stand pipes	6,000	LBS	1	4,966		497	55	963	6,480	7,28
		Copco 1 Dam Removal	Remove & Dispose of 3-30 Dia. X23 stand pipes Remove & Dispose of 14' Dia. penstock pipe	256,000	LBS	1	353.199	_	35,320	3,885	68,463	460.867	518,41
		Copco 1 Dam Removal	Remove & Dispose of 10' Dia. penstock pipe	270,000	LBS	1	282,769		28,277	3,110	54,811	368,967	415,03
		Copco 1 Dam Removal	Site work - Clear and Grub Disposal Area	4.00	AC	5,226	20.904	-	2,090	230	4,052	27.277	30,68
		Copco 1 Dam Removal	Sitework - Concrete Processing and Soil Cover for Disposal Area	12,000	cy	17	206.327	-	20,633	2,270	39,994	269,223	302,83
		Copco 1 Dam Removal	Access/Haul Road Improvements - Soil Excavation	1,600	cy	16	24,822	-	2,482	273	4,811	32,388	36,43
		Copco 1 Dam Removal	Mallard Cove - Concrete total	106	CY	161	17,079	-	1,708	188	3,311	22,285	25,06
		Copco 1 Dam Removal	Mallard Cove - Concrete total Mallard Cove - 25'x5' Dock made of composite decking and poly float	1.00	EA	2,146	2,146	-	215	24	416	2,800	3,15
		Copco 1 Dam Removal	Mallard Cove - 20'x5' Gangway w/ aluminum grate and railings	1.00	EA	1,987	1,987	-	199	22	385	2,593	2,91
		Copco 1 Dam Removal	Mallard Cove - Signs to be removed and hauled away	6.00	EA	114	684	_	68	8	133	892	1,00
		Copco 1 Dam Removal	Mallard Cove - Signs to be removed and hauled away Mallard Cove - Wood plank tables to be removed and hauled away	8.00	EA	83	667	-	67	7	129	870	
\dashv		Copco 1 Dam Removal	Mallard Cove - Parking area to be regraded	2.50	AC	5,059	12.647	-	1,265	139	2,451	16,502	18,56
\dashv		· ·	Copco Cove - Concrete Total	84.00	CY	173	14,517		1,452	160	2,431	18,943	21,30
\dashv		Copco 1 Dam Removal Copco 1 Dam Removal	Copco Cove - Concrete Total Copco Cove - Dock abutment railing made of 2.5" dia. steel pipe	1.00	EA	1,327	1,327		133	150	257	1,732	1,94
\dashv		Copco 1 Dam Removal Copco 1 Dam Removal	Copco Cove - Dock abutment railing made of 2.5 dia. Steel pipe Copco Cove - Signs to be removed and hauled away	6.00	EA	290	1,740		174	19	337	2,271	2,55
\dashv				2.00	EA	167	334		33	4	65	435	49
\rightarrow		Copco 1 Dam Removal	Copco Cove - Wood plank tables to be removed and hauled away	2.00	AC	5.368	12.347	-	1,235	136	2.393	16.111	18,12
+		Copco 1 Dam Removal	Copco Cove - Regrade	1.00	LS	228,613	228,613	-	22,861	2,515	44,314	298,303	335,5
\rightarrow		Copco 1 Dam Removal	Diversion Tunnel Lining (Reinforced Shotcrete)	4.00	EA	11,850	47,402	-	4,740		9,188	61,852	69,5
4		Copco 1 Dam Removal	Remove Frame dead end structures 60-80 ft high @Switchyard					-		521			
-		Copco 1 Dam Removal	Remove Power Circuit Breakers 69KV @Switchyard	2.00	EA	6,116	12,233		1,223	135	2,371	15,962	17,9
-		Copco 1 Dam Removal	Remove Disconnect Switches @Switchyard	4.00	EA	8,710	34,841	-	3,484	383	6,753	45,462	51,13
		Copco 1 Dam Removal Copco 1 Dam Removal	Remove all associated auxiliary equipment @Switchyard (Allowance	1.00	LS EA	53,473	53,473	-	5,347	588 218	10,365 3,846	69,774 25,889	78,48 29,12
			Remove Distribution lines 69 Kv between Copco 1 Switchyard and H	6.00		3,307	19,841	-	1,984	218	2 0 4 6		

	INC C	Cost Estimate - Full Removal										J	uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
ID	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
41	5.011	Copco 1 Dam Removal	Remove Distribution poles 2.4 Kv between Copco#1 HE Plant and C	8.00	EA	1,795	14,359	-	1,436	158	2,783	18,736	21,076
41	5.012	Copco 1 Dam Removal	Remove "Production Poles" in general area Copco#1	7.00	EA	3,600	25,200	-	2,520	277	4,885	32,882	36,988
41	5.013	Copco 1 Dam Removal	Remove "Village Houses Distribution Poles" near dam (assumed 10	10.00	EA	2,433	24,333	-	2,433	268	4,717	31,751	35,715
41	5.014	Copco 1 Dam Removal	Remove 69 KV Distribution line 1.6 miles (30 poles)	30.00	EA	4,195	125,842	-	12,584	1,384	24,393	164,203	184,706
41	5.015	Copco 1 Dam Removal	[PacifiCorp Cover] Remove Transmission conductors on poles 1X/0	-	-	-	-	-	-	-	-	-	-
41	5.016	Copco 1 Dam Removal	[PacifiCorp Cover] Remove Transmission conductors 1.3 miles Cop	-	-	-	-	-	-	-	-	-	-
41	5.034	Copco 1 Dam Removal	Remove Maintenance Building, North & South Residence	6,030	SF	14	84,565	-	8,457	930	16,392	110,344	124,122
		Copco 2 Dam Removal											
41	3.001	Copco 2 Dam Removal	Right Side Coffer Dam- Furnish & Unload Material	20.00	LD	2,009	40,187	-	4,019	442	7,790	52,437	58,985
41	3.001.1	Copco 2 Dam Removal	Right Side Coffer Dam- Drive Pile	7,500	SF	28	210,113	-	21,011	2,311	40,728	274,164	308,397
41	3.001.2	Copco 2 Dam Removal	Right Side Coffer Dam- Extract Pile	7,500	SF	9	64,691	-	6,469	712	12,539	84,411	94,951
41	3.002	Copco 2 Dam Removal	Access Trestle- Furnish & Unload Material	78.00	LD	6,266	488,720	-	48,872	5,376	94,732	637,700	717,326
41	3.002.1	Copco 2 Dam Removal	Access Trestle- Drive Pile	1,120	LF	179	200,090	-	20,009	2,201	38,785	261,085	293,686
41	3.002.2	Copco 2 Dam Removal	Access Trestle - Fabricate Trestle Platform	8,000	SF	12	98,807	-	9,881	1,087	19,152	128,927	145,025
41		Copco 2 Dam Removal	Access Trestle - Remove Trestle Platform	8,000	SF	6	48,606	-	4,861	535	9,422	63,423	71,343
41		Copco 2 Dam Removal	Access Trestle- Extract Pile	1,120	LF	53	59,316	-	5,932	652	11,498	77,397	87,061
41		Copco 2 Dam Removal	Access Trestle- Load & Hauloff Material	78.00	LD	1,856	144,768	-	14,477	1,592	28,062	188,899	212,486
41			Provide Dewatering behind Cofferdams	1.00	LS	178,729	178,729	-	17,873	1,966	34,644	233,212	262,332
41			Remove Water from behind Cofferdams	241,000	GAL	0	5,679	-	568	62	1,101	7,410	8,335
41	3.005		Left Side Coffer Dam- Furnish & Unload Material	15.00	LD	6,989	104,841	-	10,484	1,153	20,322	136,800	153,882
41		1 Copco 2 Dam Removal	Left Side Coffer Dam- Drive Pile	7,500	SF	28	210,113		21,011	2,311	40,728	274,164	308,397
41		2 Copco 2 Dam Removal	Left Side Coffer Dam- Extract Pile	7,500	SF	7	50,691		5.069	558	9.826	66,143	74,402
41		3 Copco 2 Dam Removal	Left Side Coffer Dam- Load & Hauloff Material	15.00	LD	1,158	17.372	-	1.737	191	3,367	22,668	25,499
41		Copco 2 Dam Removal	Coffer Dam Backfill allowance	1.00	LS	50,000	50,000	-	5,000	550	9,692	65,242	73,388
				1.00	LS	89,445	89,445		8,945	984	17,338	116,711	131,284
41	3.007		Provide Dewatering behind left Side Cofferdam	36,000	GAL	09,445	4,602		460	51	892	6,005	6,755
41	3.008		Remove Water from behind Cofferdams		GAL	0			992				
41	3.009		Remove Water from behind Tailrace Cofferdam	400,000			9,919	-		109	1,923	12,943	14,559
41	3.010		Provide Dewatering behind Tailrace Cofferdam	1.00	LS	54,620	54,620	-	5,462	601	10,587	71,270	80,169
41	3.011		Tailrace Coffer Dam- Furnish & Unload Material	10.00	LD	6,918	69,180	-	6,918	761	13,410	90,268	101,540
41		Copco 2 Dam Removal	Tailrace Coffer Dam - Drive Pile	5,400	SF	35	187,260	-	18,726	2,060	36,298	244,344	274,854
41		Copco 2 Dam Removal	Tailrace Coffer Dam - Extract Pile	5,400	SF	7	38,177	-	3,818	420	7,400	49,815	56,035
41	3.014		Remove Concrete in Dam	4,430	су	169	746,509	-	74,651	8,212	144,701	974,072	1,095,699
41		Copco 2 Dam Removal	Remove concrete equipment slab from top of embankment wing dan	5.00	CY	365	1,827	-	183	20	354	2,384	2,682
41		Copco 2 Dam Removal	Remove Concrete Wing wall	240	CY	184	44,193	-	4,419	486	8,566	57,664	64,864
41	3.017	Copco 2 Dam Removal	Right Abutment Removal - Random Fill	1,510	CY	21	31,726	-	3,173	349	6,150	41,398	46,567
41	3.018	Copco 2 Dam Removal	Right Abutment Removal - Remove Hand Placed Riprap	5,400	SF	2	9,895	-	989	109	1,918	12,911	14,523
41	3.019	Copco 2 Dam Removal	Right Abutment Removal - Gunite Curtain Wall	180	CY	191	34,421	-	3,442	379	6,672	44,913	50,521
41	3.020	Copco 2 Dam Removal	Remove & Dispose - Hand rails and Light Poles	5,000	LBS	1	3,825	-	382	42	741	4,991	5,614
41	3.021	Copco 2 Dam Removal	Remove & Dispose - Radial Gates and Hoists	66,000	LBS	1	38,356	-	3,836	422	7,435	50,048	56,298
41	3.022	Copco 2 Dam Removal	Remove & Dispose - 5-Radial Gate Stoplogs & Slots (steel)	95,800	LBS	0	34,294	-	3,429	377	6,648	44,748	50,336
41	3.023	Copco 2 Dam Removal	Remove & Dispose - Spillway intake gate motor & control panel	1.00	EA	1,347	1,347	-	135	15	261	1,758	1,977
41	3.024	Copco 2 Dam Removal	Remove & Dispose - Spillway radial gate motor & control panel	1.00	EA	1,347	1,347	-	135	15	261	1,758	1,977
41	3.025	Copco 2 Dam Removal	Remove & Dispose - Spillway trashrake motor, festoon cable & cont	1.00	EA	558	558	-	56	6	108	728	819
41	3.026	Copco 2 Dam Removal	Remove & Dispose - Distribution equipment, panelboards	1.00	EA	4,889	4,889	-	489	54	948	6,379	7,175
41	3.027	Copco 2 Dam Removal	Remove Copper Shingles from Roof of Powerhouse	7,000	SF	2	12,790	-	1,279	141	2,479	16,689	18,773
41	3.028		Remove Powerhouse Concrete down to spring-line of turbine	1,110	су	146	161,932	-	16,193	1,781	31,389	211,295	237,678
41	3.029		Remove Structural Steel items associated with Powerhouse	220,000	LBS	1	141,804	-	14,180	1,560	27,487	185,031	208,134
41	3.030		Remove Control House Concrete	30.00	CY	261	7,834	-	783	86	1,519	10,222	11,499
41	3.031		Remove Control House Structural Steel Items	3,500	LBS	1	2,785	-	278	31	540	3,633	4,087
41	3.032		Remove Shop Building	4,300	SF	17	73,655	-	7,365	810	14,277	96,107	108,108
41	3.033		Remove & Dispose - 2 - Governor oil systems	38,000	LBS	1	22,355	-	2,235	246	4,333	29,169	32,812
41	3.034		Remove & Dispose - Cooling water and bearing oil systems	13,300	LBS	1	6,852	-	685	75	1,328	8,941	10,057
41	3.035		Remove & Dispose - Cooling water and bearing on systems Remove & Dispose - Oil / Water separator tank and piping	2,700	LBS	0	1,338	-	134	15	259	1,745	1,963
41	3.036		Remove & Dispose - Oil / Water separator tank and piping Remove & Dispose - 12 - Cast Iron Columns	54,000	LBS	0	17,472	-	1,747	192	3,387	22,797	25,644
41	3.036			660,000	LBS	1	333,413		33,341	3,668	64,628	435,049	489,371
41 41	3.037		Remove & Dispose - 2 - Francis Turbines	140,000	LBS	1	86,374	-	8,637	950	16,742	112,704	126,777
			Remove & Dispose - 2 - 40 Ton indoor cranes	1,000	LBS	1	1,227	- :	123	14	238	1,602	1,802
41	3.039		Remove & Dispose - Compressed Air Systems		LBS	1			227	25	439	2,957	
41	3.040		Remove & Dispose - 2 - CO2 Systems	2,100			2,266	•					3,326
41	3.041		Remove & Dispose - Plant Water and Fire Protection	3,100	LBS	1	2,970	-	297	33	576	3,875	4,359
41	3.042		Remove & Dispose - Transformer Oil Fire Protection	6,500	LBS	1	4,289		429	47	831	5,596	6,295
41	3.043		Remove & Dispose - Unwatering Piping	32,000	LBS	0	15,367	-	1,537	169	2,979	20,051	22,555
	3.044	Copco 2 Dam Removal	Remove & Dispose - Drainage Piping	10,000	LBS	1	8,231	-	823	91	1,595	10,740	12,081
41													22.974
41	3.044a	Copco 2 Dam Removal	Remove & Dispose - Petroleum Products from Mechanical Equip.	3,300 3,300	GAL GAL	5	15,652 15,652	-	1,565 1,565	172 172	3,034 3,034	20,424	22,974

	10 0	ost Estimate - Full Removal											uly 2019
st	Cost			1		(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
				0.00		05.757	101 511		10.151	4 445	05.400	474.004	400.004
1		Copco 2 Dam Removal	Remove & Dispose - AC Generator, Indoor Vertical	2.00	EA	65,757	131,514	-	13,151	1,447	25,492	171,604	193,031
1		Copco 2 Dam Removal	Remove & Dispose - Excitation equipment for 15 MVA Generator	2.00	EA	7,007	14,013	-	1,401	154	2,716	18,285	20,568
1		Copco 2 Dam Removal	Remove & Dispose - Surge protection equip. for 15 MVA Generator	2.00	EA	1,882	3,764	-	376	41	730	4,911	5,524
1		Copco 2 Dam Removal	Remove & Dispose - Neutral grounding equip. for 15 MVA Generator	2.00	EA EA	1,750 11,215	3,499 11,215	-	350 1,122	38 123	678 2,174	4,566 14,634	5,136 16,461
1		Copco 2 Dam Removal	Remove & Dispose - Generator Switchgear, 7.2kV-includes unit brea	1.00 1.00	EA	10,051	10,051	-	1,122	123	1,948	13,114	16,461
1		Copco 2 Dam Removal	Remove & Dispose - Station Service Switchgear, 600-volt (5 section	1.00	EA	5,714	5,714	-	571	63	1,108	7,456	8,388
1		Copco 2 Dam Removal	Remove & Dispose - Unit and plant control switchboard	1.00	EA	8,584	8,584	-	858	94	1,664	11,201	12,600
1		Copco 2 Dam Removal	Remove & Dispose - Battery system	1.00	EA	14,077	14,077	-	1,408	155	2,729	18,368	20,661
1		Copco 2 Dam Removal	Remove & Dispose - Raceways, Conduit and Cable	1.00	EA	2,952	2,952	-	295	32	572	3,852	4,333
1		Copco 2 Dam Removal	Remove & Dispose - Misc. Power & Control Boards	1.00	EA	2,485	2,485	-	248	27	482	3,242	3,647
1		Copco 2 Dam Removal	Remove & Dispose - 7 - 40-Ton Travelling Crane motors-hoist (2-30	1.00	EA	3,672	3,672		367	40	712	4,791	5,389
1		Copco 2 Dam Removal	Remove & Dispose - 40-Ton Travelling Crane control equipment	1.00	EA	1,653	1,653		165	18	320	2,157	2,426
\rightarrow		Copco 2 Dam Removal	Remove & Dispose - 40-Ton Travelling Crane Festoon Cable	23,000	GAL	0	10,581		1,058	116	2,051	13,807	15,531
		Copco 2 Dam Removal	Remove Oil from Oil-Filled Step-up Transformers	1,650	_	195	322,442		32,244	3,547	62,501	420,735	473,270
1	0.00	Copco 2 Dam Removal	Remove Intake Structure Concrete Remove Concrete Items associated with 16-foot I.D. Wood Stave Pi	1,310	cy	100	131,584		13,158	1,447	25,506	171,696	193,134
\rightarrow		Copco 2 Dam Removal		100		1.537	153,652		15,156	1,447	29,783	200,491	225.525
1		Copco 2 Dam Removal	Place Concrete Plugs for Tunnels	3,500	cy	132	460,672	-	46,067	5,067	89,295	601,102	676,158
1		Copco 2 Dam Removal	Remove Concrete Items associated with Penstocks D/S from Tunne	50,000	LBS	132	33,075		3,307	364	6,411	43,157	48,546
1		Copco 2 Dam Removal Copco 2 Dam Removal	Remove & Dispose of Caterpillar Gate (steel) Remove & Dispose of Trash rack and trash rake (steel)	86,000	LBS	0	37,773	-	3,777	416	7,322	49,287	55,442
1		Copco 2 Dam Removal	Remove & Dispose of Flash lack and tlash lake (steel) Remove & Dispose of Stop Logs and slots for intake (steel)	220,000	LBS	1	120,510		12,051	1,326	23,359	157,246	176,880
1		Copco 2 Dam Removal	Remove & Dispose of Stop Logs and stots for intake (steer) Remove & Dispose of Wood Staves Soaked in Creosote	1,100,000	LBS	1	646.878	_	64.688	7,116	125,389	844.070	949.464
1		Copco 2 Dam Removal	Remove & Dispose of Wood Staves Soaked in Cleosote Remove & Dispose of Cradles (steel)	290.000	LBS	1	159.276	-	15,928	1,752	30.874	207.829	233,779
1		Copco 2 Dam Removal	Remove & Dispose of Cladles (steel) Remove & Dispose of Bands (steel) Hauling Only	463,000	LBS	0	142,543	-	14,254	1,568	27,630	185,995	209,219
1			Remove & Dispose of Barios (steer) hadring Only Remove & Dispose of Penstock after bifurcation to butterfly valves	860,000	LBS	1	684,003	-	68,400	7,524	132,585	892,513	1,003,956
		Copco 2 Dam Removal		19,500	LBS	0	8,451		845	93	1,638	11,027	12,404
1		Copco 2 Dam Removal	Remove & Dispose of Bifurcated vent pipes and support structure Remove & Dispose of 2 - 138" Butterfly valves	148,000	LBS	1	145,180		14,518	1,597	28,141	189,436	213,090
1		Copco 2 Dam Removal		140,000	-	- '	145,160	-	14,516	1,597	20,141	109,430	213,090
1		Copco 2 Dam Removal	[PacifiCorp Cover] Disconnect and remove MV Transformers 115 KV	-	-	-	-	-	-	-			-
1		Copco 2 Dam Removal	[PacifiCorp Cover] Disconnect and remove Medium Voltage Circuit E	-	-	-	-	-	-	-	-		-
1		Copco 2 Dam Removal	[PacifiCorp Cover] Disconnect and remove MV Transformers 12 KV	-	-		-	-	-	-			-
1		Copco 2 Dam Removal	[PacifiCorp Cover] Disconnect and remove cable connection between	-	-	- :	-	-		-	-		-
1		Copco 2 Dam Removal	[PacifiCorp Cover] Remove all associated auxiliary equipment @ Su				532,781	-	53,278		103,273		781,997
1		Copco 2 Dam Removal	Demolish overhead transmission line and structure 69 KV Copco#1	5.00 1.50	Miles	106,556 7,132	10,698	-	1,070	5,861 118	2,074	695,192 13,960	15,703
1		Copco 2 Dam Removal	Demolish transmission conductor from existing structure pole. Structure	6.00	EA	3,334	20,006	-	2.001	220	3.878	26.104	29,364
1		Copco 2 Dam Removal	Remove structures between pole 2/007 and Iron Gate	31,680	SF	12	390,782	-	39,078	4,299	75,748	509,907	573,576
1		Copco 2 Dam Removal	Copco Village Building Demolition	31,000	OF.	12	390,762	-	39,076	4,299	75,746	509,907	5/3,5/6
		Iron Gate Dam Removal	Ei-b le-t-lli-B	1.00	Is	151,386	151,386	_	15,139	1,665	102,161	270,351	292,411
1		Iron Gate Dam Removal	Furnish, Install, and Remove Barge-Mounted Crane in Reservoir	1.00	LS	19,694	19,694	-	1,969	217	13,290	35,169	38,039
\rightarrow			Furnish, Install, and Remove Temporary Air Vent Hose from Barge to	46.00	CY	332	15,257		1,526	168	10,296	27.247	29,471
1		Iron Gate Dam Removal	Remove Reinforced Concrete Ring Located D/S of Closure Gate and	6.00	CY	998	5,986	-	599	66	4,040	10,691	11,563
1		Iron Gate Dam Removal	Remove Reinforced Concrete Stoplog Structure Remove Water from behind Tailrace Cofferdam	300,000	GAL	990	4,988		499	55	3,366	8,908	10,021
		Iron Gate Dam Removal		1.00	LS	25.776	25.776		2,578	284	17,394	46.031	51,779
1		Iron Gate Dam Removal	Provide Dewatering behind Tailrace Cofferdam for removal of Power	20.00	LD	8,671	173,413	-	17,341	1,908	117,026	309,687	348,356
1		Iron Gate Dam Removal Iron Gate Dam Removal	Tailrace Coffer Dam- Fumish & Unload Material Tailrace Coffer Dam- Drive Pile	7.840	SF	32	254.723	-	25,472	2,802	171.898	454.895	511,695
			Tailrace Coffer Dam-Drive Pile Tailrace Coffer Dam-Extract Pile	7,840	SF	16	124,240		12.424	1,367	83.842	221.873	249,577
		Iron Gate Dam Removal	Upstream Cofferdam to be Removed in the Wet	10,000	су	17	169,960	-	16,996	1,870	114,696	303,522	341,421
1		Iron Gate Dam Removal		19,000	LBS	3	60,734	-	6,073	668	40,986	108,462	117,312
		Iron Gate Dam Removal	Remove 9' dia. hinged blind flange	2,620	LBS	2	5,708		571	63	3,852	100,402	11,026
1		Iron Gate Dam Removal	Remove 18" plug valve and 7' of 18" drainage pipe	1.00	LBS	3,791,300	3,791,300	-	379,130	41,704	2,558,523	6,770,657	7,266,811
		Iron Gate Dam Removal	Installation of 15.5'w X 16.5't Roller Gate and Gate Structure	110,000	LBS	3,791,300	295,107	-	29,511	3,246	199,150	527,014	570,019
\rightarrow		Iron Gate Dam Removal	Remove Existing Sluice Gate and Grating by divers	300	CY	424	127,339	-	12,734	1,401	85,934	227,408	255,803
		Iron Gate Dam Removal	Remove New Roller Gate Structure	780	_	106	82,743	-	8,274	910	55,838	147,765	166,216
1		Iron Gate Dam Removal	Remove Concrete in Observation Platform, Crest Wall and Wall Exte	780 715	cy	106	73,038	-	7,304	803	49,289	130,434	146,721
1		Iron Gate Dam Removal	Remove Concrete in Diversion Tunnel Intake Structure	650	CY CY	75	48,738	-	4,874	536	32,891	87,039	97,907
1		Iron Gate Dam Removal	Remove Concrete in Diversion Tunnel Gate Tower	13,000	LBS	1	9,365	-	937	103	6,320	16,725	18,813
1		Iron Gate Dam Removal	Remove Steel Footbridge to Gate Tower	39.00	CY	133	5,183	-	518	57	3,498	9,256	10,011
1		Iron Gate Dam Removal	Remove Concrete in Diversion Tunnel Footbridge Abutment	39.00 86.00	CY	2,770	5,183 238.186	-			160,738	9,256 425,363	
1		Iron Gate Dam Removal	Place Concrete Plugs for Diversion Tunnel			, .	,	-	23,819	2,620			478,475
1		Iron Gate Dam Removal	Remove Concrete Closure Gates in Gate Tower	85.00	CY	409	34,758	-	3,476	382	23,456	62,073	67,138
1		Iron Gate Dam Removal	Remove Upstream Riprap (10' thick upstream side of Dam)	92,400	су	6	574,262	-	57,426	6,317	387,536	1,025,541	1,153,594
	4.022	Iron Gate Dam Removal	Remove Downstream Riprap	23,400	су	6	150,090	-	15,009	1,651	101,287	268,036	301,504
1													3,301,594
1	4.023	Iron Gate Dam Removal	Dam Fill Excavation to Spillway	270,000	су	6	1,643,543	-	164,354	18,079	1,109,129	2,935,105	
1	4.023 4.023.1	Iron Gate Dam Removal Iron Gate Dam Removal Iron Gate Dam Removal	Dam Fill Excavation to Spillway Dam Fill Excavation to Disposal Site Cutoff Wall Concrete Demolition	270,000 761,159 2,440	cy cy	6 4 73	1,643,543 3,151,693 177,701	-	315,169 17,770	34,669 1,955	2,126,890 119,920	2,935,105 5,628,421 317,346	6,331,208

	st eet Heading	Description	Qty	Unit	(\$) Rate	(\$) Direct Cost	15% MU by Sub	10% PDB OH&P	1%	Field	(\$)	Escalated
	eet Heading	Description	Qty	Unit	Rate	Direct Cost	MII by Sub					
11 4.02					rtato	Direct Cost	IVIO DY GUD	PUB URAP	Bonds	Overhead	Estimate	YOC Estimate
11 / 102												
	25 Iron Gate Dam Removal	Earth Fill Crest Raise Demolition	13,000	су	13	163,229	-	16,323	1,796	110,153	291,501	327,899
41 4.02		Sheetpile Crest Raise Demolition	800	lf	286	229,123	-	22,912	2,520	154,622	409,178	460,269
41 4.02		Remove 5 Reservoir Monitoring Wells	5.00	EA	2,204	11,018	-	1,102	121	7,435	19,676	22,133
41 4.02	28 Iron Gate Dam Removal	Remove and Dispose of Trash Sluice Gate - 10 ft x 9 ft H	4,500	LB	1	4,999	-	500	55	3,373	8,927	10,042
41 4.02	29 Iron Gate Dam Removal	Remove and Dispose of Intake Structure	72,000	LBS	1	54,179	-	5,418	596	36,562	96,754	108,835
41 4.03	31 Iron Gate Dam Removal	Remove and Dispose of Hoist Stem - 6" Dia. Sch 160' x150'	7,500	LBS	1	6,866	-	687	76	4,634	12,262	13,794
41 4.03	32 Iron Gate Dam Removal	Remove and Dispose of Air Vent Pipe - 8" Dia. Sch 40 x160'	4,650	LBS	1	5,834	-	583	64	3,937	10,419	11,720
41 4.03	34 Iron Gate Dam Removal	Remove and Dispose of Air Vent Pipe - 12" Dia. Sch 40 x560'	30,250	LBS	0	14,525	-	1,453	160	9,802	25,940	29,178
41 4.03	35 Iron Gate Dam Removal	Remove and Dispose of Outlet Works Stop Logs	2,670	LB	1	2,966	-	297	33	2,002	5,297	5,958
41 4.03	36 Iron Gate Dam Removal	Remove and Dispose of Hydraulic Pump Motor (10 HP est) & control	1.00	EA	457	457	-	46	5	309	817	919
41 4.03		Remove and Dispose of Distribution Equipment, Junction Boxes	1.00	EA	2,222	2,222	-	222	24	1,499	3,967	4,463
41 4.03		Remove and Dispose of Power Cable and 4" Conduit from Penstock	800	LF	17	13,560		1,356	149	9,151	24,217	27,241
41 4.03		Remove Powerhouse Concrete down to spring-line of turbine	5,200	су	156	812,563		81,256	8,938	548,350	1,451,108	1,632,299
41 4.04		Remove and Dispose of Turbine Unit	344,058	LBS	0	163,016	-	16,302	1,793	110.010	291,121	327,472
41 4.04		Remove and Dispose of Praising Child	16,500	LBS	0	7,630	-	763	84	5.149	13,627	15,328
41 4.04		Remove and Dispose of Crane	24,000	LBS	1	12,659	-	1,266	139	8,543	22,608	25,431
41 4.04		Remove and Dispose of Crane Remove and Dispose of Governor	20,310	LBS	0	8,144	-	814	90	5,496	14,543	16,359
				LBS			-	648	71	4,372		
41 4.04		Remove and Dispose of Bearing Oil System and Cooling Water Sys	9,182		1	6,479		185			11,571	13,016
41 4.04		Remove and Dispose of CO2 Systems	2,568	LBS		1,851			20	1,249	3,305	3,718
41 4.04		Remove and Dispose of Plant Water and Fire Protection System	9,182	LBS	1	6,479	-	648	71	4,372	11,571	13,016
41 4.04		Remove and Dispose of Oil Sump Pumps	2,000	LBS	1	1,682	-	168	19	1,135	3,004	3,379
41 4.04		Remove and Dispose of Pumps	22,000	LBS	1	14,988	-	1,499	165	10,115	26,766	30,109
41 4.04	49 Iron Gate Dam Removal	Remove and Dispose of Exposed Piping Around the Plant	19,291	LBS	1	13,278	-	1,328	146	8,961	23,713	26,674
41 4.05	50 Iron Gate Dam Removal	Remove and Dispose of Unwatering Piping	19,291	LBS	1	13,034	-	1,303	143	8,796	23,277	26,184
41 4.05	51 Iron Gate Dam Removal	Remove and Dispose of Drainage Piping	9,518	LBS	1	6,573	-	657	72	4,436	11,739	13,204
41 4.05	52 Iron Gate Dam Removal	Remove and Dispose of Transformer Oil and Fire Protection Pipes	9,182	LBS	1	8,633	-	863	95	5,826	15,418	17,343
41 4.05	53 Iron Gate Dam Removal	Remove and Dispose of Compressed Air System	1,450	LBS	1	1,145	-	114	13	773	2,045	2,300
41 4.053		Remove & Dispose - Petroleum Products from Mechanical Equip.	1,100	GAL	3	2,996	-	300	33	2,022	5,351	6,019
41 4.05		Remove and Dispose of AC Generator, Outdoor Horizontal	1.00	EA	67.376	67,376		6.738	741	45,468	120,323	135,347
41 4.05		Remove and Dispose of Excitation equipment for 18.975 MVA Gene	1.00	EA	2,263	2,263		226	25	1,527	4.042	4,547
41 4.05		Remove and Dispose of Surge protection equip. for 18.975 MVA Get	1.00	EA	2,989	2,989	-	299	33	2,017	5,337	6,004
41 4.05		Remove and Dispose of Neutral grounding equip. for 18.975 MVA Get	1.00	EA	2,738	2,738	-	274	30	1,847	4.889	5,500
41 4.05		Remove and Dispose of Station Service Switchgear, 600 volt - (5 se	1.00	EA	5,178	5,178		518	57	3.494	9,247	10,401
41 4.05		Remove and Dispose of Station Service Switchgear, 600 wit - (5 se	1.00	EA	21,611	21,611		2,161	238	14,584	38.594	43,412
			1.00	EA	7,115	7,115	-	712	78	4,802	12,706	14,293
41 4.06		Remove and Dispose of Battery System - assume 60 batteries, char		EA	9,279		-	928	102	6,262		18,639
41 4.06		Remove and Dispose of Raceways, Bus, Conduit and Cable	1.00			9,279				-	16,570	
41 4.06		Remove and Dispose of Unit and plant control switchboard	1.00	EA	2,918	2,918	-	292	32	1,969	5,212	5,862
41 4.06		Remove and Dispose of Unit and plant control switchboard	1.00	EA	6,566	6,566	-	657	72	4,431	11,727	13,191
41 4.06		Remove and Dispose of Unit and plant control switchboard	1.00	EA	1,010	1,010	-	101	11	682	1,804	2,029
41 4.06		Remove and Dispose of Vertical Motors, outdoor, (480V, 100 HP est	4.00	EA	784	3,136	-	314	35	2,117	5,601	6,301
41 4.06	66 Iron Gate Dam Removal	Remove and Dispose of Transformer (3 phase, 300 kVA, 6600/480V	1.00	EA	4,954	4,954	-	495	54	3,343	8,847	9,952
41 4.06	7 Iron Gate Dam Removal	Remove and Dispose of Step-up Transformer, outdoor, oil-filled, 3-p	1.00	EA	37,331	37,331	-	3,733	411	25,192	66,667	74,991
41 4.06	68 Iron Gate Dam Removal	Remove and Dispose of Lattice steel structure, with 69-kV disconne	1.00	EA	7,870	7,870	-	787	87	5,311	14,054	15,809
41 4.06	69 Iron Gate Dam Removal	Remove and Dispose of Generator Switchgear, outdoor, 7.2kV included	1.00	EA	22,734	22,734	-	2,273	250	15,342	40,598	45,668
41 4.07	70 Iron Gate Dam Removal	Remove and Dispose of Single Phase Pole Transformers (25 kVA e	3.00	EA	2,254	6,763	-	676	74	4,564	12,078	13,586
41 4.07	71 Iron Gate Dam Removal	Remove Concrete in Penstock Intake Structure	460	су	106	48,666	-	4,867	535	32,842	86,910	97,762
41 4.07		Remove Concrete in Penstock Encasement	710	су	104	73,588	-	7,359	809	49,660	131,416	147,825
41 4.07		Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports	3,110	су	96	298,491		29,849	3,283	201,434	533,057	599,617
	74 Iron Gate Dam Removal	Remove Steel Footbridge to Intake Structure	11,000	LBS	1	10,829	-	1.083	119	7,308	19,338	21,753
41 4.07		Remove Concrete in Intake Structure Footbridge Abutment	5.00	cy	876	4,378		438	48	2,955	7,819	8,795
41 4.07		Remove and Dispose of Intake Structure	131,630	LBS	1	114,162	-	11,416	1,256	77,041	203,875	229,331
			1,800	LBS	1	1,999	-	200	1,230	1,349	3,571	4,017
		Remove and Dispose of Gate Hoist Stem - 6" Sch160x40'	1,800	LB	1	1,500	-	150	16	1,012	2,678	3,012
41 4.07		Remove and Dispose of Water Fill line- 12" Dia STD x 27'		LB				150	16 20			
41 4.07		Remove and Dispose of Air Vent - 12" Dia STD x 32'	1,600		1	1,777				1,199	3,174	3,570
41 4.08		Remove and Dispose of Gage Wells	2,612	LB	1	2,901	-	290	32	1,958	5,182	5,829
41 4.08		Remove and Dispose of Penstock Vent - 46" Dia, 0.25" Thick x 60'	7,440	LBS	1	9,834	-	983	108	6,636	17,562	19,755
41 4.08		Remove and Dispose of Penstock - 12' Dia, 0.25" Thick x 698'	294,428	LBS	1	306,205	-	30,621	3,368	206,640	546,833	615,113
41 4.08	33 Iron Gate Dam Removal	Remove and Dispose of Bypass Outlet - 96" Dia, 0.25" Thick x 50'	12,800	LBS	1	12,702	-	1,270	140	8,572	22,683	25,516
41 4.08	84 Iron Gate Dam Removal	Remove and Dispose of Outlet Valve on bypass outlet - 66" Dia.	18,000	LBS	2	39,904	-	3,990	439	26,929	71,262	80,160
41 4.08	B5 Iron Gate Dam Removal	Remove and Dispose Overhead trolley Crane Motor (4hp est) & Contr	1.00	EA	1,307	1,307	-	131	14	882	2,334	2,625
	86 Iron Gate Dam Removal	Remove and Dispose Distribution equipment, Junction Boxes	1.00	EA	3,267	3,267	-	327	36	2,205	5,835	6,563
41 4.08								2,488	274	16,790	44,431	49,979
41 4.08 41 4.08		Remove and Dispose Power Cable and Conduit	1.00	EA	24,880	24,880	-	2,400	2/4	16,790	44,431	43,313
	37 Iron Gate Dam Removal		1.00 29.00	EA AC	24,880 3,593	24,880 104,203	-	10,420	1,146	70,320	186,089	209,325

	10 0	ost Estimate - Full Removal											luly 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
1		Iron Gate Dam Removal	Remove Building No. 3	1,088	SF	14	15,192	-	1,519	167	10,252	27,130	30,517
1		Iron Gate Dam Removal	Remove Concrete in Fish Ladder	1,240	cy	103	127,646	-	12,765	1,404	86,141	227,956	256,419
1		Iron Gate Dam Removal	Remove Concrete in Holding Ponds #1 thru #6	1,380	CY	99	135,964	-	13,596	1,496	91,754	242,810	273,128
1		Iron Gate Dam Removal	Remove Concrete in Fish Facility Items	1,200	CY	98	118,134	-	11,813	1,299	79,721	210,968	237,310
1		Iron Gate Dam Removal	Remove Miscellaneous Metalwork in Fish Facilities	12,000	LBS	1	8,390	-	839	92	5,662	14,984	16,855
1		Iron Gate Dam Removal	Remove Concrete Associated with 30" Dia. water supply line	80.00	CY	69	5,512	-	551	61	3,720	9,843	11,072
1		Iron Gate Dam Removal	Remove Concrete in Aerator Structure	65.00	CY	74	4,835	-	483	53	3,263	8,634	9,712
1		Iron Gate Dam Removal	Remove Wood in Aerator Structure	6,000	LB	1	5,489	-	549	60	3,704	9,802	11,026
1		Iron Gate Dam Removal	Remove Structural Steel in Aerator Structure	2,500	LB		2,777	-	278	31	1,874	4,959	5,579
1		Iron Gate Dam Removal	Remove Asphalt Pavement	3,900	SF SF	6	21,573	-	2,157	237	14,558	38,526	43,336
1		Iron Gate Dam Removal	Remove Restroom Building near Aerator Structure	340 90.00	SF	14	4,761	-	476 133	52 15	3,213 900	8,502 2,383	9,564 2,680
1		Iron Gate Dam Removal	Remove Storage Shed near Aerator Structure	260	LF	15 13	1,334 3,257	-	326	36	2,198	5,817	6,54
1		Iron Gate Dam Removal	Remove Toe Drain Pipe	25.00	LF	65	1,634	-	163	18	1,102	2,917	3,282
1		Iron Gate Dam Removal	Remove Toe Drain Manhole	53,000		4	196,609	-	19,661		132,680	351,112	394,953
1		Iron Gate Dam Removal	Berm Removal	5,000	cy LB	1	4,901		490	2,163 54	3,307	8,752	9,845
1		Iron Gate Dam Removal	Remove and Dispose of Intake Structures Trashracks	76.640	LBS	1	56.828	-	5.683	625	38.350	101.486	114.158
1		Iron Gate Dam Removal	Remove and Dispose of Pipe Conduit, 30" Dia. x 0.25" Thick x 960'	-,				-	-7		,	- ,	
1		Iron Gate Dam Removal	Remove and Dispose of Sluice Gate Valve, 30" Dia.	3,000 360	LB LB	1	3,332 400	-	333 40	37 4	2,249	5,951 714	6,694 803
1		Iron Gate Dam Removal	Remove and Dispose of Sluice Gate Stem, 2" Dia. Sch160x45'					-			270		
1		Iron Gate Dam Removal	Remove and Dispose of Butterfly Valve, 30" Dia.	2,435	LBS	1 0	2,705 2,581	-	270 258	30 28	1,825	4,830 4,609	5,434
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 30-in. Dia. x 0.25 thick x 90'	7,200				-			1,742		5,185
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 24-in. Dia. x 0.25 thick x 248'	15,872	LBS	0	5,035	-	503	55	3,398	8,991	10,114
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 20-in. Dia. x 0.25 thick x 85'	4,505	LBS	0	1,763	-	176	19	1,190	3,149	3,542
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 18-in. Dia. x 0.25 thick x 432'	29,088	LBS	0	10,646	-	1,065	117	7,184	19,012	21,386
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 16-in. Dia. x 0.25 thick x 166'	6,972	LBS	0	2,566	-	257	28	1,732	4,583	5,155
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 12-in. Dia. x 0.25 thick x 64'	2,176	LBS	0	1,047	-	105	12	707	1,870	2,103
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 10-in. Dia. x 0.25 thick x 69'	1,932	LBS	1	1,019	-	102	11	688	1,820	2,048
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 8-in. Dia. x 0.25 thick x 30'	3,588	LBS	0	971	-	97	11	655	1,733	1,950
1		Iron Gate Dam Removal	Remove and Dispose of Piping- 3-in. Dia. x STD x 30'	1,088	LBS	1	706	-	71	8	476	1,260	1,418
1	4.131	Iron Gate Dam Removal	Remove and Dispose of Gate Valves	21,792	LBS	0	9,221	-	922	101	6,223	16,468	18,524
1		Iron Gate Dam Removal	Remove and Dispose of Basin #1	2,880	LBS	1	2,577	-	258	28	1,739	4,602	5,177
1		Iron Gate Dam Removal	Remove and Dispose of Basin #2	3,660	LBS	1	3,365	-	337	37	2,271	6,010	6,761
1		Iron Gate Dam Removal	Remove and Dispose of Basin #3	2,880	LBS	2	6,871	-	687	76	4,637	12,271	13,804
1		Iron Gate Dam Removal	Remove and Dispose of Basin #4	3,580	LBS	2	6,871	-	687	76	4,637	12,271	13,804
1		Iron Gate Dam Removal	Remove and Dispose of Basin #5	1,440	LBS	5	6,871	-	687	76	4,637	12,271	13,804
1		Iron Gate Dam Removal	Remove and Dispose of Basin #6	1,440	LBS	5	6,871	-	687	76	4,637	12,271	13,804
1	4.138	Iron Gate Dam Removal	Remove and Dispose of Holding Tank	7,400	LBS	1	9,281	-	928	102	6,263	16,574	18,643
1		Iron Gate Dam Removal	Remove and Dispose of Misc.: Motors, control panels, cables, cond	1.00	EA	1,960	1,960	-	196	22	1,323	3,501	3,938
1	4.140	Iron Gate Dam Removal	Wanaka Springs - Concrete Total	28.00	CY	274	7,674	-	767	84	5,179	13,705	15,416
1	4.141	Iron Gate Dam Removal	Wanaka Springs - Double Pipe Railings	60.00	LF	52	3,136	-	314	35	2,117	5,601	6,301
1	4.142	Iron Gate Dam Removal	Wanaka Springs - Wood picnic tables to be removed and hauled	5.00	EA	131	653	-	65	7	441	1,167	1,313
1	4.143	Iron Gate Dam Removal	Wanaka Springs - 25'x5' Wooden floating dock	125	SF	26	3,267	-	327	36	2,205	5,835	6,563
1	4.144	Iron Gate Dam Removal	Wanaka Springs - Regrade	2.50	AC	5,925	14,812	-	1,481	163	9,996	26,452	29,755
1		Iron Gate Dam Removal	Wanaka Springs - Signs to be removed and hauled away	3.00	EA	392	1,176	-	118	13	794	2,100	2,363
1		Iron Gate Dam Removal	Wanaka Springs - 15'x5' Gangplank with Railings	75.00	SF	26	1,960	-	196	22	1,323	3,501	3,938
1		Iron Gate Dam Removal	Juniper Point - Concrete Total	19.00	CY	297	5,644	-	564	62	3,809	10,080	11,339
1		Iron Gate Dam Removal	Juniper Point - 2, 4x4 Toilet Vaults	32.00	SF	131	4,182	-	418	46	2,822	7,468	8,401
1		Iron Gate Dam Removal	Juniper Point - Wood picnic tables to be removed and hauled	8.00	EA	131	1,045	-	105	12	706	1,867	2,100
1		Iron Gate Dam Removal	Juniper Point - Signs to be removed and hauled away	4.00	EA	392	1,568	-	157	17	1,058	2,801	3,150
1		Iron Gate Dam Removal	Juniper Point - Dock pile railing	50.00	LF	52	2,614	-	261	29	1,764	4,668	5,250
1		Iron Gate Dam Removal	Juniper Point - 50'x5' Composite dock with poly floats	250	SF	22	5,568	-	557	61	3,758	9,944	11,185
1		Iron Gate Dam Removal	Juniper Point - 20'x5' Composite gangplank with railings	100	SF	26	2,614	-	261	29	1,764	4,668	5,250
1	4.155	Iron Gate Dam Removal	Juniper Point - Regrade to Natural Contour	2.00	AC	6,654	13,308	-	1,331	146	8,981	23,766	26,73
1	4.156	Iron Gate Dam Removal	Camp Creek - Concrete Total	110	CY	116	12,756	-	1,276	140	8,608	22,779	25,624
1		Iron Gate Dam Removal	Camp Creek - 180'Lx16'Wx8'D Earth jetty to remove and/or regrade	855	CY	92	78,402	-	7,840	862	52,909	140,014	157,49
1	4.158	Iron Gate Dam Removal	Camp Creek - Well house 10'x16' concrete block building	160	SF	14	2,253	-	225	25	1,520	4,023	4,52
1	4.159	Iron Gate Dam Removal	Camp Creek - 2, 20'x5' Composite decking gangplanks	200	SF	26	5,227	-	523	58	3,528	9,335	10,50
1	4.160	Iron Gate Dam Removal	Camp Creek - 2, 20'x5' Floating composite w/ aluminum frame	200	SF	26	5,227	-	523	58	3,528	9,335	10,50
1	4.161	Iron Gate Dam Removal	Camp Creek - Concrete block double toilet bldg 10'x16'	160	SF	14	2,253	-	225	25	1,520	4,023	4,52
1	4.162	Iron Gate Dam Removal	Camp Creek - Dump stations and approx. 2000 gal buried	1.00	EA	3,027	3,027	-	303	33	2,043	5,406	6,08
1		Iron Gate Dam Removal	Camp Creek - Power poles and lines	3.00	EA	2,563	7,690	-	769	85	5,190	13,734	15,44
1				600	LF	7	3,921	-	392	43	2,646	7,001	7,870
1	4.164	Iron Gate Dam Removal	Camp Creek - Remove waterlines and 3 faucets and regrade	000									
_		Iron Gate Dam Removal	Camp Creek - Remove waterlines and 3 raucets and regrade Camp Creek - Steel pipe/plank picnic tables to be removed and haul	5.00	EA	131	653	-	65	7	441	1,167	1,313

	100	ost Estimate - Full Removal											uly 2019
Est D	Cost Sheet	Heading C	Description	Qty	Unit	(\$) Rate	(\$) Direct Cost	15% MU by Sub	10% PDB OH&P	1% Bonds	Field Overhead	(\$) Estimate	Escalated YOC Estimate
11	4 168	Iron Gate Dam Removal	Camp Creek - Regrade	4.00	AC	3,961	15,844	-	1,584	174	10,692	28,295	31,828
11			Camp Creek - Signs to be removed and hauled away	7.00	EA	392	2,744	-	274	30	1,852	4,901	5,513
11			Outch Creek - 50'4'3' Dock Concrete Abutment	22.00	CY	345	7,582	-	758	83	5,117	13,540	15,231
11	4.171	Iron Gate Dam Removal	Outch Creek - Double Pipe Railing	100	LF	52	5,227	-	523	58	3,528	9,335	10,501
11			Mirror Cove - Concrete Total	89.00	CY	89	7,924	-	792	87	5,347	14,151	15,918
11	4.173	Iron Gate Dam Removal	/irror Cove - 10'x16' Toilet Vault	160	SF	14	2,253	-	225	25	1,520	4,023	4,525
11	4.174	Iron Gate Dam Removal	/irror Cove - 2, 30'x5' Composite Gangplanks w/ aluminum	300	SF	16	4,867	-	487	54	3,285	8,692	9,778
11	4.175	Iron Gate Dam Removal	/irror Cove - Double pipe railings on dock	80.00	LF	52	4,182	-	418	46	2,822	7,468	8,401
11	4.177	Iron Gate Dam Removal	/irror Cove - Regrade site	3.00	AC	6,654	19,962	-	1,996	220	13,471	35,648	40,100
11	4.178	Iron Gate Dam Removal	/Irror Cove - Signs to be removed and hauled away	7.00	EA	392	2,744	-	274	30	1,852	4,901	5,513
11	4.179		Overlook Point - 1 concrete picnic table base	1.00	CY	392	392	-	39	4	265	700	788
11			Overlook Point - Steel frame table to be removed and hauled away	1.00	EA	131	131	-	13	1	88	233	263
11			Overlook Point - Regrade steep access road and site to natural cont	0.50	AC	6,654	3,327	-	333	37	2,245	5,941	6,683
11			ong Gulch - 80'x25x4" Concrete boat ramp to be removed	25.00	CY	291	7,270	-	727	80	4,906	12,983	14,604
11			ong Gulch - Remove picnic tables (steel frames with planks) and h	2.00	EA	131	261	-	26	3	176	467	525
11			ong Gulch - Regrade ramp area to natural contours, rip, reseed	0.05	AC	32,671	1,634	-	163	18	1,102	2,917	3,282
11			Concrete Lining Installation for Diversion Tunnel	1.00	LS	1,116,948	1,116,948	-	111,695	12,286	753,762	1,994,692	2,243,757
11			Remove Distribution Poles near Iron Gate Hydro Plant	5.00	EA	1,732	8,659	-	866	95	5,843	15,463	17,394
11			Remove 69kV/6.6kV Transformer @Substation	1.00	EA	2,319	2,319	-	232	26	1,565	4,142	4,659
11			Remove 6.6kV Power Circuit Breaker @Substation	1.00	EA	3,396	3,396	-	340	37	2,292	6,065	6,822
11			Remove Generator @ Substation	1.00	EA LS	14,304 30,514	14,304 30,514	-	1,430 3,051	157 336	9,653 20,592	25,545 54,493	28,735 61,297
11			Remove all auxiliary equipment @Substation (Allowance)	1.00	LS -	30,514	30,514	-	3,051	-	20,592	54,493	61,297
11			PacifiCorp Cover] New Connection @Iron Gate Hatchery from Pacifi	7,707	SF	14	107.307	-	10,731	1,180	72,415	191,634	215,562
11			Removal Of Residence Building (Spillway Bank)	7,707	SF.	14	107,307	-	10,731	1,100	72,415	191,034	215,562
		JC Boyle Dam Removal	Removal of Diversion Conduit Bulkheads	14.00	CY	1,567	21,933		2,193	241	13,011	37,379	42,046
11		-		500,000	GAL	0	4.729		473	52	2.805	8.059	9,065
11 11			Remove Water from behind Tailrace Cofferdam Provide Dewatering behind Tailrace Cofferdam	1.00	LS	67,996	67,996	-	6,800	748	40,335	115,879	130,348
11			Removal of Diversion Conduit Bulkheads	14.00	CY	1,567	21.933		2,193	241	13,011	37,379	42,046
11			Remove Spillway Concrete	2,100	CY	73	154,015		15,402	1,694	91,362	262,473	295,246
11		-	Remove Monorail Structural Steel Components	15,000	LBS	0	5,765	_	577	63	3,420	9,825	11,052
11			Remove Fish Ladder Concrete	1,820	CY	94	170,333	_	17,033	1,874	101,042	290,283	326,529
11			Remove Gravity Dam Section Concrete	600	CY	95	57,056	-	5,706	628	33,845	97,234	109,375
11		-	Remove Timber Equipment Ramp on left side of Dam	10,500	LBS	0	3,990	-	399	44	2,367	6,800	7,649
11			Remove Pressure-Treated Lumber from Footbridge around Intake Sti	3,600	SF	6	20,282	-	2,028	223	12,031	34,564	38,880
11			Remove Storage Shed located on access road	4,480	SF	14	61,644	-	6,164	678	36,567	105,054	118,171
11			Remove Warehouse, North Residence, and South Residence Near	8,965	SF	15	138,237	-	13,824	1,521	82,002	235,583	264,999
11			Remove Fire System Control Bldg. on left abutment	520	SF	15	7,623	-	762	84	4,522	12,992	14,614
11			Remove Dam Communication Bldg. on left abutment	490	SF	13	6,454	-	645	71	3,828	10,999	12,372
11			Remove Concrete Slab on left abutment for former Control House	6.00	CY	698	4,185	-	419	46	2,483	7,132	8,023
11		-	Remove 4'x5' Metal Hatch on top of Concrete Pull Box on left abutme	1.00	CY	1,749	1,749	-	175	19	1,038	2,981	3,353
11			Remove Reservoir Level Gauge House on Dam Crest	24.00	SF	139	3,338	-	334	37	1,980	5,688	6,399
11			Downstream Riprap	2,200	CY	14	30,909	-	3,091	340	18,335	52,674	59,252
11			Jpstream Riprap	1,300	CY	17	21,837	-	2,184	240	12,954	37,214	41,861
11			Ascellaneous Excavation (Dam Earth Section)	132,500	CY	7	942,102	-	94,210	10,363	558,857	1,605,533	1,806,006
11	1.021	JC Boyle Dam Removal	Cutoff Wall Concrete Demolition	70.00	CY	126	8,829	-	883	97	5,237	15,046	16,925
11	1.022	JC Boyle Dam Removal	Cuttoff Wall Anchors	285	EA	19	5,322	-	532	59	3,157	9,069	10,202
11	1.023	JC Boyle Dam Removal	Remove & Dispose Hand Rails and Light Poles	5,000	LBS	1	3,917	-	392	43	2,324	6,675	7,509
11	1.024	JC Boyle Dam Removal	Remove & Dispose Spillway Radial Gates and Hoists	124,000	LBS	0	52,024	-	5,202	572	30,861	88,659	99,729
11			Remove & Dispose Stop Logs and Slots (steel)	92,000	LBS	0	40,649	-	4,065	447	24,113	69,274	77,924
11		-	Remove & Dispose of 24" Slide Gate at Entrance to Fish Ladder Str	4,200	LBS	1	5,442	-	544	60	3,228	9,275	10,433
		-	Remove petroleum products from Red Bam Area	1,600	GAL	12	18,961	-	1,896	209	11,248	32,313	36,348
11			Remove & Dispose of Spillway gate motor & control panel	1.00	EA	1,151	1,151	-	115	13	683	1,962	2,207
11			Remove & Dispose of Distribution equipment, panelboards	1.00	EA	3,726	3,726	-	373	41	2,210	6,350	7,143
11			Remove Powerhouse Concrete down to Elevation 3324.0	1,500	CY	234	351,185	-	35,118	3,863	208,324	598,490	673,220
11			Remove Structural Steel Item associated with Powerhouse	94,000	LBS	1	52,405	-	5,241	576	31,087	89,310	100,461
11		-	Remove Warehouse near Powerhouse	5,060	SF	15	75,002	-	7,500	825	44,491	127,818	143,778
11			Remove & Dispose of 2 - Governor oil systems	52,500	LBS	1	50,951	-	5,095	560	30,224	86,831	97,673
11			Remove & Dispose of Cooling water and bearing oil systems	6,500	LBS	1	7,395	-	740	81	4,387	12,603	14,177
11			Remove & Dispose of 2 - Francis Turbines	560,000	LBS	0	261,076	-	26,108	2,872	154,871	444,927	500,482
11			Remove & Dispose of 150 Ton crane	240,000	LBS	0	102,116	-	10,212	1,123	60,575	174,026	195,756
11			Remove & Dispose of Compressed Air systems	1,100	LBS	1	965	-	96	11	572	1,644	1,850
11	1.037		Remove & Dispose of 2 - CO2 systems	6,600	LBS	1	4,520 1,632	-	452 163	50 18	2,681 968	7,702 2,782	8,664 3,129
11		JC Boyle Dam Removal	Remove & Dispose of Plant Water and Fire Protection	3,100									

	KC C	Cost Estimate - Full Removal										J	luly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
ID	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
41	1.039	JC Boyle Dam Removal	Remove & Dispose of Transformer Oil Fire Protection	6,500	LBS	1	3,781	-	378	42	2,243	6,444	7,248
41	1.040	JC Boyle Dam Removal	Remove & Dispose of Unwatering Piping	33,000	LBS	0	15,783	-	1,578	174	9,362	26,897	30,255
41	1.041	JC Boyle Dam Removal	Remove & Dispose of Drainage Piping	10,000	LBS	1	5,255	-	525	58	3,117	8,956	10,074
41	1.042	JC Boyle Dam Removal	Remove & Dispose of 2-Oil Sump pumps	2,000	LBS	1	2,053	-	205	23	1,218	3,499	3,936
41	1.043	JC Boyle Dam Removal	Remove & Dispose of Draft Tube Bulk Head Gates and Hoists at the	65,000	LBS	0	23,704	-	2,370	261	14,061	40,396	45,440
41	1.043a	JC Boyle Dam Removal	Remove petroleum products from Mechanical Equipment	2,700	GAL	12	33,278	-	3,328	366	19,740	56,712	63,793
41	1.044	JC Boyle Dam Removal	Remove & Dispose of Outdoor Vertical AC Generator, Unit 1: 53 MV	2.00	EA	52,105	104,211	-	10,421	1,146	61,818	177,596	199,771
41	1.045	-	Remove & Dispose of Excitation equipment for 53/50 MVA Generator	2.00	EA	10,372	20,744	-	2,074	228	12,306	35,352	39,767
41	1.046		Remove & Dispose of Surge protection equip. for 53/50 MVA General	2.00	EA	5,719	11,438	-	1,144	126	6,785	19,492	21,926
41	1.047		Remove & Dispose of Neutral grounding equip. for 53/50 MVA Gene	2.00	EA	2,259	4,517	-	452	50	2,680	7,699	8,660
41		JC Boyle Dam Removal	Remove & Dispose of Generator Switchgear, 15kV - (6 sections)	1.00	EA	14,213	14,213	-	1,421	156	8,431	24,221	27,246
41		JC Boyle Dam Removal	Remove & Dispose of Station Service Switchgear, 600 volt - (5 section Service Switchgear)	1.00	EA	7,794	7,794	-	779	86	4,623	13,282	14,941
41	1.050	JC Boyle Dam Removal	Remove & Dispose of Unit and plant control switchboard	1.00	EA	4,117	4,117	-	412	45	2,442	7,016	7,892
41	1.051	JC Boyle Dam Removal	Remove & Dispose - Battery system	1.00	EA	6,515	6,515	-	652	72	3,865	11,103	12,489
41	1.052	JC Boyle Dam Removal	Remove & Dispose of Raceways, Conduit and Cable	1.00	EA	9,227	9,227	-	923	101	5,473	15,724	17,688
41	1.053	JC Boyle Dam Removal	Remove & Dispose of Misc. power & control boards	1.00	EA	8,287	8,287	-	829	91	4,916	14,123	15,886
41	1.054	JC Boyle Dam Removal	Remove & Dispose of 5 Gantry Crane motors - hoist (50Hp*), aux hoi	1.00	EA	851	851	-	85	9	505	1,450	1,631
41	1.055	-	Remove & Dispose of Gantry Crane control equipment (3 cubicles)	1.00	EA	2,503	2,503	-	250	28	1,485	4,265	4,798
41	1.056	<u> </u>	Remove & Dispose of Conduit and Cable	1.00	EA	5,957	5,957		596	66	3,534	10,152	11,420
41	1.057	JC Boyle Dam Removal	Remove & Dispose of Exterior Lighting	1.00	EA	7,198	7,198		720	79	4,270	12,267	13,798
41	1.058	-	Remove & Dispose of Transmission Line No. 59	1.66	Mile	27,223	45,191	-	4,519	497	26,807	77,014	86,630
41	1.059	<u> </u>	Remove & Dispose of Transmission Line No. 98	0.24	Mile	21,481	5,155	-	516	57	3,058	8,786	9,883
41	1.060	-	Remove & Dispose of Transmission Line No. 58	1.66	Mile	20,644	34,269	-	3,427	377	20,328	58,401	65,693
41	1.061	JC Boyle Dam Removal	Remove Intake Structure Concrete	1,610	CY	169	272,772	-	27,277	3,000	161,809	464,860	522,904
41	1.062	JC Boyle Dam Removal	Remove Fish Screen Building	2,010	SF	22	44,683	<u> </u>	4,468	492	26,506	76,149	85,657
41	1.063	JC Boyle Dam Removal	Remove 24" Steel Fish Discahrge Pipe	37,978	LBS	0	8,563		856	94	5,080	14,594	16,416
41	1.064	-	Remove Concrete Items associated with the 14-ft-diameter Steel Pip	1,100	CY	112	122,740	-	12,274	1,350	72,810	209,174	235,293
41			Remove Open Concrete Flume	26,300	CY	106	2,794,622		279,462 36,638	30,741 4,030	1,657,777 217,337	4,762,603 624,384	5,357,280 702,348
41		JC Boyle Dam Removal	Power Canal Backfill	63,519		-	366,379						
41		2 JC Boyle Dam Removal	Power Canal Backfill Trucking From Disposal Site	39,144 11,500	CY LBS	6	244,385 2,492	-	24,439 249	2,688 27	144,970 1,478	416,482 4,247	468,486 4,777
41	1.066	JC Boyle Dam Removal	Remove Structural Steel items associated with Forebay Trash Rack		CY	105			26,512	2,916	1,478	451,824	508,241
41	1.067	JC Boyle Dam Removal	Remove Forebay Concrete	2,520	CY		265,124			1,782	96,083		
41	1.068		Place Concrete Plugs at Tunnel Portals	75.00 1,800	CY	2,160 105	161,972 189,288		16,197 18,929	2,082	112,286	276,034 322,585	310,501 362,864
41		-	Remove Concrete Items associated with Penstocks D/S from Tunne	500	SF	16	7,975		798	2,082	4,731	13,591	15,288
41		JC Boyle Dam Removal	Remove Head gate Control Building at Flume Entrance	610	SF	15	9,315		931	102	5,525	15,874	17,856
41 41		JC Boyle Dam Removal	Remove Fore bay Spillway Gate House	560	SF	22	12,082		1,208	133	7,167	20,591	23,162
41	1.072		Remove Fore bay Control Building	90.00	SF	17	1,565		1,208	17	929	2,668	3,001
41	1.074	JC Boyle Dam Removal JC Boyle Dam Removal	Remove Insulated Generator Building next to Fore bay Control Building Remove Fixed Wheel Gate (Gate, Frame, and Hoist)	55,000	LBS	0	20,109	-	2,011	221	11,929	34,270	38,549
41	1.075	<u> </u>	Remove Trash rack and trash rake (steel)	75.000	LBS	0	35.538		3.554	391	21.081	60,565	68.127
41			Remove Stop Logs and Slots (steel)	136,000	LBS	0	57,720	-	5,772	635	34,240	98,367	110,649
41	1.077		Remove Traveling Water Screen	124,000	LBS	0	48,607	-	4,861	535	28,834	82,837	93,180
41	1.078	JC Boyle Dam Removal	Remove Fish By-Pass and Supports (steel)	610.000	Ib	0	146,159		14,616	1,608	86.702	249.085	280.187
41	1.080		Remove Gates and Hoists	18,500	LBS	0	6,285		628	69	3,728	10,710	12,047
41	1.080	JC Boyle Dam Removal	Remove Trash rack and trash rake (steel)	47,249	LBS	0	21,336	-	2,134	235	12.657	36,361	40.901
41		JC Boyle Dam Removal	Remove stop Logs and slots (steel)	37.069	LBS	1	20,925		2,092	230	12,037	35,660	40,301
41	1.082	-	Remove & Dispose 14' Diversion Pipe	484,200	LBS	1	650,032		65,003	7,150	385,601	1,107,786	1,246,108
41	1.083.1	<u> </u>	Remove & Dispose 14 Diversion Fipe Remove & Dispose 9'-6" to 10'-6" Penstocks	953,250	LBS	1	770,240		77,024	8,473	456,908	1,312,645	1,476,547
41	1.083.1	JC Boyle Dam Removal	Remove & Dispose Surge Tank (steel)	79,000	LBS	1	61,152		6,115	673	36,276	104,216	117,229
41	1.085	-	Remove & Dispose 3 dige 1 alik (steer) Remove & Dispose 2 - 108" Butterfly valves	148,000	LBS	1	78,546		7,855	864	46,594	133,858	150,572
41	1.086	JC Boyle Dam Removal	Remove & Dispose Gate, Stem and Frame	28,000	LBS	1	20,823		2,082	229	12.352	35,486	39,917
41			Remove & Dispose Gate, Stell and Flame Remove & Dispose of Steel Transition Manifolds on Upstream and I	250,000	LBS	0	87,446		8,745	962	51,873	149,026	167,634
41		JC Boyle Dam Removal	Remove petroleum products from Mechanical Equipment	380	GAL	18	6,860		686	75	4,069	11,691	13,151
41	1.088	JC Boyle Dam Removal	Install and Remove Temporary Access Roads for Penstock Demo	2.00	Mile	84,017	168,035	-	16,803	1,848	99,679	286,365	322,122
41	1.000	JC Boyle Dam Removal	Clear and Grub Disposal Area (Embankment)	10.00	AC	3,151	31,509	-	3,151	347	18,691	53,698	60,403
41	1.098	-	Clear and Grub, 40' width for Haul Roads	2.40	AC	3,183	7,639	-	764	84	4,531	13,018	14,643
41		JC Boyle Dam Removal	Soil/ Rock Cover Relocation For Concrete Rubble at Scour Hole	13,000	CY	17	220,690	-	22,069	2,428	130,914	376,100	423,061
41		JC Boyle Dam Removal	Rock/Soil Cover Placement Over Concrete Rubble at Scour Hole	13,000	CY	6	73,673	-	7,367	810	43,703	125,554	141,231
41		JC Boyle Dam Removal	Process Demolished Concrete for Scour Hole	55,900	CY	12	657,398	-	65,740	7,231	389,970	1,120,339	1,260,229
e 1		JC Boyle Dam Removal	Haul Road Construction for Scour Hole Backfill	10,000	CY	25	247,780		24,778	2,726	146,984	422,268	474,994
41		2 JC Boyle Dam Removal	Backfilling Scour Hole With Processed Concrete	55,900	CY	4	245,052	-	24,505	2,696	145,366	417,619	469,764
41 41	1 107 2					7	0,002		2.,000			,	
41				3,540	CY	32	114.590	-	11.459	1,260	67.975	195.284	219.668
	1.107.3	JC Boyle Dam Removal JC Boyle Dam Removal	Scour Hole Backfill Haul Road Restoration Topsy Recreational Area - Concrete total	3,540 68.00	CY	32 77	114,590 5.222		11,459 522	1,260 57	67,975 3.098	195,284 8,900	219,668 10.011

		ost Estimate - Full Removal											July 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
1	1.110	JC Boyle Dam Removal	Topsy Recreational Area - 5'x20' Walkway leading to hex fishing plat	200	SF	7	1,487	-	149	16	882	2,534	2,85
1	1.111	JC Boyle Dam Removal	Topsy Recreational Area - Regrade to natural contour	300	SF	7	2,109	-	211	23	1,251	3,595	4,04
1	1.112	JC Boyle Dam Removal	Pioneer Park - Picnic tables to be removed and hauled away	12.00	EA	153	1,831	-	183	20	1,086	3,121	3,51
1	1.113	JC Boyle Dam Removal	Pioneer Park - 12 Concrete fire rings	5.00	CY	89	444	-	44	5	263	756	85
1	1.114	JC Boyle Dam Removal	Pioneer Park - Portable toilets to be removed and hauled away	2.00	EA	105	210	-	21	2	124	357	40:
1			Pioneer Park - Signs to be removed and hauled away	6.00	EA	115	687	-	69	8	408	1,172	1,31
1			Pioneer Park - Dumpster to be removed and hauled away	1.00	EA	1,126	1,126	-	113	12	668	1,919	2,15
1			Pioneer Park - Regrade to natural contour	0.50	AC	8,438	4,219	-	422	46	2,503	7,190	8,08
1		JC Boyle Dam Removal	Remove Frame dead end structures 60-80 ft high	2.00	EA	10,715	21,430	-	2,143	236	12,713	36,522	41,082
1		JC Boyle Dam Removal	Remove (incl foundation) and Save Transformers 230KV	2.00	EA	3,058	6,117	_	612	67	3,628	10,424	11,726
1		JC Boyle Dam Removal	Remove (incl foundation) and Save Power Circuit Breakers 230KV	2.00	EA	3,909	7,818	_	782	86	4,637	13,323	14,986
				-	-	-	7,010	-	-	-	-,007	-	14,500
1		JC Boyle Dam Removal	[PacifiCorp Cover] Substation Tie Structure 230KV	601	LF	17	10,206	-	1,021	112	6,054	17,394	19,566
1		JC Boyle Dam Removal	Remove Chain Link Fence		EA	1,764			7,938	873	47,086		
1			Demolish overhead distribution 2.5 miles (30-45 poles)	45.00		1,764	79,376					135,272	152,163
1		JC Boyle Dam Removal	[PacifiCorp Cover] Install 230kV strain transmission structures outsi		-	•		-	-	-		-	-
1		JC Boyle Dam Removal	Upstream Cofferdam to be Removed in the Wet	14,450	CY	16	238,147	-	23,815	2,620	141,269	405,851	456,527
		Reserv oir Area Improvements											
		Copco 1 & 2											
2	-	Tributary Connectivity	Removal of sediment and similar obstructions to ensure volitional fi	7.00	EA	119,000	833,000	-	83,300	9,163	39,165	964,628	1,085,075
2	-	Wetlands, Floodplain and Off-channel Habitat Features Site 1 (11.2	Equipment & road access into site	3,000	LF	25	75,000	-	7,500	825	3,526	86,851	97,696
2	-	Wetlands, Floodplain and Off-channel Habitat Features Site 1 (11.2	Grading and shaping of floodplain sediments (no export)	81,367	CY	8	650,936	-	65,094	7,160	30,605	753,795	847,917
2		Wetlands, Floodplain and Off-channel Habitat Features Site 1 (11.2		5.60	AC	30,000	168,000	-	16,800	1,848	7,899	194,547	218,839
2		Site 2 (25.5 acres)	Equipment & road access into site	3,000	LF	25	75,000	-	7,500	825	3,526	86,851	97,696
2		Site 2 (25.5 acres)	Grading and shaping of floodplain sediments (no export)	164,252	CY	8	1,314,016	-	131,402	14,454	61,781	1,521,653	1,711,652
2		Site 2 (25.5 acres)	Floodplain roughness for 50% of area	12.75	AC	30,000	382,500	-	38,250	4,208	17,984	442,941	498,249
2		Site 3 (13.9 acres)	Equipment & road access into site	3,000	LF	25	75,000	_	7,500	825	3,526	86,851	97,696
2		Site 3 (13.9 acres)	Grading and shaping of floodplain sediments (no export)	78,556	CY	8	628,448	-	62,845	6,913	29,548	727,753	818,623
				6.95	AC	30,000	208,500	_	20,850	2,294	9,803	241,446	271,594
2		Site 3 (13.9 acres)	Floodplain roughness for 50% of area	3,000	LF	25	75,000		7,500	825	3,526	86,851	97,696
2			Equipment & road access into site	50,600	CY		404.800	-	40,480	4,453	19,032	468.765	527,297
2		Site 4 (10.5 acres)	Grading and shaping of floodplain sediments (no export)			8	. ,						
2		Site 4 (10.5 acres)	Floodplain roughness for 50% of area	5.25	AC	30,000	157,500	-	15,750	1,733	7,405	182,388	205,161
2		Site 5 (4.2 acres)	Equipment & road access into site	3,000	LF	25	75,000	-	7,500	825	3,526	86,851	97,696
2		Site 5 (4.2 acres)	Grading and shaping of floodplain sediments (no export)	20,267	CY	8	162,136	-	16,214	1,783	7,623	187,756	211,200
2	-	Site 5 (4.2 acres)	Floodplain roughness for 50% of area	2.10	AC	30,000	63,000	-	6,300	693	2,962	72,955	82,065
2	-	Site 6 (5.3 acres)	Equipment & road access into site	3,000	LF	25	75,000	-	7,500	825	3,526	86,851	97,696
2	-	Site 6 (5.3 acres)	Grading and shaping of floodplain sediments (no export)	17,148	CY	8	137,184	-	13,718	1,509	6,450	158,861	178,697
2	-	Site 6 (5.3 acres)	Floodplain roughness for 50% of area	2.65	AC	30,000	79,500	-	7,950	875	3,738	92,062	103,558
2	-	Bank Stability and Channel Fringe Complexity	Bank Stability and Channel Fringe ComplexityDevelop process-base	2,500	LF	253	632,500	-	63,250	6,958	29,738	732,446	823,902
2	-	Large Wood Habitat Features	Ground-Based Placement	20.00	EA	27,990	559,800	-	55,980	6,158	26,320	648,258	729,202
2	-	Large Wood Habitat Features	Helicopter Placement (@ 50 members staged and placed per site)	8.00	EA	57,000	456,000	-	45,600	5,016	21,440	528,056	593,991
2		Habitat Restoration at dam footprint	Grading and shaping of floodplain sediments (no export)	8.00	EA	46,875	375,000	-	37,500	4,125	17,631	434,256	488,479
		Iron Gate	and anaping or necessari ocuments (no expert)			,	,		2.,230	.,5	.,	2 :,230	,
2		Tributary Connectivity	Removal of sediment and similar obstructions to ensure volitional fi	5.00	EA	119.000	595.000	_	59,500	6,545	27,975	689.020	775.054
2		Site 1 (14.2 acres)	Equipment & road access into site	3,000	LF	25	75,000		7,500	825	3,526	86,851	97,696
2		Site 1 (14.2 acres)		60.000	CY	8	480.000		48.000	5.280	22.568	555.848	625,253
			Grading and shaping of floodplain sediments (no export)	7.10	AC	30,000	213.000	-	21,300	2.343	10.015	246.658	277.456
2			Floodplain roughness for 50% of area		LF		-7		,	7	-,	-7	,
2		Site 2 (5.8 acres)	Equipment & road access into site	3,000		25	75,000	-	7,500	825	3,526	86,851	97,696
2		Site 2 (5.8 acres)	Grading and shaping of floodplain sediments (no export)	19,000	CY	8	152,000	-	15,200	1,672	7,147	176,019	197,997
2		Site 2 (5.8 acres)	Floodplain roughness for 50% of area	2.90	AC	30,000	87,000	-	8,700	957	4,090	100,747	113,327
2		Site 3 (23.1 acres)	Equipment & road access into site	2,000	LF	25	50,000	-	5,000	550	2,351	57,901	65,131
2		Site 3 (23.1 acres)	Grading and shaping of floodplain sediments (no export)	95,000	CY	8	760,000	-	76,000	8,360	35,733	880,093	989,985
2	-	Site 3 (23.1 acres)	Floodplain roughness for 75% of area	17.30	AC	30,000	519,000	-	51,900	5,709	24,402	601,011	676,055
2	-	Bank Stability and Channel Fringe Complexity	Develop process-based restoration and velocity variations along bar	1,000	LF	253	253,000	-	25,300	2,783	11,895	292,978	329,561
2	-	Large Wood Habitat Features	Ground-Based Placement	20.00	EA	27,990	559,800	-	55,980	6,158	26,320	648,258	729,202
2		Large Wood Habitat Features	Helicopter Placement (@ 50 members staged and placed per site)	4.00	EA	57,000	228,000	-	22,800	2,508	10,720	264,028	296,995
2		Habitat Restoration at dam footprint	Grading and shaping of floodplain sediments (no export)	8.00	EA	31,250	250,000	-	25,000	2,750	11,754	289,504	325,653
		JC Boyle	g sport										
2		Tributary Connectivity	Removal of sediment and similar obstructions to ensure volitional fi	2.00	EA	119,000	238.000	-	23.800	2.618	11,190	275.608	310.02
2		Site 1 (3.3 acres)	Equipment & road access into site	500	LF	25	12,500	-	1,250	138	588	14,475	16,28
-				37,000	CY	8	296,000	-	29,600	3,256	13,917	342,773	385,573
2		Site 1 (3.3 acres)	Grading and shaping of floodplain sediments (no export)					-					
2		Site 1 (3.3 acres)	Floodplain roughness for 50% of area	1.65	AC	30,000	49,500		4,950	545	2,327	57,322	64,47
2		Site 2 (43.8 acres)	Equipment & road access into site	500	LF	25	12,500	-	1,250	138	588	14,475	16,28
2	-	Site 2 (43.8 acres)	Grading and shaping of floodplain sediments (no export)	35,000	CY	8	280,000	-	28,000	3,080	13,165	324,245	, -
_			Floodplain roughness for 50% of area	21.90	AC	30,000	657,000	-	65,700	7,227	30,890	760,817	855,810

		ost Estimate - Full Removal											July 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	ription	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
				=00		0.5	10.500		1.050	400	500		10.000
2	-		ment & road access into site	500	LF	25	12,500	-	1,250	138	588	14,475	
12	-		ng and shaping of floodplain sediments (no export)	53,000	CY	8	424,000	-	42,400	4,664	19,935	490,999	552,307
2	-		plain roughness for 30% of area	20.00	AC	30,000	600,000	-	60,000	6,600	28,210	694,810	781,567
2	-		ment & road access into site	500	LF	25	12,500	-	1,250	138	588	14,475	16,283
2	-		ng and shaping of floodplain sediments (no export)	17,000	CY	8	136,000	-	13,600	1,496	6,394	157,490	177,155
12	-	Site 4 (21.3 acres) Floodp	plain roughness for 50% of area	10.65	AC	30,000	319,500	-	31,950	3,515	15,022	369,986	416,184
2	-	Bank Stability and Channel Fringe Complexity Develo	op process-based restoration and velocity variations along bar	2,000	LF	253	506,000	-	50,600	5,566	23,790	585,956	659,121
2	-	Large Wood Habitat Features Ground	d-Based Placement	30.00	EA	27,990	839,700	-	83,970	9,237	39,480	972,387	1,093,803
2	-	Large Wood Habitat Features Helico	opter Placement (50 members staged and placed per site)	2.00	EA	57,000	114,000	-	11,400	1,254	5,360	132,014	148,498
12	-	Habitat Restoration at dam footprint Gradin	ng and shaping of floodplain sediments (no export)	8.00	EA	31,250	250,000	-	25,000	2,750	11,754	289,504	325,653
		Reservoir Area Restoration											
		Native Seed Collection											
13	-		Seed collection, preparation, storage	175	LB	1,233	215,783	32,367	24,815	2,730	10,145	285,840	297,274
13	-	Native Seed Collection 2020 5	Seed collection, preparation, storage	175	LB	1,233	215,783	32,367	24,815	2,730	10,145	285,840	309,165
13			Seed collection, preparation, storage	175	LB	1,233	215,783	32,367	24,815	2,730	10,145	285,840	321,531
		Seed Propagation	ood concentry proparation, crorage			,		. ,	,-	,			,,,,
13		- "	Scope 2019	434	LB	85	37.008	5.551	4.256	468	1,740	49.024	50.984
13			Scope 2019	4,343	LB	85	370,082	55,512	42,559	4,682	17,400	490,235	530,239
13	-:-		Scope 2020	38,651	LB	85	3,293,731	494,060	378,779	41,666	154,860	4,363,095	
		Weed Eradication	ουορο 2021	35,301	-20	- 33	5,255,751	.54,000	370,779	,000	.54,550	.,500,030	.,507,508
13	-		Weed Eradication	85.00	AC	2,826	240,217	36,033	27,625	3,039	11,294	318,208	330,936
$\overline{}$				68.00	AC	2,826	192,174	28.826	22,100	2,431	9.035	254,566	275,339
13			Weed Eradication	54.40	AC	2,826	153,739	23,061	17.680	1.945	7,228	203,653	229,082
13	-		Weed Eradication (Dam Mods)	300	AC	2,826	,	127,174	97,500	10,725	39,862	1,123,087	
13	-		Weed Eradication (Drawdown & Dam Removal)	300	AC -	2,826	847,826	127,174		10,725		1,123,087	1,313,853
13	-		Cover] 2023 Weed Eradication			-		-	-		-	-	-
13	-	·	Cover] 2024 Weed Eradication	-	-	-		-		-		-	-
13	-	·	Cover] 2025 Weed Eradication		-	-	-	-	-	•	-	-	-
13			Cover] 2026 Weed Eradication	•	-	-	-	-	-	•	-	-	-
13	-		Cover] 2027 Weed Eradication	-	-	-	-	-	-	-	-	-	-
13	-	Weed Eradication [LTC 0	Cover] 2028 Weed Eradication	•	-	-	-	-	-		-	-	-
		Pioneer Seeding											
13	-	Pioneer Seeding 2022 F	Pioneer Seed	2,500	AC	52	130,435	19,565	15,000	1,650	6,133	172,783	202,131
13	-	Pioneer Seeding 2022 F	Pioneer Seed	250,000	LB	7	1,739,130	260,870	200,000	22,000	81,768	2,303,768	2,695,083
		Container Plant Growing											
13	-	Container Plant Growing 2022 a	and 2023 Pole Cuttings Collection and Short-Term Storage	335,463	EA	3	875,121	131,268	100,639	11,070	41,145	1,159,243	1,383,274
		Emergent Wetland Restoration											
13	-	Emergent Wetland 2022 F	Planting Layout	4.40	AC	261	1,148	172	132	15	54	1,520	1,779
13	-		Transplant/Salvage Ex. Wetland Plants backhoe bucket; Rootl	4,792	EA	10	49,999	7,500	5,750	632	2,351	66,232	77,483
13	-		Root Division Transplants from 1st Yr Transplants (1 plant/10	4,792	EA	13	62,499	9,375	7,187	791	2,939	82,791	100,727
13	-		2023 Construction/Installation Period Maintenance (Assumed	4.40	AC	4,783	21,043	3,157	2,420	266	989	27,876	34,593
		Bank Wetland Restoration	(
13			Transplant/Salvage Ex. Plants with backhoe or frontloader bud	8,480	EA	10	88,408	13,261	10,167	1,118	4,157	117,111	137,003
13			Fall Planting Layout	19.45	AC	261	5.074	761	584	64	239	6,721	7,863
13	-		Soil Preparation (Rolling, Ripping, Tilling, Finish Grading, Am	19.45	AC	65	1,268	190	146	16	60	1,680	1,966
13			Fall Broadcast Seeding of Riparian Native Seed (40 lbs PLS/a	19.45	AC	217	4,228	634	486	53	199	5,601	6.552
13			Planting Layout	19.45	AC	261	5.074	761	584	64	239	6.721	8.177
13			& 2023 Installation of Pole Cuttings (4/100SF Harvested by Co	42,362	EA	4	165,765	24,865	19,063	2,097	7,794	219,583	262,019
13			2023 Construction/Installation Period Maintenance (Assumed	19.45	AC	4,783	93,022	13,953	10,698	1,177	4,374	123,223	147,036
ы		Bank Riperian Restoration	2023 Constituction/installation Fellou Maintenance (Assumed	10.40	710	4,700	30,022	10,000	10,000	1,177	4,014	120,220	147,000
			Tarana land (Oakana Err Blanta with bankta a banka with Bank	45,693	EA	10	476,357	71,454	54,781	6,026	22,397	631,014	738,197
13	-		Transplant/Salvage Ex. Plants with backhoe bucket, with Root	105	AC	48		71,454		63	236		
13	-		Soil Amendments (Mycorrhiza)	105	AC	261	5,012 27,339	4,101	576 3,144	346	1,285	6,639 36,215	7,767 44,061
13	-		Fall Planting Layout							346			
13	-		Soil Preparation (Rolling, Ripping, Tilling, Finish Grading, Am	105	AC	65	6,835	1,025	786		321	9,054	10,592
13	-		Fall Broadcast Seeding of Riparian Native Seed (40 lbs PLS/a	105	AC	217	22,783	3,417	2,620	288	1,071	30,179	35,306
13	-		& 2023 Installation of Pole Cuttings (4/100SF in 2021 and	228,254	EA	4	893,169	133,975	102,714	11,299	41,994	1,183,152	1,411,803
13	-		Deer fence 6' high chainlink with two strands at 7' and 8' in Sel	10,480	LF	33	346,296	51,944	39,824	4,381	16,282	458,726	536,645
13	-		Deer Fence Removal	10,480	LF	6	60,784	9,118	6,990	769	2,858	80,519	119,187
13	-	·	Irrigation	105	AC	3,913	410,087	61,513	47,160	5,188	19,281	543,229	660,921
13	-	Bank Riparian 2022-2	2023 Construction/Installation Period Maintenance (Assumed	105	AC	4,783	501,217	75,183	57,640	6,340	23,566	663,946	792,257
		Floodplain Riperian Restoration											
13	-		Soil Preparation (Rolling, Tilling, Finish Grading,)	149	AC	65	9,714	1,457	1,117	123	457	12,868	15,054
13	-		Amendments (mycorrhizal inoculant to be mixed with seed)	149	AC	48	7,124	1,069	819	90	335	9,437	11,039
13	-		Spring Planting Layout	149	AC	391	58,285	8,743	6,703	737	2,740	77,208	93,935
				149	AC	217	32,380	4,857	3,724	410	1,522	42,893	50,179

17171		ost Estimate - Full Removal											uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
13			2022 Installation of Pole Cuttings (1/100SF Harvested by Contract G	64,942	EA	4	253,889	38,083	29,197	3,212	11,937	336,318	393,444
13	-		2023 Seed Planting Installation	64,942	EA	4	253,889	38,083	29,197	3,212	11,937	336,318	409,182
13			2022 Deer fence 6' high chainlink with two strands at 7' and 8' in Sel	14,895	LF	33	492,183	73,827	56,601	6,226	23,141	651,978	762,722
13			2028 Deer Fence Removal	14,895	LF	6	86,391	12,959	9,935	1,093	4,062	114,439	169,398
13			2022-2023 Construction/Installation Period Maintenance (Assumed	149	AC	4,000	595,800	89,370	68,517	7,537	28,013	789,236	941,761
		Uplands below Rocky Wake Zone Restoration											
13			2022 Soil Preparation (Rolling, Ripping, Tilling, Finish Grading, Am	662	AC	61	40,314	6,047	4,636	510	1,895	53,402	62,473
13			20212Soil Amendments (mycorrhizal inoculant)	662	AC	48	31,675	4,751	3,643	401	1,489	41,959	49,086
13			2023 Spring Planting Layout 2nd Year	662	AC	174	115,183	17,277	13,246	1,457	5,416	152,579	185,635
13			2022 Seeding with Mechanical Power/Sling Seeder and Rake/Harrov	662	AC	217	143,978	21,597	16,558	1,821	6,769	190,723	223,119
13			2023 Seeded Woody Plants with Cocoon Irrigation	2,649	AC	16	41,466	6,220	4,769	525	1,950	54,928	66,829
13			2022 Deer fence 6' high chainlink with two strands at 7' and 8' in Sel	66,230	LF	33	2,188,470	328,270	251,674	27,684	102,895	2,898,993	3,391,412
13			2028 Deer Fence Removal	66,230	LF	6	384,134	57,620	44,175	4,859	18,061	508,850	753,222
13			2022-2023 Construction/Installation Period Maintenance (Assumed	662	AC	4,000	2,649,200	397,380	304,658	33,512	124,557	3,509,307	4,187,501
		Rocky Wake Zone Restoration		40.00	AC	40	2,038	000	00.4	26	00	0.700	0.450
13			2022 Amendments (mycorrhizal inoculant)	42.62 42.62	AC	48 174	7,412	306 1.112	234 852	94	96 348	2,700 9,819	3,159 11.946
13			2023 Spring Planting Layout 2nd Year	42.62	AC	65	2,780	417	320	35	131	3,682	4,307
13			2022 Soil Preparation (Rolling, Tilling, Finish Grading, Amending)	42.62	AC	217	9,265		1,066	117	436	12,273	14,358
13			2022 Seeding with Mechanical Power/Sling Seeder and Rake/Harro	170	AC	16	2,668	1,390 400	307	34	125	3,535	4,301
13			2023 Seeded Woody Plants with Cocoon Irrigation	4,262	LF	33	140,831	21,125	16,196	1,782	6,621	186,555	218,242
13			2022 Deer fence 6' high chainlink with two strands at 7' and 8' in Sel	4,262	LF	6	24,720	3,708	2.843	313	1,162	32.745	48,471
13			2028 Deer fence Removal	42.62	AC	4,000	170,480	25,572	19,605	2,157	8,015	225,829	269,472
13			2022-2023 Construction/Installation Period Maintenance (Assumed	42.02	AC	4,000	170,460	25,572	19,605	2,157	6,015	225,629	209,472
10		Disturbed Uplands above RWZ Restoration	2000 0	122	AC	96	11,673	1,751	1,342	148	549	15,463	18,090
13			2022 Cross-rip compacted areas to 24" depth with buldozer (assume	122	AC	65	7,959	1,751	915	101	374	10,543	12,334
13 13			2022 Soil Preparation (Rolling, Tilling, Finish Grading, Amending)	122	AC	217	26,530	3,980	3,051	336	1,247	35,144	41,113
13			2022 Seeding with Mechanical Power/Sling Seeder and Rake/Harro	12,204	LF	33	403,263	60,489	46,375	5,101	18,960	534,189	624,925
13			2022 Deer fence 6' high chainlink with two strands at 7' and 8' in Sel 2028 Deer fence removal	12,204	LF	6	70,783	10,617	8,140	895	3,328	93,764	138,794
13			2022-2023 Construction/Installation Period Maintenance (Assumed	122	AC	4,000	488,160	73,224	56,138	6,175	22,952	646,649	771,618
+3			2022-2023 Construction/instanation Period Maintenance (Assumed	122	AC	4,000	400,100	73,224	30,130	0,173	22,332	040,043	771,010
13		Upland Stockpiles Restoration Upland Stockpiles	2022 Cross-rip compacted areas to 24" depth with buldozer (assume	48.83	AC	109	5,308	796	610	67	250	7,031	8,225
13			2022 Closs-rip compacted aleas to 24 depth with buildozer (assume 2022 Soil Preparation (Rolling, Tilling, Finish Grading, Amending)	48.83	AC	65	3,185	478	366	40	150	4,218	4,935
13			2022 Seeding with Mechanical Power/Sling Seeder and Rake/Harrov	48.83	AC	217	10,615	1,592	1,221	134	499	14,062	16,450
13			2022 Deer fence 6' high chainlink with two strands at 7' and 8' in Sel	4.883	LF	33	161.351	24,203	18.555	2.041	7.586	213.737	250.042
13			2028 Deer fence removal	4,883	AC	0	283	42	33	4	13	375	555
13			2022-2023 Construction/Installation Period Maintenance (Assumed	48.83	AC	4,000	195,320	29,298	22,462	2,471	9,183	258,734	308,736
13		Undisturbed Uplands Restoration	2022-2023 Construction/instanation Fellod Maintenance (Assumed	40.00	710	4,000	130,020	25,250	22,402	2,471	3,100	200,704	500,750
13			2022 Seeding of weed removal areas w/mech. power/sling seeder a	44.46	AC	217	9,665	1,450	1,112	122	454	12,803	14,978
13			2022-2023 Construction/Installation Period Maintenance (Assumed	44.46	AC	4.000	177,840	26,676	20,452	2.250	8,361	235,579	281,106
10		Yreka Water Line Replacement	2022 2020 Constitution/instantation / Circl Warnerlance / Issumed		1.0	.,	,			_,	-,		
14			Site work	1.00	LS	504,490	504,490	75,673	58,016	6,382	23,719	668,281	722,813
14			Microtunnel	703	LF	4,176		440,388	337,631	37.139	138,037	3,889,116	4.206.468
14			Steel Pipe Line	1,053	LF	749	789,064	118,360	90,742	9,982	37,099	1,045,247	1,130,539
		Transportation Improvements						.,		,	,		
		Bridges - Lakeview											
15			Sheet Pile Coffer Dam For Center Footer	2,400	SF	35	84,187	-	8,419	926	3,958	97,490	105,445
15			Earth Work Coffer Dam Construction for side footers	1,186	LCY	14	16,810	-	1,681	185	790	19,467	21,055
15			Backfill, structural, common earth, 105 H.P. dozer, 50' haul, from exi	89.00	LCY	37	3,288	-	329	36	155	3,808	4,118
15			Structure Excavation (Rock) Drilling and blasting rock, boulders, und	107	BCY	170	18,239	-	1,824	201	858	21,120	22,844
15			Structure Excavation (Type D)	1,122	BCY	19	20,933	-	2,093	230	984	24,241	26,219
15			Structure Excavation (Bridge)	159	BCY	54	8,560	-	856	94	402	9,913	10,722
15			Prestressed concrete piles, square, 40' long, 24" square, priced usi	480	VLFT	150	72,233	-	7,223	795	3,396	83,646	90,472
15			18" Diameter 40' Long Tie Down Anchor Installation	480	VLFT	93	44,433	-	4,443	489	2,089	51,454	55,653
15			Piling special costs, pre-augering for Pile and Tie Down Anchor	960	LF	289	277,047	-	27,705	3,048	13,026	320,825	347,005
15	-		Mobilization, 150 ton, set up and remove crane, with pile leads and	2.00	EA	20,847	41,694	-	4,169	459	1,960	48,282	52,222
15			A736 Barrier Wall	536	LF	360	193,165	-	19,317	2,125	9,082	223,689	241,942
15			Expansion joint, neoprene, liquid, 1" x 2", cold applied	46.00	LF	41	1,907	-	191	21	90	2,208	2,388
15			Columns Structural Concrete includes forms, Grade 60 rebar, concre	172	CY	1,802	309,970	-	30,997	3,410	14,574	358,951	388,241
15			Deck Structural concrete, in place, includes forms, Grade 60 rebar,	168	CY	1,068	179,469	-	17,947	1,974	8,438	207,828	224,787
			Footer Structural concrete, footing, reinforced, includes forms (4 uses	448	CY	388	173,996	-	17,400	1,914	8,181	201,491	217,932
15													5.745
			Approach Slab Structural concrete, in place, 6" thick, includes forms	17.00	CY	268	4,562	-	456	50	215	5,283	5,715
15	-	Bridges - Lakeview	Approach Slab Structural concrete, in place, 6" thick, includes forms Precast 36" I-Girder 65'	17.00 8.00	CY EA	268 26,947	4,562 215,579	-	456 21,558	2,371	215 10,136	5,283 249,645	5,715 270,016

		Cost Estimate - Full Removal											uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
45	-	Bridges - Lakeview	Bridge Demolition	3,917	SF	53	207,758	-	20,776	2,285	9,768	240,587	260,219
45	-	Bridges - Lakeview Paving	Roadway Excavation	510	CY	36	18,449	-	1,845	203	867	21,364	23,107
45	-	Bridges - Lakeview Paving	Imported Borrow	2,510	CY	41	102,146	-	10,215	1,124	4,803	118,287	127,939
45	-	Bridges - Lakeview Paving	Hot Mix Asphalt (Type A)	450	TON	118	52,904	-	5,290	582	2,487	61,264	66,263
45	-	Bridges - Lakeview Paving	Class 2 Aggregate Base	330	CY	59	19,398	-	1,940	213	912	22,464	24,297
45	-	Bridges - Lakeview Paving	Midwest Guardrail System	200	LF	37	7,345	-	735	81	345	8,506	9,200
45	-	Bridges - Lakeview Paving	Transition Railing (Type WB-31)	4.00	EA	3,617	14,470	-	1,447	159	680	16,756	18,123
45	-	Bridges - Lakeview Paving	Alternative Flared Terminal System	2.00	EA	1,809	3,617	-	362	40	170	4,189	4,531
45	-	Bridges - Lakeview Paving	Temporary Reinforced Silt Fence	600	LF	7	4,113	-	411	45	193	4,763	5,152
45	-	Bridges - Lakeview Paving	Temporary Fence (Type ESA)	300	LF	5	1,365	-	136	15	64	1,580	1,709
45	-	Bridges - Lakeview Paving	Temporary Construction Entrance	2.00	EA	3,892	7,783	-	778	86	366	9,013	9,749
45	-	Bridges - Lakeview Paving	Water Pollution Control	0.10	%	192,897	19,290	-	1,929	212	907	22,338	24,161
45	-	Bridges - Lakeview Paving	Roadside Sign - One Post	2.00	EA	244	488	-	49	5	23	566	612
45	-	Bridges - Lakeview Paving	Reset Roadside Sign	4.00	EA	271	1,085	-	109	12	51	1,257	1,359
45	-	Bridges - Lakeview Paving	Relocate Roadside Sign	2.00	EA	90	181	-	18	2	9	209	227
45		Bridges - Lakeview Paving	Thermoplastic Traffic Stripe	660	LF	1	513		51	6	24	594	643
45		*	Type III Barricade	4.00	EA	248	992	-	99	11	47	1,149	1.243
45			Traffic Control System	20.00	Days	904	18,087	-	1,809	199	850	20,945	22,654
45			Temporary Railing (Type K)	300	LF	43	12,751	-	1,275	140	600	14,766	15,971
+U		Bridges - Fall Creek	Temporary Naming (Type N)	550	LI	40	12,731		1,270	140	000	14,700	10,871
45			Otenstan Francisco (Drides)	499	BCY	54	26,865		2,687	296	1,263	31,110	33,649
45	-	Bridges - Fall Creek	Structure Excavation (Bridge)	100	LF	360	36.038		3,604	396	1,203		45.138
45		Bridges - Fall Creek	A736 Barrier Wall	111	CY	1.802	,		20.004	2.200	9,405	41,733	-,
45	-	Bridges - Fall Creek	Columns/Walls Structural Concrete includes forms, Grade 60 rebar,			7	200,039		-7	,		231,649	250,551
45	-	Bridges - Fall Creek	Deck Structural concrete, in place, includes forms, Grade 60 rebar, or	31.00	CY	1,068	33,116	-	3,312	364	1,557	38,349	41,479
45	-	Bridges - Fall Creek	Footer Structural concrete, footing, reinforced, includes forms (4 uses	86.00	CY	388	33,401	-	3,340	367	1,570	38,679	41,835
45	-	Bridges - Fall Creek	Approach Slab Structural concrete, in place, 6" thick, includes forms	22.00	CY	268	5,904		590	65	278	6,837	7,395
45	-	Bridges - Fall Creek	Bridge Demolition	720	SF	53	38,189	-	3,819	420	1,796	44,223	47,832
45	-	Bridges - Fall Creek Paving	Roadway Excavation	720	CY	36	26,045	-	2,605	286	1,225	30,161	32,622
45	-	Bridges - Fall Creek Paving	Imported Borrow	2,380	CY	41	96,856	-	9,686	1,065	4,554	112,160	121,313
45	-	Bridges - Fall Creek Paving	Hot Mix Asphalt (Type A)	230	TON	118	27,040	-	2,704	297	1,271	31,313	33,868
45	-	Bridges - Fall Creek Paving	Class 2 Aggregate Base	170	CY	59	9,993	-	999	110	470	11,572	12,516
45	-	Bridges - Fall Creek Paving	Midwest Guardrail System	100	LF	37	3,673	-	367	40	173	4,253	4,600
45	-	Bridges - Fall Creek Paving	Transition Railing (Type WB-31)	4.00	EA	3,617	14,470	-	1,447	159	680	16,756	18,123
45	-	Bridges - Fall Creek Paving	Alternative Flared Terminal System	2.00	EA	1,809	3,617	-	362	40	170	4,189	4,531
45	-	Bridges - Fall Creek Paving	Relocate Gate	1.00	EA	90	90	-	9	1	4	105	113
45	-	Bridges - Fall Creek Paving	Temporary Reinforced Silt Fence	400	LF	7	2,742	-	274	30	129	3,175	3,434
45	-	Bridges - Fall Creek Paving	Temporary Fence (Type ESA)	400	LF	5	1,820	-	182	20	86	2,107	2,279
45	-	Bridges - Fall Creek Paving	Temporary Hydroseed	280	SQYD	8	2,335	-	233	26	110	2,704	2,924
45	-	Bridges - Fall Creek Paving	Rolled Erosion Control / Jute Mesh	280	SQYD	15	4,208	-	421	46	198	4,873	5,271
45	-		Temporary Fiber Roll	375	LF	7	2.747	-	275	30	129	3.181	3.441
45	-		Temporary Construction Entrance	2.00	EA	3,892	7,783	-	778	86	366	9,013	9,749
45		Bridges - Fall Creek Paving	Water Pollution Control	0.10	%	159,934	15,993		1,599	176	752	18,521	20,032
45			Temporary Traffic Stripe	500	LF	1	543		54	6	26	628	680
45		Bridges - Fall Creek Paving	Thermoplastic Traffic Stripe	275	LF	1	214		21	2	10	248	268
45		Bridges - Fall Creek Paving	Type III Barricade	2.00	EA	248	496	-	50	5	23	574	621
45		Bridges - Fall Creek Paving	Traffic Control System	50.00	Days	904	45,217	-	4.522	497	2.126	52.362	56.635
45	<u> </u>	Bridges - Fall Creek Paving	Temporary Railing (Type K)	200	LF	43	8,501	-	850	94	400	9,844	10,647
70		Bridges - Daggett Road	remperary realing (1 ype re)	200	-1	-70	0,001		550	5-4	400	5,544	10,047
45			Shoot Billo Coffee Dom For Footors	7,200	SF	35	252,561		25,256	2,778	11,875	292,470	316,336
45	-	Bridges - Daggett Road	Sheet Pile Coffer Dam For Footers	91.00	LCY	37	3,362		336	37	158	3,893	4,211
45	-	Bridges - Daggett Road	Backfill, structural, common earth, 105 H.P. dozer, 50' haul, from exi		BCY	170	18,239	-	1,824	201	858	21,120	22.844
45		Bridges - Daggett Road	Structure Excavation (Rock) Drilling and blasting rock, boulders, und	107				-					
45	-		Structure Excavation (Type D)	1,535	BCY	19	28,638	-	2,864	315	1,346	33,164	35,870
45	-	Bridges - Daggett Road	Structure Excavation (Bridge)	171	BCY	54	9,206	-	921	101	433	10,661	11,531
45	-	Bridges - Daggett Road	Prestressed concrete piles, square, 40' long, 24" square, priced using	480	VLFT	150	72,233		7,223	795	3,396	83,646	90,472
45	-	Bridges - Daggett Road	18" Diameter 40' Long Tie Down Anchor Installation	480	VLFT	93	44,433	-	4,443	489	2,089	51,454	55,653
45	-	Bridges - Daggett Road	Piling special costs, pre-augering for Pile and Tie Down Anchor	960	LF	289	277,047	-	27,705	3,048	13,026	320,825	347,005
45	-	Bridges - Daggett Road	Mobilization, 150 ton, set up and remove crane, with pile leads and p	2.00	EA	20,847	41,694	-	4,169	459	1,960	48,282	52,222
45	-	Bridges - Daggett Road	A736 Barrier Wall	530	LF	360	191,003	-	19,100	2,101	8,980	221,185	239,233
45	-	Bridges - Daggett Road	Expansion joint, neoprene, liquid, 1" x 2", cold applied	46.00	LF	41	1,907	-	191	21	90	2,208	2,388
45	-	Bridges - Daggett Road	Columns Structural Concrete includes forms, Grade 60 rebar, concre	157	CY	1,802	282,938	-	28,294	3,112	13,303	327,647	354,383
45	-	Bridges - Daggett Road	Deck Structural concrete, in place, includes forms, Grade 60 rebar,	167	CY	1,068	178,401	-	17,840	1,962	8,388	206,591	223,449
		Bridges - Daggett Road	Footer Structural concrete, footing, reinforced, includes forms (4 uses	448	CY	388	173,996	-	17,400	1,914	8,181	201,491	217,932
45	-												
			Approach Slab Structural concrete, in place, 6" thick, includes forms	17.00	CY	268	4,562	-	456	50	215	5,283	5,715

NΚ	KC C	Cost Estimate - Full Removal											July 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
ID	Sheet	t Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
							I						
45	-	Bridges - Daggett Road	Precast 36" I-Girder 48'	8.00	EA	33,484		-	26,787	2,947	12,595	310,201	
45	-	Bridges - Daggett Road	Bridge Demolition	3,262	SF	53	173,016	-	17,302	1,903	8,135	200,356	216,705
45	-	Bridges - Daggett Road Paving	Roadway Excavation	1,500	CY	36	54,261	-	5,426	597	2,551	62,835	
45	-	Bridges - Daggett Road Paving	Imported Borrow	5,500	CY	41	223,826	-	22,383	2,462	10,524	259,194	
45	-	Bridges - Daggett Road Paving	Hot Mix Asphalt (Type A)	1,240	TON	118	145,781	-	14,578	1,604	6,854	168,817	182,592
45	-	Bridges - Daggett Road Paving	Class 2 Aggregate Base	920	CY	59	54,080	-	5,408	595	2,543	62,626	67,736
45	-	Bridges - Daggett Road Paving	Remove Base and Surfacing	9,485	SF	5		-	5,147	566	2,420	59,599	
45	-	Bridges - Daggett Road Paving	Midwest Guardrail System	200	LF	37	7,345	-	735	81	345	8,506	9,200
45	-	Bridges - Daggett Road Paving	Transition Railing (Type WB-31)	4.00	EA	3,617	14,470	-	1,447	159	680	16,756	
45	-	Bridges - Daggett Road Paving	Alternative Flared Terminal System	2.00	EA	1,809		-	362	40	170	4,189	4,531
45	-	Bridges - Daggett Road Paving	Temporary Reinforced Silt Fence	1,000	LF	7	6,855	-	685	75	322	7,938	8,586
45	-	Bridges - Daggett Road Paving	Temporary Fence (Type ESA)	1,000	LF	5		-	455	50	214	5,268	5,698
45	-	Bridges - Daggett Road Paving	Temporary Hydroseed	1,200	SQYD	8		-	1,001	110	470	11,587	12,532
45	-	Bridges - Daggett Road Paving	Rolled Erosion Control / Jute Mesh	1,200	SQYD	15	18,036	-	1,804	198	848	20,886	22,591
45	-	Bridges - Daggett Road Paving	Temporary Fiber Roll	1,100	LF	7	8,058	-	806	89	379	9,331	10,092
45	-	Bridges - Daggett Road Paving	Temporary Construction Entrance	1.00	EA	3,892		-	389	43	183	4,507	4,874
45	-	Bridges - Daggett Road Paving	Water Pollution Control	0.10	%	529,414	- 1-	-	5,294	582	2,489	61,307	66,310
45	-	Bridges - Daggett Road Paving	Roadside Sign - One Post	1.00	EA	244	244	-	24	3	11	283	306
45	-	Bridges - Daggett Road Paving	Remove Roadside Sign	2.00	EA	90	181	-	18	2	9	209	
45	-	Bridges - Daggett Road Paving	Reset Roadside Sign	2.00	EA	271	543	-	54	6	26	628	
45	-	Bridges - Daggett Road Paving	Thermoplastic Traffic Stripe	2,020	LF	1	1,571	-	157	17	74	1,819	
45	-	Bridges - Daggett Road Paving	Type III Barricade	2.00	EA	248	496	-	50	5	23	574	621
45	-	Bridges - Daggett Road Paving	Traffic Control System	15.00	Days	904	13,565	-	1,357	149	638	15,709	16,991
45	-	Bridges - Daggett Road Paving	Temporary Railing (Type K)	120	LF	43	5,101	-	510	56	240	5,906	6,388
		Bridges - Dry Creek											
45	-	Bridges - Dry Creek	Temporary Bridge	1,015	SF	186	188,425	-	18,842	2,073	8,859	218,199	236,004
45	-	Bridges - Dry Creek Paving	Roadway Excavation	700	CY	36	25,322	-	2,532	279	1,191	29,323	31,716
45	-	Bridges - Dry Creek Paving	Imported Borrow	1,000	CY	41	40,696	-	4,070	448	1,913	47,126	
45	-	Bridges - Dry Creek Paving	Hot Mix Asphalt (Type A)	600	TON	118	70,539	-	7,054	776	3,317	81,685	88,351
45	-	Bridges - Dry Creek Paving	Class 2 Aggregate Base	380	CY	59	22,337	-	2,234	246	1,050	25,867	27,978
45	-	Bridges - Dry Creek Paving	Mdwest Guardrail System	100	LF	37	3,673	-	367	40	173	4,253	4,600
45	-	Bridges - Dry Creek Paving	Transition Railing (Type WB-31)	4.00	EA	3,617	14,470	-	1,447	159	680	16,756	18,123
45	-	Bridges - Dry Creek Paving	Alternative Flared Terminal System	2.00	EA	1,809		-	362	40	170	4,189	4,531
45	-	Bridges - Dry Creek Paving	Temporary Reinforced Silt Fence	400	LF	7	2,742	-	274	30	129	3,175	3,434
45	-	Bridges - Dry Creek Paving	Temporary Fence (Type ESA)	400	LF	5		-	182	20	86	2,107	2,279
45	-	Bridges - Dry Creek Paving	Temporary Hydroseed	550	SQYD	8	4,586	-	459	50	216	5,311	5,744
45	-	Bridges - Dry Creek Paving	Rolled Erosion Control / Jute Mesh	550	SQYD	15	8,267	-	827	91	389	9,573	10,354
45	-	Bridges - Dry Creek Paving	Temporary Fiber Roll	1,000	LF	7	7,325	-	733	81	344	8,483	9,175
45	-	Bridges - Dry Creek Paving	Temporary Construction Entrance	2.00	EA	3,892		-	778	86	366	9,013	9,749
45	-	Bridges - Dry Creek Paving	Water Pollution Control	0.10	%	158,894		-	1,589	175	747	18,400	19,902
45	-	Bridges - Dry Creek Paving	Thermoplastic Traffic Stripe	650	LF	1	506	-	51	6	24	585	633
45	-	Bridges - Dry Creek Paving	Portable Changeable Message Signs	2.00	EA	2,713		-	543	60	255	6,283	6,796
45	-	Bridges - Dry Creek Paving	Type III Barricade	2.00	EA	248	496	-	50	5	23	574	621
45	-	Bridges - Dry Creek Paving	Traffic Control System	20.00	Days	904	18,087	-	1,809	199	850	20,945	22,654
45	-	Bridges - Dry Creek Paving	Temporary Railing (Type K)	200	LF	43	8,501	-	850	94	400	9,844	10,647
45	-	Bridges - Dry Creek Temp Detour	Roadway Excavation	1,200	CY	36	43,409	-	4,341	477	2,041	50,268	54,370
45	-	Bridges - Dry Creek Temp Detour	Ditch Excavation	40.00	CY	32	1,266	-	127	14	60	1,466	1,586
45	-	Bridges - Dry Creek Temp Detour	Imported Borrow	1,620	CY	41	65,927	-	6,593	725	3,100	76,345	82,574
45	-	Bridges - Dry Creek Temp Detour	Hot Mix Asphalt (Type A)	530	TON	118	62,310		6,231	685	2,930	72,156	
45	-	Bridges - Dry Creek Temp Detour	Class 2 Aggregate Base	400	CY	59	23,513	-	2,351	259	1,106	27,228	29,450
45	-	Bridges - Dry Creek Temp Detour	Midwest Guardrail System	100	LF	37	3,673	-	367	40	173	4,253	4,600
45	-	Bridges - Dry Creek Temp Detour	Transition Railing (Type WB-31)	4.00	EA	3,617		-	1,447	159	680	16,756	
45	-	Bridges - Dry Creek Temp Detour	Alternative Flared Terminal System	2.00	EA	1,809		-	362	40	170	4,189	
45	-	Bridges - Dry Creek Temp Detour	Temporary Reinforced Silt Fence	400	LF	7	2,742	-	274	30	129	3,175	3,434
45	-	Bridges - Dry Creek Temp Detour	Temporary Fence (Type ESA)	400	LF	5			182	20	86	2,107	2,279
45	-	Bridges - Dry Creek Temp Detour	Temporary Hydroseed	320	SQYD	8	2,668	-	267	29	125	3,090	3,342
45	-	Bridges - Dry Creek Temp Detour	Rolled Erosion Control / Jute Mesh	320	SQYD	15	4,810	-	481	53	226	5,570	6,024
45	-	Bridges - Dry Creek Temp Detour	Temporary Fiber Roll	400	LF	7	2,930	-	293	32	138	3,393	3,670
45	-	Bridges - Dry Creek Temp Detour	Temporary Construction Entrance	2.00	EA	3,892		-	778	86	366	9,013	9,749
45	-	Bridges - Dry Creek Temp Detour	Water Pollution Control	0.10	%	196,424	19,642	-	1,964	216	924	22,746	24,602
45	-	Bridges - Dry Creek Temp Detour	Construction Area Signs	1.00	LS	1,739		-	174	19	82	2,014	2,178
45	-	Bridges - Dry Creek Temp Detour	Temporary Traffic Stripe	620	LF	1	673	-	67	7	32	779	843
45	-	Bridges - Dry Creek Temp Detour	Type III Barricade	2.00	EA	248	496	-	50	5	23	575	
45		Bridges - Dry Creek Temp Detour	Traffic Control System	5.00	Days	904	4,522	-	452	50	213	5,236	5,664

		Cost Estimate - Full Removal											luly 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
5	-	Bridges - Dry Creek Temp Detour	Temporary Railing (Type K)	160	LF	43	6,801	-	680	75	320	7,875	8,518
		Bridges - Camp Creek											
5	-	Bridges - Camp Creek	Earth Work Coffer Dam Construction for side footers	1,186	LCY	14	16,810	-	1,681	185	790	19,467	21,055
5	-	Bridges - Camp Creek	Backfill, structural, common earth, 105 H.P. dozer, 50' haul, from exi	420	LCY	37	15,517	-	1,552	171	730	17,969	19,435
5	-	Bridges - Camp Creek	Structure Excavation (Bridge)	585	BCY	54	31,495	-	3,150	346	1,481	36,472	39,448
5	-	Bridges - Camp Creek	Steel piles, "H" Sections, 50' long, HP14 X 89, excludes mobilizatio	1,400	VLFT	78	108,773	-	10,877	1,197	5,114	125,961	136,239
5	-	Bridges - Camp Creek	Piling special costs, pre-augering for Pile	1,400	LF	289	404,027	-	40,403	4,444	18,996	467,870	506,048
5	-	Bridges - Camp Creek	Mobilization, 150 ton, set up and remove crane, with pile leads and p	2.00	EA	20,847	41,694	-	4,169	459	1,960	48,282	52,222
5	-	Bridges - Camp Creek	A736 Barrier Wall	444	LF	360	160,010	-	16,001	1,760	7,523	185,294	200,414
5	-	Bridges - Camp Creek	Expansion joint, neoprene, liquid, 1" x 2", cold applied	50.00	LF	41	2,072	-	207	23	97	2,400	2,596
5	-	Bridges - Camp Creek	Columns Structural Concrete includes forms, Grade 60 rebar, concre	132	CY	1,802	237,884		23,788	2,617	11,185	275,474	297,953
5	-	Bridges - Camp Creek	Deck Structural concrete, in place, includes forms, Grade 60 rebar,	139	CY	1,068	148,489	-	14,849	1,633	6,981	171,953	185,985
5	-	Bridges - Camp Creek	Footer Structural concrete, footing, reinforced, includes forms (4 uses	162	CY	388	62,918	-	6,292	692	2,958	72,860	78,806
5	-	Bridges - Camp Creek	Approach Slab Structural concrete, in place, 6" thick, includes forms	19.00	CY	268	5,099	-	510	56	240	5,905	6,387
5	-	Bridges - Camp Creek	Precast 36" I-Girder 67'	4.00	EA	26,947	107,790	-	10,779	1,186	5,068	124,822	135,008
5	-	Bridges - Camp Creek	Precast 36" I-Girder 53'	8.00	EA	33,484	267,873	-	26,787	2,947	12,595	310,201	335,514
5	-	Bridges - Camp Creek Paving	Roadway Excavation	12,270	CY	36	443,854	-	44,385	4,882	20,869	513,990	555,932
5	-	Bridges - Camp Creek Paving	Ditch Excavation	200	CY	32	6,330	-	633	70	298	7,331	7,929
5		Bridges - Camp Creek Paving	Midwest Guardrail System	400	LF EA	37 3.617	14,690 14,470	-	1,469 1,447	162 159	691 680	17,012 16.756	18,400 18,123
5		Bridges - Camp Creek Paving	Transition Railing (Type WB-31)			- 7 -	, .	-	,	40		-,	-, -
5	-	Bridges - Camp Creek Paving	Alternative Flared Terminal System	2.00	EA	1,809	3,617		362		170	4,189	4,531
5	-	Bridges - Camp Creek Paving	Temporary Reinforced Silt Fence	400	LF	7	2,742	-	274	30	129	3,175	3,434
5	-	Bridges - Camp Creek Paving	Temporary Fence (Type ESA)	400	LF SQYD	5	1,820	-	182	20	86	2,107	2,279
5	-	Bridges - Camp Creek Paving	Temporary Hydroseed	160		8	1,334	-	133 240	15 26	63	1,545	1,671
5	-	Bridges - Camp Creek Paving	Rolled Erosion Control / Jute Mesh	160 225	SQYD	15 7	2,405 1,648	- :	165	18	113 77	2,785 1,909	3,012 2,064
5	-	Bridges - Camp Creek Paving	Temporary Fiber Roll	2.00	EA	3,892	7,783	- :	778	86	366	9,013	9,749
5	-	Bridges - Camp Creek Paving	Temporary Construction Entrance	0.10	%	450,184	45,018	-	4,502	495	2,117	52,132	56,386
5		Bridges - Camp Creek Paving	Water Pollution Control	8.00	EA	244	1,953		195	21	92	2,262	2.447
5	-	Bridges - Camp Creek Paving	Roadside Sign - One Post	810	LF	1	630		63	7	30	730	789
5	-	Bridges - Camp Creek Paving	Thermoplastic Traffic Stripe	2.00	EA	248	496		50	5	23	574	621
5		Bridges - Camp Creek Paving	Type III Barricade	20.00	Days	904	18,087		1,809	199	850	20,945	22,654
5		Bridges - Camp Creek Paving	Traffic Control System	300	LF	43	12,751		1,275	140	600	14,766	15,971
5		Bridges - Camp Creek Paving	Temporary Railing (Type K)	100	CY	36	3,617		362	40	170	4,189	4,531
	-	Bridges - Camp Creek Temp Culvert	Roadway Excavation Ditch Excavation	150	CY	32	4,748		475	52	223	5,498	5.947
5		Bridges - Camp Creek Temp Culvert Bridges - Camp Creek Temp Culvert	Imported Borrow	3,500	CY	41	142,435		14,243	1,567	6,697	164,942	178,401
5		Bridges - Camp Creek Temp Culvert	Clearing & Grubbing	5,000	LS	1	4,522		452	50	213	5,236	5,664
5		Bridges - Camp Creek Temp Culvert	Hot Mix Asphalt (Type A)	470	TON	118	55,256		5,526	608	2,598	63,987	69,208
5		Bridges - Camp Creek Temp Culvert	Class 2 Aggregate Base	235	CY	59	13,814		1,381	152	649	15,997	17,302
5		Bridges - Camp Creek Temp Culvert	Rock Slope Protection (Class?) Method B	15.00	CY	90	1.357		136	15	64	1.571	1,699
5		Bridges - Camp Creek Temp Culvert	Rock Slope Protection (Class?) Wethour B	45.00	SQYD	9	412	-	41	5	19	477	516
5	-:-	Bridges - Camp Creek Temp Culvert	36" Alternative Pipe Culvert	300	LF	236	70,924	-	7,092	780	3,335	82,132	88,834
5		Bridges - Camp Creek Temp Culvert	Temporary Reinforced Silt Fence	600	LF	7	4.113		411	45	193	4.763	5.152
5		Bridges - Camp Creek Temp Culvert	Temporary Fence (Type ESA)	600	LF	5	2,729		273	30	128	3,161	3,419
5		Bridges - Camp Creek Temp Culvert	Temporary Hydroseed	630	SQYD	8	5,253	_	525	58	247	6,083	6,579
5		Bridges - Camp Creek Temp Culvert	Rolled Erosion Control / Jute Mesh	630	SQYD	15	9,469	-	947	104	445	10.965	11.860
5	-	Bridges - Camp Creek Temp Culvert	Temporary Fiber Roll	1,190	LF	7	8,717	-	872	96	410	10,094	10,918
5		Bridges - Camp Creek Temp Culvert	Temporary Concrete Washout	2,000	LS	1	1,809	-	181	20	85	2,094	2,265
5		Bridges - Camp Creek Temp Culvert	Temporary Construction Entrance	2.00	EA	3.892	7,783	-	778	86	366	9,013	9.749
5		Bridges - Camp Creek Temp Culvert	Water Pollution Control	0.10	%	297,084	29,708	-	2,971	327	1,397	34,403	37,210
5		Bridges - Camp Creek Temp Culvert	Construction Area Signs	1.00	LS	1,739	1,739	-	174	19	82	2,014	2,178
5		Bridges - Camp Creek Temp Culvert	Temporary Traffic Stripe	650	LF	1,700	705	-	71	8	33	817	884
5		Bridges - Camp Creek Temp Culvert	Type III Barricade	2.00	EA	248	496	-	50	5	23	575	621
5		Bridges - Camp Creek Temp Culvert	Traffic Control System	10.00	Days	904	9,043	-	904	99	425	10,472	11,327
5	-	Bridges - Camp Creek Temp Culvert	Temporary Railing (Type K)	600	LF	43	25,503		2,550	281	1,199	29,532	31,942
		Bridges - Jenny Creek	. surprise, reasoning (1) ports			.0	,0		_,		.,	,2	
5		Bridges - Jenny Creek	Sheet Pile Coffer Dam For Center Footer	2,400	SF	35	84,187	-	8,419	926	3,958	97,490	105,445
5	-	Bridges - Jenny Creek	Earth Work Coffer Dam Construction for side footers	1,186	LCY	14	16,810	-	1,681	185	790	19,467	21,055
5		Bridges - Jenny Creek	Backfill, structural, common earth, 105 H.P. dozer, 50' haul, from exi	142	LCY	37	5,246	-	525	58	247	6,075	6,571
5		Bridges - Jenny Creek	Structure Excavation (Type D)	320	BCY	19	5,970	-	597	66	281	6,914	7,478
-		Bridges - Jenny Creek	Structure Excavation (Fridge)	209	BCY	54	11,252	-	1,125	124	529	13,030	14,093
5					VLFT	78	205,115	-	20,511	2,256	9,644	237,526	256,908
5		Bridges - Jenny Creek	Steel niles "H" Sections 50' long HD14 Y 80 evaluate mobilization										
5 5 5	-	Bridges - Jenny Creek Bridges - Jenny Creek	Steel piles, "H" Sections, 50' long, HP14 X 89, excludes mobilizatio Piling special costs, pre-augering for Pile and Tie Down Anchor	2,640 2.640	LF	289	761.880	- :	76,188	8,381	35.821	882,269	954.262

_		Cost Estimate - Full Removal											luly 2019
st	Cost				1	(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading Description	on	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
				77.0		000	070.057		07.000	0.070	40.440	200.010	050.07
j .	-	Bridges - Jenny Creek A736 Barri		776	LF	360	279,657		27,966	3,076	13,149	323,848	350,274
5			n joint, neoprene, liquid, 1" x 2", cold applied	58.00	LF	41	2,404	-	240	26	113	2,784	3,011
5	-		Structural Concrete includes forms, Grade 60 rebar, concre	174	CY	1,802	313,575		31,357	3,449	14,743	363,125	392,756
	-		ctural concrete, in place, includes forms, Grade 60 rebar,	317	CY	1,068	338,641	-	33,864	3,725	15,922	392,152	424,152
;	-		ructural concrete,footing, reinforced, includes forms(4 uses	281	CY	388	109,136	-	10,914	1,200	5,131	126,381	136,694
5	-	Bridges - Jenny Creek Approach	Slab Structural concrete, in place, 6" thick, includes forms	22.00	CY	268	5,904	-	590	65	278	6,837	7,395
5	-	Bridges - Jenny Creek Precast 61	1" Bulb Tee 73'	8.00	EA	44,308	354,467	-	35,447	3,899	16,666	410,478	443,973
5	-	Bridges - Jenny Creek Precast 61	1" Bulb Tee 100'	8.00	EA	71,962	575,698	-	57,570	6,333	27,067	666,668	721,068
5	-	Bridges - Jenny Creek Bridge Der	emolition	3,102	SF	53	164,530	-	16,453	1,810	7,736	190,529	206,076
5	-	Bridges - Jenny Creek Paving Roadway E	Excavation	30,000	CY	36	1,085,217	-	108,522	11,937	51,023	1,256,700	1,359,247
5	-	Bridges - Jenny Creek Paving Ditch Exca	avation	210	CY	32	6,647	-	665	73	313	7,697	8,32
5	-	Bridges - Jenny Creek Paving Imported B	Borrow	35,000	CY	41	1,424,348	-	142,435	15,668	66,968	1,649,419	1,784,01
5	-		sphalt (Type A)	600	TON	118	70,539	-	7,054	776	3,317	81,685	88,35
5	-		aggregate Base	370	CY	59	21,750	-	2,175	239	1,023	25,186	27,242
5	-		Guardrail System	200	LF	37	7,345	-	735	81	345	8,506	9,200
5			n Railing (Type WB-31)	4.00	EA	3,617	14,470		1,447	159	680	16,756	18,12
5			e Flared Terminal System	2.00	EA	1,809	3,617		362	40	170	4.189	4.53
5			y Reinforced Silt Fence	400	LF	7	2,742	-	274	30	129	3,175	3,43
5	÷			400	LF	5	1,820	-	182	20	86	2,107	2,27
			y Fence (Type ESA)	1,770	SQYD	8	14.758		1.476	162	694	17,090	18.48
5			y Hydroseed	1,770	SQYD	15	26,604		2,660	293	1,251	30,807	33,32
5			osion Control / Jute Mesh										
5	-		y Fiber Roll	2,490	LF	7	18,240	-	1,824	201	858	21,122	22,846
5	-		y Concrete Washout	2,000	LS	1	1,809	-	181	20	85	2,094	2,265
5	-		y Construction Entrance	2.00	EA	3,892	7,783	-	778	86	366	9,013	9,749
5	-	Bridges - Jenny Creek Paving Water Poll	Ilution Control	0.10	%	2,608,501	260,850	-	26,085	2,869	12,264	302,069	326,718
5	-	Bridges - Jenny Creek Paving Roadside	Sign - One Post	8.00	EA	244	1,953	-	195	21	92	2,262	2,44
5	-	Bridges - Jenny Creek Paving Construction	tion Area Signs	2,000	LS	1	1,809	-	181	20	85	2,094	2,265
5	-	Bridges - Jenny Creek Paving Thermopla	astic Traffic Stripe	1,000	LF	1	778	-	78	9	37	901	974
5	-	Bridges - Jenny Creek Paving Type III Ba	arricade	2.00	EA	248	496	-	50	5	23	574	621
5	-	Bridges - Jenny Creek Paving Traffic Cor	ontrol System	20.00	Days	904	18,087	-	1,809	199	850	20,945	22,654
5	-		y Railing (Type K)	300	LF	43	12,751	-	1,275	140	600	14,766	15,971
		Bridges - Other	, , , ,										
5	-		emolition Ped Bridge #1	800	SF	53	42,432	-	4,243	467	1,995	49,137	53,147
5			emolition Ped Bridge Campground	800	SF	53	42,432		4,243	467	1,995	49,137	53,147
5	-		emolition Timber JC Boyle	1,800	SF	53	95,472	-	9,547	1,050	4,489	110,558	119,580
,		Culverts - Beaver Creek (Copco Rd)	Sinonaon i miber de Beyle	.,						.,	1,100	,	,
5			Excavation	3,000	CY	36	108,522		10,852	1,194	5,102	125,670	135,92
	÷			2,500	CY	41	101,739		10,174	1,119	4,783	117,816	127,429
5				250	CY	90	22,609	-	2,261	249	1,063	26,181	28,318
5	-		pe Protection Class III, Method B	700	SQYD	2	1.746		175	19	82	2.021	2,186
5	-		pe Protection Fabric Class 8		LF								,
5	-		RUGATED STEEL PIPE (.138" THICK)	80.00		244	19,534	-	1,953	215	918	22,621	24,466
5	-		y Reinforced Silt Fence	600	LF	7	4,113	-	411	45	193	4,763	5,152
5	-		y Fence (Type ESA)	600	LF	5	2,729	-	273	30	128	3,161	3,419
5	-		Ilution Control	0.10	%	188,953	18,895	-	1,890	208	888	21,881	23,667
5	-	Culverts - Beaver Creek (Copco Rd) Construction	tion Area Signs	1.00	LS	522	522	-	52	6	25	604	653
5	-	Culverts - Beaver Creek (Copco Rd) Traffic Cor	ontrol System	1.00	LS	8,696	8,696	-	870	96	409	10,070	10,89
5	-	Culverts - Beaver Creek (Copco Rd) Temporary	y Railing (Type K)	80.00	LF	33	2,642	-	264	29	124	3,059	3,309
5	-	Culverts - Beaver Creek (Copco Rd) Replace as	and Reconstruct 60-inch Culvert No.1 at Beaver Creek	1.00	LS	13,043	13,043	-	1,304	143	613	15,105	16,33
5	-	Culverts - Beaver Creek (Copco Rd) Replace as	and Reconstruct 60-inch Culvert No.2 at Beaver Creek	1.00	LS	13,043	13,043	-	1,304	143	613	15,105	16,33
		Culverts - Raymond Gulch (Copco Rd)											
5	-		pe Protection Class III, Method B	150	CY	90	13,565	-	1,357	149	638	15,709	16,99
5			pe Protection Fabric Class 8	400	SQYD	2	997	-	100	11	47	1,155	1,24
5			y Reinforced Silt Fence	600	LF	7	4,113		411	45	193	4,763	5,15
5	÷		y Fence (Type ESA)	600	LF	5	2,729	-	273	30	128	3,161	3,41
5			Ilution Control	0.10	%	14,563	1,456		146	16	68	1,686	1,82
				1.00	LS	870	870		87	10	41	1,000	1,08
5			ontrol System	1.00	LS	8,696	8,696		870	96	409	10,070	10,89
5	-		ulvert at Raymond Gulch	1.00	LO	0,090	0,090		6/0	90	409	10,070	10,89
		Culverts - Patricia Avenue		450	617	0	40 =0-				205		
5	-		pe Protection Class III, Method B	150	CY	90	13,565	-	1,357	149	638	15,709	16,99
5	-		pe Protection Fabric Class 8	400	SQYD	2	997	-	100	11	47	1,155	1,24
5			Ilution Control	0.10	%	14,563	1,456	-	146	16	68	1,686	1,82
5		Culverts - Patricia Avenue Traffic Cor	ontrol System	1.00	LS	870	870	-	87	10	41	1,007	1,08
		Culverts - Topsy Grade											
		Culverts - Topsy Grade Trench Ex	veavation	275	CY	10	2,858	-	286	31	134	3,309	3,57

VI VI		ost Estimate - Full Removal											July 2019
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
5	-	Culverts - Topsy Grade	Clearing & Grubbing	1.00	LS	1,739	1,739	-	174	19	82	2,014	
5	-	Culverts - Topsy Grade	Rock Slope Protection Class III, Method B	800	CY	90	72,348	-	7,235	796	3,402	83,780	
5	-	Culverts - Topsy Grade	Rock Slope Protection Fabric Class 8	2,350	SQYD	2	5,860		586	64	276	6,786	
5	-	Culverts - Topsy Grade	24" CORRUGATED STEEL PIPE (.138" THICK)	200	LF	19	3,740	-	374	41	176	4,331	4,684
5	-	Culverts - Topsy Grade	Temporary Reinforced Silt Fence	1,000	LF	7	6,855	-	685	75	322	7,938	8,586
5	-		Temporary Fence (Type ESA)	1,000	LF	5	4,549 8,654	-	455	50 95	214 407	5,268 10,022	5,698
5	-	Culverts - Topsy Grade	Water Pollution Control	0.10	%	86,544 4,348		-	865 435				10,840
5	-		Traffic Control System	1.00	LS	4,348	4,348	-	435	48	204	5,035	5,446
_		Culverts - JC Boyle Unnamed		115		90	10,400		1,040	114	489	12,043	13,026
5	-	Culverts - JC Boyle Unnamed	Rock Slope Protection Class III, Method B		CY			-					
5	-	Culverts - JC Boyle Unnamed	Rock Slope Protection Fabric Class 8	350	SQYD	11,273	873 1,127		87 113	10 12	41 53	1,011	1,093
5	-	Culverts - JC Boyle Unnamed	Water Pollution Control	0.10 1.00	LS	870	870		87	12	41	1,305 1,007	1,412 1,089
5	-		Traffic Control System	1.00	LS	13,043	13,043	-	1,304	143	613	15,105	
5	-	Culverts - JC Boyle Unnamed	Copco Road at Unnamed Creek Culvert No. 1	1.00	LS	13,043	13,043	-	1,304	143	613	15,105	
5	-	Culverts - JC Boyle Unnamed	Copco Road at Unnamed Creek Culvert No. 2	1.00	LS	13,043	13,043		1,304	143	613	15,105	
5	-	Culverts - JC Boyle Unnamed	6'x6'x34' Box Culvert installation	1.00	Lo	13,043	13,043	-	1,304	143	013	15,105	10,337
-		Culverts - Scotch Creek (Copco Rd)		3,000	CY	36	108,522		10,852	1,194	5,102	125,670	135,925
5		Culverts - Scotch Creek (Copco Rd)	Roadway Excavation	10.00	CY	32	317	-	32	3	15	367	396
5			Ditch Excavation	3,000	CY	41	122.087	-	12.209	1.343	5.740	141.379	
5		Culverts - Scotch Creek (Copco Rd)	Imported Borrow	170	TON	118	19,986		1,999	220	940	23,144	25,033
5	-	Culverts - Scotch Creek (Copco Rd)	Hot Mix Asphalt (Type A)	120	CY	59	7,054	-	705	78	332	8,169	25,033 8.835
5	-	Culverts - Scotch Creek (Copco Rd)	Class 2 Aggregate Base	5.00	CY	90	452		45	5	21	524	-,
5	-	Culverts - Scotch Creek (Copco Rd)	Rock Slope Protection Class III, Method B	12.00	SQYD	2	30		3	0		35	
5		Culverts - Scotch Creek (Copco Rd)	Rock Slope Protection Fabric Class 8	10.00	CY	4.373	43,725		4,373	481	2,056	50,635	54.766
5	-	Culverts - Scotch Creek (Copco Rd)	Structural Concrete, Box Culvert	400	LF	4,373		-	1,469		691		. ,
5	-	Culverts - Scotch Creek (Copco Rd)	Midwest Guardrail System				14,690			162		17,012	-,
5	-	Culverts - Scotch Creek (Copco Rd)	Alternative Flared Terminal System	2.00	EA LF	1,809	3,617	-	362	40	170	4,189	4,531
5	-	Culverts - Scotch Creek (Copco Rd)	Temporary Reinforced Silt Fence	400		7	2,742	-	274	30	129	3,175	3,434
5	-		Temporary Fence (Type ESA)	400	LF	5	1,820	-	182	20	86	2,107	2,279
5	-		Temporary Hydroseed	220	SQYD	8	1,834	-	183	20	86	2,124	2,298
5	-	Culverts - Scotch Creek (Copco Rd)	Rolled Erosion Control / Jute Mesh	220	SQYD	15	3,307	- :	331	36	155	3,829	4,142
5	-	Culverts - Scotch Creek (Copco Rd)	Temporary Fiber Roll	450	LF		3,296		330	36	155	3,817	4,129
5	-	Culverts - Scotch Creek (Copco Rd)	Temporary Construction Entrance	2.00	EA	3,892	7,783	-	778	86	366	9,013	9,749
5	-	Culverts - Scotch Creek (Copco Rd)	Water Pollution Control	0.10	%	302,173	30,217	-	3,022	332	1,421	34,992	37,847
5	-	Culverts - Scotch Creek (Copco Rd)	Construction Area Signs	1.00	LS	2,174	2,174	-	217	24	102	2,517	2,723
5	-		Thermoplastic Traffic Stripe	200	LF	1	156	-	16	2	7	180	
5	-		Traffic Control System	1.00	LS	8,696	8,696	-	870	96	409	10,070	
5	-	Culverts - Scotch Creek (Copco Rd)	Temporary Railing (Type K)	200	LF	33	6,604	-	660	73	311	7,648	8,272
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Roadway Excavation	550	CY	36	19,896	-	1,990	219	935	23,039	24,920
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Ditch Excavation	10.00	CY	32	317	-	32	3	15	367	396
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Imported Borrow	2,300	CY	41	93,600	-	9,360	1,030	4,401	108,390	
5	-		Hot Mix Asphalt (Type A)	510	TON	118	59,958	-	5,996	660	2,819	69,433	75,098
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Class 2 Aggregate Base	380	CY	59	22,337	-	2,234	246	1,050	25,867	27,978
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Rock Slope Protection (Class?) Method B	10.00	CY	90	904	-	90	10	43	1,047	1,133
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Rock Slope Protection Fabric Class 8	30.00	SQYD	9	275	-	27	3	13	318	344
5	-	Culverts - Scotch Creek Temp (Copco Rd)	36" Alternative Pipe Culvert	250	LF	236	59,104	-	5,910	650	2,779	68,443	74,028
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Reinforced Silt Fence	300	LF	7	2,056	-	206	23	97	2,381	2,576
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Fence (Type ESA)	300	LF	5	1,365	-	136	15	64	1,580	1,709
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Hydroseed	590	SQYD	8	4,919	-	492	54	231	5,697	6,162
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Rolled Erosion Control / Jute Mesh	590	SQYD	15	8,868	-	887	98	417	10,269	
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Fiber Roll	450	LF	7	3,296	-	330	36	155	3,817	4,129
5	-		Temporary Concrete Washout	2,000	LS	1	1,809	-	181	20	85	2,094	2,265
5	-		Temporary Construction Entrance	2.00	EA	3,892	7,783	-	778	86	366	9,013	
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Water Pollution Control	0.10	%	256,392	25,639	-	2,564	282	1,205	29,691	32,113
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Construction Area Signs	1.00	LS	1,739	1,739	-	174	19	82	2,014	2,178
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Traffic Stripe	520	LF	1	564	-	56	6	27	653	707
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Type III Barricade	2.00	EA	248	496	-	50	5	23	575	621
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Traffic Control System	10.00	Days	904	9,043	-	904	99	425	10,472	
5	-	Culverts - Scotch Creek Temp (Copco Rd)	Temporary Railing (Type K)	55.06	LF	386	21,252	-	2,125	234	999	24,610	26,619
		Paving											
5	-	Paving - Lakeview Disposal Access Road	Pre: none; Post: 0.7 miles 6" AB overlay (no drainage improvements	1.00	EA	147,826	147,826	22,174	17,000	1,870	6,950	195,820	229,082
5	-	Paving - Copco 1 Dam Access	Pre: 2500CY roadway excavation, 0.9 miles 9" AB overlay (no draina	1.00	EA	217,391	217,391	32,609	25,000	2,750	10,221	287,971	323,928
5	-	Paving - Copco Rd from Copco 1 access to Copco Bridge	Pre: 1 mile 9" AB repair; Post: 1 mile 9" AB repair, 0.2 mile HMA ove	1.00	EA	276,522	276,522	41,478	31,800	3,498	13,001	366,299	
5		Paving - Copco 1 Ager Beswick Rd Barge Access	Pre: minor excavation and 9" AB section; Post: none	1.00	EA	52,174	52,174	7,826	6,000	660	2,453	69,113	77,743

		ost Estimate - Full Removal											July 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
15		Paving - US 97 Dalles CA Hwy	Pre: none; Post: none (high only)	1.00	EA	-	-	-	-	-	-	-	-
15		Paving - OR 66 Green Springs hwy	Pre: none; Post: none (high only)	1.00	EA	-	-	-	-	-	-	-	-
15		Paving - JC Boyle Keno Worden	Pre: none; Post: none (high only)	1.00	EA	-	-	-	-	-	-	-	-
15		Paving - Topsy Grade Rd	Pre: 0.9 mile 9" AB repair; Post: 0.9 mile 9" AB repair	1.00	EA	765,217	765,217	114,783	88,000	9,680	35,978	1,013,658	1,163,032
15		Paving - JC Boyle Dam Access Rd (2,940 ft to dam toe)	Pre: minor excavation; 0.25 mile new 9" AB, 0.7 mile 9" AB repair; po	1.00	EA	291,304	291,304	43,696	33,500	3,685	13,696	385,881	441,009
15		Paving - JC Boyle Power Canal Access Rd	Pre: 1.5 mile 9" AB repair; post: 1.5 mile 9" AB repair; no guardrail	1.00	EA	375,652	375,652	56,348	43,200	4,752	17,662	497,614	570,943
15		Paving - JC Boyle Powerhouse Access Rd	Pre: none; Post: none (high only)	1.00	EA	-	-		-			<u> </u>	-
15		Paving - Copco Rd I5 to Ager Rd	Pre: none; Post: 1 mile new asphalt overlay	1.00	EA	947,826	947,826	142,174	109,000	11,990	44,564	1,255,554	1,468,820
15		Paving - Copco Rd Ager Rd to Lakeview Rd	Pre: 0.5 miles crack sealer, 0.75 miles new asphalt; Post: 1 miles n	1.00	EA	1,413,043	1,413,043	211,957	162,500	17,875	66,437	1,871,812	2,156,066
15		Paving - Copco Rd to Lakeview Rd to Dagget Rd	Pre: 1 mile crack sealer, 1.5 miles new asphalt; Post: 2 miles new a	1.00	EA	2,591,304	2,591,304	388,696	298,000	32,780	121,835	3,432,615	3,953,894
15		Paving - Copco Rd Daggett Rd to Copco 1 Access Rd	Pre: 1.5 mile 9" AB repair; Post: 1.5 mile 9" AB repair, no guardrail	1.00	EA	375,652	375,652	56,348	43,200	4,752	17,662	497,614	570,943
		Recreation Improvements											
		KENO Alt A		210	SY	26	5,534	830	636	70	260	7,331	7,929
16		KENO Alt A	Natural Launch Road - Gravel fill, 4" gravel depth & Finish Grading		SY	42	44,579	6,687	5,127	564	2,096	59,052	63,871
16		KENO Alt A	Improved Commercial Access Road - gravel fill, 8" gravel depth, exc	1,069 210	SY	2	517	78	5,127	7	2,096	685	741
16		KENO Alt A	Clearing & grubbing, cut & chip light trees, to 6" diameter	45.00	SY	36	1,598	240	184	20	75	2.117	2,290
16		KENO Alt A	Boulder Retaining Wall - Grading and Finish Grading Slopes	60.00	ton	680	40,786	6,118	4,690	516	1,918	54,028	58,437
16 16		KENO Alt A KENO Alt A	Boulder Retaining Wall 2'X2'X2' 8CF or 1200lbs per boulder	3.00	Opng	2,586	7,759	1,164	892	98	365	10,278	11,117
			Access Gate - Fence, chain link industrial, double swing gates, 8' h	397	SF	2,560	1,102	165	127	14	52	1,460	1,579
16 16		KENO Alt A	Boulder Retaining Wall geo-grid soil reinforcement for segmental bl	919	SF	2	1,790	269	206	23	84	2,371	2,565
16		KENO Alt A	Stone Retaining Wall geo-grid soil reinforcement for segmental blod	100	LF	52	5,234	785	602	66	246	6.933	7,499
.0		KENO Alt A	Timber Retaining wall - timber, 6" x 8"	919	SF	148	135,724	20.359	15,608	1.717	6,381	179,789	194,460
16 16		KENO Alt A	Stone Retaining Wall - retaining wall, cut stone, 6' to 10' high, 2' thi Bulletin board/ Kiosk - prefabricated, wood frame, 1/4" cork, 4' x 8'	2.00	EA	963	1,926	289	221	24	91	2,551	2,759
+0		HWY 66 Bridge	Bulletin board/ Klosk - prefabilicated, wood frame, 1/4 Cork, 4 x 8	2.00	LA	903	1,320	209	221	24	31	2,001	2,733
16		HWY 66 Bridge	Boat Ramp - Fine grading, finish grading, small area, to be paved wi	1,025	SY	11	11,513	1,727	1,324	146	541	15,251	16,495
16		HWY 66 Bridge	Boat Ramp - Fill, gravel fill, compacted, under floor slabs, 4" deep	9,317	SF	2	22,830	3,425	2,625	289	1,073	30,242	32,710
16		HWY 66 Bridge	Boat Ramp - C.I.P. concrete forms, slab on grade, edge, wood, 7" to	280	sfca	116	32,423	4,863	3,729	410	1,524	42,950	46,454
16		HWY 66 Bridge	Boat Ramp - Expansion joint, premolded, bituminous fiber, 1/2" x 6"	2,050	LF	2	3,236	485	372	41	152	4,287	4,636
16		HWY 66 Bridge	Boat Ramp - Reinforcing steel, in place, columns, #3 to #7, A615, g	34,950	lb lb	2	62,545	9,382	7,193	791	2,941	82,851	89,612
16		HWY 66 Bridge	Boat Ramp - Structural concrete, ready mix, heavyweight, 4500 psi, i	233	CY	246	57,300	8,595	6,590	725	2,694	75,903	82,097
16		HWY 66 Bridge	Boat Ramp - Structural concrete, placing, slab on grade, pumped, o	233	CY	79	18,342	2,751	2,109	232	862	24,297	26,280
16		HWY 66 Bridge	Boat Ramp - Concrete finishing, fresh concrete flatwork, floors, basi	9,317	SF	1	9,778	1,467	1,124	124	460	12,953	14,010
16		HWY 66 Bridge	Boat Ramp - Concrete surface treatment, curing, sprayed membrane	93.20	Csf	33	3,120	468	359	39	147	4,133	4,470
16		HWY 66 Bridge	Boat Ramp - Vapor retarders, building paper, polyethylene vapor barr	93.20	sq	27	2,518	378	290	32	118	3,336	3,608
16		HWY 66 Bridge	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	1,543	SY	26	40,659	6,099	4,676	514	1,912	53,860	58,255
16		HWY 66 Bridge	Gravel Beach - Gravel fill, 4" gravel depth & Finish Grading	837	SY	26	22,056	3,308	2,536	279	1,037	29,217	31,601
16		HWY 66 Bridge	Planting beds preparation, backfill planting pit, on site topsoil, skid	100	CY	71	7,140	1,071	821	90	336	9,458	10,230
16		HWY 66 Bridge	Clearing & grubbing, cut & chip light trees, to 6" diameter	18,611	SY	2	45,783	6,867	5,265	579	2,153	60,647	65,596
16		HWY 66 Bridge	Boat Ramp Coffer Dam - Dewatering, pumping 8 hours, attended 2 h	60.00	days	1,283	76,955	11,543	8.850	973	3,618	101,940	110,258
16		HWY 66 Bridge	Boulder Retaining Wall - Grading and Finish Grading Slopes	109	SY	36	3,871	581	445	49	182	5,128	5,546
16		HWY 66 Bridge	Gravel Trail - Backfill, in 8" layers, spreading, small dozer, includes	390	L.C.Y.	3	1,007	151	116	13	47	1,334	1,443
16		HWY 66 Bridge	Paved Access Road - Backfill, in 8" layers, spreading, small dozer, i	1,595	L.C.Y.	3	4,118	618	474	52	194	5,455	5,900
16		HWY 66 Bridge	Gravel Trail - Excavating with Dozer fill to be used onsite	300	B.C.Y.	4	1,090	164	125	14	51	1,444	1,562
16		HWY 66 Bridge	Paved Access Road - Excavating with Dozer fill to be used onsite	1,227	B.C.Y.	4	4,457	669	513	56	210	5,904	6,386
16		HWY 66 Bridge	Gabion Wall - Structural excavation for minor structures, bank measures	106	B.C.Y.	25	2,637	396	303	33	124	3,493	3,778
16		HWY 66 Bridge	Boat Ramp Coffer Dam- Rip-rap and rock lining, random, broken stor	60.00	ton	143	8,555	1,283	984	108	402	11,333	12,257
16		HWY 66 Bridge	Boat Ramp Coffer Dam - Placing 1 ton supersack for coffer dam 3 ro	60.00	ton	311	18,658	2,799	2,146	236	877	24,716	26,732
16		HWY 66 Bridge	Boulder Retaining Wall 2'X2'X2' 8CF or 1200lbs per boulder	215	ton	680	146,151	21,923	16,807	1,849	6,872	193,601	209,399
16		HWY 66 Bridge	Boat Ramp Coffer Dam - Synthetic erosion control, jute mesh, 100 S	647	SY	3	1,638	246	188	21	77	2,170	2,347
16		HWY 66 Bridge	Docks, floating, recreational, prefabricated galvanized steel with pol	796	SF	75	59,463	8,919	6,838	752	2,796	78,769	85,196
16		HWY 66 Bridge	Gravel Trail- Base course drainage layers, aggregate base course for	1,543	SY	6	9,918	1,488	1,141	125	466	13,138	14,210
16		HWY 66 Bridge	Gravel Trail - Base course drainage layers, prepare and roll sub-bas	1,543	SY	2	3,634	545	418	46	171	4,814	5,207
16		HWY 66 Bridge	Paved Access Road - Base course drainage layers, prepare and roll	4,416	SY	2	10,399	1,560	1,196	132	489	13,775	14,899
16		HWY 66 Bridge	Gravel Beach - Base course drainage layers, prepare and roll sub-ba	837	SY	2	1,971	296	227	25	93	2,611	2,824
16	-	HWY 66 Bridge	Paved Access Road - Asphaltic concrete paving, parking lots & driv	39,747	SF	4	174,748	26,212	20,096	2,211	8,216	231,483	250,372
16	-	HWY 66 Bridge	Parking Lot - Pavement markings, parking stall, thermoplastic, white	16.00	Stall	432	6,912	1,037	795	87	325	9,156	9,903
16		HWY 66 Bridge	Parking Lot - Pavement markings, street letters and numbers	20.00	SF	9	173	26	20	2	8	229	248
16		HWY 66 Bridge	Boulder Retaining Wall geo-grid soil reinforcement for segmental bl	980	SF	3	2,720	408	313	34	128	3,603	3,897
16	-	HWY 66 Bridge	Timber Retaining wall - timber, 6" x 8"	273	LF	52	14,289	2,143	1,643	181	672	18,928	20,473
16		HWY 66 Bridge	Gabion retaining walls, stone filled gabions, stone delivered, galvan	106	LF	369	39,092	5,864	4,496	495	1,838	51,784	56,009
		HWY 66 Bridge	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	16.00	EA	289	4,624	694	532	58	217	6,125	6,625
16													
16		HWY 66 Bridge	Site seating, park benches, precast concrete, with backs, wood rails	1.00	EA	1,936	1,936	290	223	24	91	2,565	2,774

	_		ost Estimate - Full Removal											uly 2019
Est	Co		Heading	Becariotion	Qty	Unit	(\$) Rate	(\$) Direct Cost	15% MU by Sub	10% PDB OH&P	1% Bonds	Field Overhead	(\$) Estimate	Escalated YOC Estimate
טו	Sne	eet	Heading	Description	Qty	Ullit	Nate	Direct Cost	IND by Sub	FDB OH&F	Bullus	Overneau	Estillate	TOC Estillate
46			HWY 66 Bridge	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2.00	EA	57	114	17	13	1	5	151	163
46			HWY 66 Bridge	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	667	SY	7	4.895	734	563	62	230	6.484	7,013
46			HWY 66 Bridge	Planting beds preparation, excavate planting pit, heavy soil or clay,	100	CY	15	1,513	227	174	19	71	2,004	2,168
46	٠.	_	HWY 66 Bridge	Trees Planted in prepared Beds	60.00	EA	588	35.305	5.296	4.060	447	1,660	46,767	50,584
46	-		HWY 66 Bridge	Shrubs Planted in prepared Beds	133	EA	129	17,133	2,570	1,970	217	806	22,696	24,547
46	-		HWY 66 Bridge	Entry Sign	1.00	EA	963	963	144	111	12	45	1,276	1,380
46	-	_	HWY 66 Bridge	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
			Below JC Boyle	, , , , , , , , , , , , , , , , , , , ,										
46	-		Below JC Boyle	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	357	SY	26	9,407	1,411	1,082	119	442	12,461	13,478
46	-		Below JC Boyle	Gravel Trail Boat Launch Area - Gravel fill, 4" gravel depth & Finish (193	SY	26	5,086	763	585	64	239	6,737	7,287
46	-		Below JC Boyle	Parking Lot - gravel fill, 8" gravel depth, excl surfacing	1,198	SY	43	51,339	7,701	5,904	649	2,414	68,007	73,556
46	-		Below JC Boyle	Improved Commercial Access Road - gravel fill, 8" gravel depth, exc	3,245	SY	42	135,322	20,298	15,562	1,712	6,362	179,257	193,884
46	-		Below JC Boyle	Boat Launch Area Wooden Boat Slide	418	SF	6	2,653	398	305	34	125	3,514	3,801
46	-		Below JC Boyle	Planting beds preparation, backfill planting pit, on site topsoil, skid	50.00	CY	71	3,570	536	411	45	168	4,729	5,115
46	-		Below JC Boyle	Clearing & grubbing, cut & chip light trees, to 6" diameter	4,628	SY	2	11,385	1,708	1,309	144	535	15,081	16,312
46	-		Below JC Boyle	Gravel Trail - Backfill, in 8" layers, spreading, small dozer, includes	91.00	L.C.Y.	3	235	35	27	3	11	311	337
46	-		Below JC Boyle	Gravel Trail - Excavating with Dozer fill to be used onsite	70.00	B.C.Y.	4	254	38	29	3	12	336	364
46	-	-	Below JC Boyle	Parking Lot - Excavating with Dozer fill to be used onsite	366	B.C.Y.	4	1,329	199	153	17	62	1,760	1,904
46	-		Below JC Boyle	Boat Launch Area Gabion Wall - Structural excavation for minor stru	179	B.C.Y.	25	4,453	668	512	56	209	5,899	6,380
46	-	-	Below JC Boyle	Boulder Retaining Wall 2'X2'X2' 8CF or 1200lbs per boulder	71.00	ton	680	48,264	7,240	5,550	611	2,269	63,934	69,151
46	-	-	Below JC Boyle	Gravel Trail- Base course drainage layers, aggregate base course for	357	SY	6	2,295	344	264	29	108	3,040	3,288
46	-	-	Below JC Boyle	Parking Lot - Base course drainage layers, aggregate base course for	1,198	SY	6	7,701	1,155	886	97	362	10,201	11,034
46	-		Below JC Boyle	Gravel Trail Boat Launch Area- Base course drainage layers, aggred	193	SY	6	1,241	186	143	16	58	1,644	1,778
46	-	-	Below JC Boyle	Gravel Trail - Base course drainage layers, prepare and roll sub-bas	357	SY	2	841	126	97	11	40	1,114	1,205
46	-		Below JC Boyle	Parking Lot - Base course drainage layers, prepare and roll sub-base	1,198	SY	2	2,821	423	324	36	133	3,737	4,042
46	-	-	Below JC Boyle	Gravel Trail Boat Launch Area - Base course drainage layers, prepa	193	SY	2	455	68	52	6	21	603	652
46	-	-	Below JC Boyle	Parking Lot - Pavement markings, parking stall, thermoplastic, white	15.00	Stall	432	6,480	972	745	82	305	8,584	9,284
46	-	-	Below JC Boyle	Parking Lot - Pavement markings, street letters and numbers	50.00	SF	9	433	65	50	5	20	574	620
46	-	-	Below JC Boyle	Boat Launch Area - Gabion retaining walls, stone filled gabions, sto	268	LF	172	46,100	6,915	5,302	583	2,167	61,067	66,050
46	-	-	Below JC Boyle	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	15.00	EA	289	4,335	650	499	55	204	5,742	6,211
46	-	-	Below JC Boyle	Site seating, park benches, precast concrete, with backs, wood rails	3.00	EA	1,936	5,807	871	668	73	273	7,692	8,320
46	-	-	Below JC Boyle	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18" x	2.00	EA	107	214	32	25	3	10	283	307
46		-	Below JC Boyle	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2.00	EA	57	114	17	13	1	5	151	163
46		-	Below JC Boyle	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	89.00	SY	7	653	98	75	8	31	865	936
46		-	Below JC Boyle	Planting beds preparation, excavate planting pit, heavy soil or clay,	50.00	CY	15	757	114	87	10	36	1,003	1,085
46		-	Below JC Boyle	Trees Planted in prepared Beds	8.00	EA	588	4,707	706	541	60	221	6,235	6,744
46		-	Below JC Boyle	Shrubs Planted in prepared Beds	41.00	EA	129	5,281	792	607	67	248	6,996	7,566
46		-	Below JC Boyle	Stairs - Stair tread nosing insert, cast aluminum, abrasive surface, 3	12.00	EA	121	1,450	218	167	18	68	1,921	2,078
46		-	Below JC Boyle	Stairs - Structural concrete, in place, stairs (3500 psi), 3'-6" wide, fre	48.00	LF	53	2,551	383	293	32	120	3,379	3,655
46		-	Below JC Boyle	Stairs - Railing, commercial, wall rail, steel pipe, painted, 1-1/2" dia	17.00	LF	30	518	78	60	7	24	686	742
46		-	Below JC Boyle	Stairs - Railing, industrial, welded, steel pipe, 2 rails, 3'-6" high, pos	18.00	LF	60	1,082	162	124	14	51	1,433	1,550
46	-		Below JC Boyle	Entry Sign	1.00	EA	963	963	144	111	12	45	1,276	1,380
46			Below JC Boyle	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
			Turtle Camp											
46	-		Turtle Camp	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	148	SY	26	3,900	585	449	49	183	5,166	5,588
46			Turtle Camp	Parking Lot - gravel fill, 8" gravel depth, excl surfacing	580	SY	43	24,855	3,728	2,858	314	1,169	32,925	35,611
46			Turtle Camp	Access Road - gravel fill, 8" gravel depth, excl surfacing	710	SY	43	30,426	4,564	3,499	385	1,431	40,304	43,593
46			Turtle Camp	Improved Commercial Access Road - gravel fill, 8" gravel depth, exc	2,641	SY	42	110,135	16,520	12,666	1,393	5,178	145,892	157,797
46			Turtle Camp	Planting beds preparation, backfill planting pit, on site topsoil, skid	30.00	CY	71	2,142	321	246	27	101	2,837	3,069
46	-		Turtle Camp	Clearing & grubbing, cut & chip light trees, to 6" diameter	1,692	SY	2	4,162	624	479	53	196	5,513	5,963
46			Turtle Camp	Gravel Trail - Backfill, in 8" layers, spreading, small dozer, includes	39.00	L.C.Y.	3	101	15	12	1	5	134	145
46			Turtle Camp	Gravel Trail - Excavating with Dozer fill to be used onsite	30.00	B.C.Y.	4	109	16	13	1	5	144	156
46	-	_	Turtle Camp	Parking Lot - Excavating with Dozer fill to be used onsite	177	B.C.Y.	4	643	96	74	8	30	852	921
46	-		Turtle Camp	Access Road - Excavating with Dozer fill to be used onsite	217	B.C.Y.	4	788	118	91	10	37	1,044	1,129
46	-		Turtle Camp	Gravel Trail-Base course drainage layers, aggregate base course for	148	SY	6	951	143	109	12	45	1,260	1,363
46	-		Turtle Camp	Parking Lot - Base course drainage layers, aggregate base course for	580	SY	6	3,728	559	429	47	175	4,938	5,341
46	-		Turtle Camp	Access Road - Base course drainage layers, aggregate base course	710	SY	6	4,564	685	525	58	215	6,046	6,539
46	-	_	Turtle Camp	Gravel Trail - Base course drainage layers, prepare and roll sub-bas	148	SY	2	349	52	40	4	16	462	500
46	-		Turtle Camp	Parking Lot - Base course drainage layers, prepare and roll sub-base	580	SY	2	1,366	205	157	17	64	1,809	1,957
46	-	_	Turtle Camp	Access Road - Base course drainage layers, prepare and roll sub-ba	710	SY	2	1,672	251	192	21	79	2,215	2,396
46	-		Turtle Camp	Parking Lot - Pavement markings, parking stall, thermoplastic, white	10.00	Stall	432	4,320	648	497	55	203	5,723	6,190
46	-		Turtle Camp	Parking Lot - Pavement markings, street letters and numbers	25.00	SF	9	217	33	25	3	10	287	311
			Turtle Camp	Timber Retaining wall - timber, 6" x 8"	130	LF	52	6,804	1,021	782	86	320	9,013	9,748
46 46	_		Turtle Camp	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	10.00	EA	289	2,890	434	332	37	136	3,828	4,141

st	Cost												luly 2019
)						(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
جعا					بحصب								
6		Turtle Camp	Site seating, park benches, precast concrete, with backs, wood rails	1.00	EA	1,936	1,936	290	223	24	91	2,565	2,774
6	-	Turtle Camp	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18" >	2.00	EA	107	214	32	25	3	10	283	307
6	-	Turtle Camp	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2.00	EA	57	114	17	13	1	5	151	163
6	-	Turtle Camp	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	133	SY	7	976	146	112	12	46	1,293	1,398
6	-	Turtle Camp	Planting beds preparation, excavate planting pit, heavy soil or clay,	89.00	CY	15	1,347	202	155	17	63	1,784	1,930
6	-	Turtle Camp	Trees Planted in prepared Beds	12.00	EA	588	7,061	1,059	812	89	332	9,353	10,117
6	-	Turtle Camp	Bulletin Board	2.00	EA	963	1,926	289	221	24	91	2,551	2,759
6	-	Turtle Camp	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
_		Camp Creek											
6	-	Camp Creek	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	1,440	SY	26	37,945	5,692	4,364	480	1,784	50,264	54,366
6	-	Camp Creek	Parking Lot - gravel fill, 8" gravel depth, excl surfacing	867	SY	43	37,154	5,573	4,273	470	1,747	49,217	53,233
6	-	Camp Creek	Clearing & grubbing, cut & chip light trees, to 6" diameter	2,820	SY	2	6,937	1,041	798	88	326	9,189	9,939
6	-	Camp Creek	Gravel Trail - Backfill, structural, common earth, 55 H.P. wheeled loa	806	L.C.Y.	20	16,028	2,404	1,843	203	754	21,232	22,964
6	-	Camp Creek	Compaction, riding, vibrating roller, 4 passes, 6" lifts	620	E.C.Y.	8	4,962	744	571	63	233	6,573	7,109
6	-	Camp Creek	Gravel Trail - Excavating with Dozer fill to be used onsite	352	B.C.Y.	8	2,910	437	335	37	137	3,855	4,169
6	-	Camp Creek	Gravel Trail - Slope for Trail Excavating with Dozer fill to be used on	268	B.C.Y.	22	5,820	873	669	74	274	7,710	8,339
6	-	Camp Creek	Parking Lot - Excavating with Dozer fill to be used onsite	265	B.C.Y.	4	963	144	111	12	45	1,276	1,380
6	-	Camp Creek	Gravel Trail- Base course drainage layers, aggregate base course for	1,440	SY	6	9,256	1,388	1,064	117	435	12,261	13,262
6	-	Camp Creek	Parking Lot - Base course drainage layers, aggregate base course for	345	SY	6	2,218	333	255	28	104	2,938	3,178
6	-	Camp Creek	Gravel Trail - Base course drainage layers, prepare and roll sub-bas	1,440	SY	2	3,391	509	390	43	159	4,492	4,858
6	-	Camp Creek	Parking Lot - Base course drainage layers, prepare and roll sub-base	867	SY	2	2,042	306	235	26	96	2,705	2,926
6	-	Camp Creek	Parking Lot - Pavement markings, parking stall, thermoplastic, white	8.00	Stall	432	3,456	518	397	44	162	4,578	4,952
6	-	Camp Creek	Parking Lot - Pavement markings, street letters and numbers	25.00	SF	9	217	33	25	3	10	287	311
6	-	Camp Creek	Timber Retaining wall - timber, 6" x 8"	209	LF	52	10,939	1,641	1,258	138	514	14,491	15,673
6	-	Camp Creek	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	8.00	EA	289	2,312	347	266	29	109	3,063	3,313
6	-	Camp Creek	Site seating, park benches, precast concrete, with backs, wood rails	5.00	EA	1,936	9,678	1,452	1,113	122	455	12,820	13,866
6	-	Camp Creek	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18" >	2.00	EA	107	214	32	25	3	10	283	307
6	-	Camp Creek	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2.00	EA	57	114	17	13	1	5	151	163
6	-	Camp Creek	Bulletin Board	2.00	EA	963	1,926	289	221	24	91	2,551	2,759
6	-	Camp Creek	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
-		Copco Valley Day Use		0.774	0)/		70.010	10.050		00.4	0.400		
6	-	Copco Valley Day Use	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	2,771	SY	26	73,018	10,953	8,397	924	3,433	96,725	104,617
6	-	Copco Valley Day Use	Parking Lot - gravel fill, 8" gravel depth, excl surfacing	8,222	SY	43	352,346	52,852	40,520	4,457	16,566	466,741	504,82
6	-	Copco Valley Day Use	Planting beds preparation, backfill planting pit, on site topsoil, skid	517	CY	71	36,912	5,537	4,245	467	1,735	48,896	52,886
6	-	Copco Valley Day Use	Clearing & grubbing, cut & chip light trees, to 6" diameter	30,890	SY	2	75,989	11,398	8,739	961 2,822	3,573	100,660	108,874
6	-	Copco Valley Day Use	Access Road/ Trail - Backfill, structural, common earth, 55 H.P. who	2,741	L.C.Y.	81	223,079	33,462	25,654		10,488	295,505	319,619
6	-	Copco Valley Day Use	Access Road/ Trail - Compaction, riding, vibrating roller, 4 passes,	2,109	E.C.Y.	6	16,879	2,532 2,672	1,941 2,048	214 225	794 837	22,359 23,594	24,18
6	-	Copco Valley Day Use	Gravel Trail- Base course drainage layers, aggregate base course fo	2,771			17,811			669			25,519
6	-	Copco Valley Day Use	Parking Lot - Base course drainage layers, aggregate base course for	8,222 867	SY	6	52,850 2.042	7,928 306	6,078 235	26	2,485 96	70,009	75,72° 2.920
6	-	Copco Valley Day Use	Parking Lot - Base course drainage layers, prepare and roll sub-base	2,771	SY	2	6,526	979	750	83	307	2,705 8,645	9,35
6	-	Copco Valley Day Use	Gravel Trail - Base course drainage layers, prepare and roll sub-bas		SY	2	19,362	2,904	2,227	245	910	25,648	27,74
6	-	Copco Valley Day Use	Parking Lot - Base course drainage layers, prepare and roll sub-base	8,222 10.00	Stall	432	4,320	2,904	497	55	203	5,723	6,190
6	-	Copco Valley Day Use	Parking Lot - Pavement markings, parking stall, thermoplastic, white	25.00	SF	9	217	33	25	3	10	287	31
6	-	Copco Valley Day Use	Parking Lot - Pavement markings, street letters and numbers	30.00	LF	273	8,196	1,229	943	104	385	10.857	11.74
6		Copco Valley Day Use	Gabion retaining walls, stone filled gabions, stone delivered, galvan	10.00	EA	289	2.890	434	332	37	136	3.828	4.14
6		Copco Valley Day Use	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	6.00	EA	1,936	11,614	1,742	1,336	147	546	15,385	16,64
6	-	Copco Valley Day Use	Site seating, park benches, precast concrete, with backs, wood rails	2.00	EA	1,936	214	32	25	3	10	283	30
6	-	Copco Valley Day Use	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18" x	2.00	EA	57	114	17	13	1	5	283 151	163
6	-	Copco Valley Day Use	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2,435	SY	7	17,870	2,681	2,055	226	840	23,672	25,603
6	-	Coppe Valley Day Use	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	150	CY	15	2,270	2,681	2,055	226	107	3,007	3,25
6	-	Copco Valley Day Use	Planting beds preparation, excavate planting pit, heavy soil or clay,	279	EA	588	164,167	24,625	18,879	2,077	7,719	217,467	235,212
6	-	Coppe Valley Day Use	Trees Planted in prepared Beds	2.00	EA	963	1,926	24,625	18,879	2,077	7,719	2,551	235,21
6	-	Coppe Valley Day Use	Bulletin Board	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,35
6	-	Copco 2 BH Alt 1	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	555	OF.	220	75,028	11,344	0,097	957	3,000	100,162	100,35
		Copco 2 PH Alt 1	Crowd Trail Crowd fill 4" group death 9 Finish Crading	722	SY	26	19,025	2,854	2,188	241	894	25,202	27,25
6		Copco 2 PH Alt 1	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	164	CY	71	11,709	1,756	1,347	148	551	15,511	16,77
6		Copco 2 PH Alt 1	Planting beds preparation, backfill planting pit, on site topsoil, skid	195	L.C.Y.	3	11,709	7,756	1,347	6	24	15,511	72
6	-	Copco 2 PH Alt 1	Gravel Trail - Backfill, in 8" layers, spreading, small dozer, includes	1,441	L.C.Y.	3	3,720	558	428	47	175	4,928	5,33
6	-	Copco 2 PH Alt 1	Paved Access Road - Backfill, in 8" layers, spreading, small dozer, i	1,441	B.C.Y.	4	545	82	63	7	26	722	5,33
	-	Copco 2 PH Alt 1	Gravel Trail - Excavating with Dozer fill to be used onsite Paved Access Road - Excavating with Dozer fill to be used onsite		B.C.Y.	4	4,025	604	463	51	189	5,332	78 5,76
6			Payer access Poar - Everyating with Dozer till to be used oneite	1,108	D.U.Y.	4	4,025	604	463		189	5,332	
6		Copco 2 PH Alt 1			C.F.	70	EO 400	0.010	6 000	750	2.700	70 700	05.40
6	-	Copco 2 PH Alt 1 Copco 2 PH Alt 1 Copco 2 PH Alt 1	Docks, floating, recreational, prefabricated galvanized steel with pol Gravel Trail-Base course drainage layers, aggregate base course for	796 722	SF SY	75 6	59,463 4.641	8,919 696	6,838 534	752 59	2,796 218	78,769 6.148	85,19 6.64

NKI	RC C	Cost Estimate - Full Removal										J	uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
16	-	Copco 2 PH Alt 1	Paved Access Road - Base course drainage layers, prepare and roll	3,990	SY	2		1,409	1,081	119	442	12,447	13,462
16	-	Copco 2 PH Alt 1	Paved Access Road - Asphaltic concrete paving, parking lots & driv	35,914	SF	4	157,896	23,684	18,158	1,997	7,424	209,160	226,227
16	-	Copco 2 PH Alt 1	Parking Lot - Pavement markings, parking stall, thermoplastic, white	10.00	Stall	432	4,320	648	497	55	203	5,723	6,190
16	-	Copco 2 PH Alt 1	Parking Lot - Pavement markings, street letters and numbers	25.00	SF	9	217	33	25	3	10	287	311
46	-	Copco 2 PH Alt 1	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	10.00	EA	289	2,890	434	332	37	136	3,828	4,141
16	-	Copco 2 PH Alt 1	Site seating, park benches, precast concrete, with backs, wood rails	3.00	EA	1,936	5,807	871	668	73	273	7,692	8,320
16	-	Copco 2 PH Alt 1	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18" x	2.00	EA	107	214	32	25	3	10	283	307
16	-	Copco 2 PH Alt 1	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po	2.00	EA	57	114	17	13	1	5	151	163
16	-	Copco 2 PH Alt 1	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	986	SY	7	7,236	1,085	832	92	340	9,585	10,367
46	-	Copco 2 PH Alt 1	Planting beds preparation, excavate planting pit, heavy soil or clay,	60.00	CY	15	908	136	104	11	43	1,203	1,301
46	-	Copco 2 PH Alt 1	Trees Planted in prepared Beds	113	EA	588	66,491	9,974	7,646	841	3,126	88,078	95,266
46	-	Copco 2 PH Alt 1	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
		Iron Gate Hatchery Rec Area											
16	-	Iron Gate Hatchery Rec Area	Gravel Trail - Gravel fill, 4" gravel depth & Finish Grading	773	SY	26	20,369	3,055	2,342	258	958	26,982	29,184
16	-	Iron Gate Hatchery Rec Area	Planting beds preparation, backfill planting pit, on site topsoil, skid	572	CY	71	40,838	6,126	4,696	517	1,920	54,097	58,511
16	-	Iron Gate Hatchery Rec Area	Gravel Trail - Backfill, in 8" layers, spreading, small dozer, includes	195	L.C.Y.	3	503	75	58	6	24	666	721
16	-	Iron Gate Hatchery Rec Area	Paved Access Road - Backfill, in 8" layers, spreading, small dozer, i	1.434	L.C.Y.	3	3,702	555	426	47	174	4.904	5.304
16	-	Iron Gate Hatchery Rec Area	Gravel Trail - Excavating with Dozer fill to be used onsite	150	B.C.Y.	4		82	63	7	26	722	781
16	-	Iron Gate Hatchery Rec Area	Paved Access Road - Excavating with Dozer fill to be used onsite	1,103	B.C.Y.	4		601	461	51	188	5,307	5,740
16	-	Iron Gate Hatchery Rec Area	Docks, floating, recreational, prefabricated galvanized steel with pol	796	SF	75	59.463	8.919	6.838	752	2.796	78,769	85,196
16	-	Iron Gate Hatchery Rec Area	Gravel Trail- Base course drainage layers, aggregate base course for	773	SY	6	4,969	745	571	63	234	6,582	7,119
16	-	Iron Gate Hatchery Rec Area	Gravel Trail - Base course drainage layers, prepare and roll sub-bas	773	SY	2		273	209	23	86	2,411	2.608
16	-	Iron Gate Hatchery Rec Area	Paved Access Road - Base course drainage layers, prepare and roll	3,970	SY	2	9.349	1,402	1.075	118	440	12.384	13,395
16	-	Iron Gate Hatchery Rec Area	Paved Access Road - Asphaltic concrete paving, parking lots & driv	35,734	SF	4	-,	23,566	18,067	1,987	7,387	208,112	225,094
46	-:-	-	Parking Lot - Pavement markings, parking stall, thermoplastic, white	32.00	Stall	432	13,824	2,074	1,590	175	650	18,312	19,806
		Iron Gate Hatchery Rec Area		25.00	SF	9	217	33	25	3	10	287	311
16 16		Iron Gate Hatchery Rec Area	Parking Lot - Pavement markings, street letters and numbers	183	LF	52	9,578	1,437	1,101	121	450	12,688	13,723
		Iron Gate Hatchery Rec Area	Timber Retaining wall - timber, 6" x 8"	32.00	EA	289	9,248	1,387	1,064	117	435	12,000	13,723
16		Iron Gate Hatchery Rec Area	Parking Lot - Precast concrete parking bumpers, wheel stops, preca	2.00	EA	1.936		581	445	49	182	5,128	5,546
16	-	Iron Gate Hatchery Rec Area	Site seating, park benches, precast concrete, with backs, wood rails		EA	107	214	32	25	3	102	283	307
16	-	Iron Gate Hatchery Rec Area	Parking Lot - Handicap Sign - Signs, stock signs, reflectorized, 18"x	2.00	EA	57	114	17	13	1	5	151	163
16	-	Iron Gate Hatchery Rec Area	Parking Lot - Handicap Sign - Signs, 10'-0", add to above for steel po			7	25,194	3,779	2,897	319		33,374	
16		Iron Gate Hatchery Rec Area	Soil preparation, mulching, redwood nuggets, 3" deep, hand spread	3,433	SY						1,185		36,097
16		Iron Gate Hatchery Rec Area	Planting beds preparation, excavate planting pit, heavy soil or clay,	165	CY	15	2,497	375	287	32	117	3,308	3,578
16	-	Iron Gate Hatchery Rec Area	Trees Planted in prepared Beds	309	EA	588	181,819	27,273	20,909	2,300	8,549	240,850	260,503
16	-	Iron Gate Hatchery Rec Area	Bulletin Board	2.00	EA	963	1,926	289	221	24	91	2,551	2,759
16	-	Iron Gate Hatchery Rec Area	Vaulted Toilet and Pay Station - Comfort stations, prefab, stock, with	335	SF	226	75,628	11,344	8,697	957	3,556	100,182	108,357
		Downstream Flood Control Improvements							-	-			
17	-	Downstream Flood Control Improvements	[Stakeholder Cover] Downstream Flood Control Improvements				-	-	-	-	-	•	-
		Public Health and Safety Fencing											
48	-	Public Health and Safety Fencing	Cattle exclusion fencing	182,160	LF	10	1,870,885	280,633	215,152	23,667	87,963	2,478,299	2,665,476
		Fire Management Planning											
19	-	Fire Management Planning	Current estimate for Fire Management	3.00	EA	800,000	2,400,000	-	240,000	26,400	112,840	2,779,240	3,006,026
		Spawning Gravel Augmentation											
		Vegetation Maintenance & Monitoring											
19A	-	Establishment Maintenance & Monitoring	[LTC Cover] 2024 Monitoring monthly from November 1 through April	-	-	•	-	-	-	-	-	-	-
19A	-	Establishment Maintenance & Monitoring	[LTC Cover] 2024 Maintenance	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2025 Monitoring bi-monthly from Nov. 1 through April 1 a	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2025 Maintenance (assuming 80% of the restored areas	-	-		-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2026 Monitoring once from November 1 through April 1	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2026 Maintenance (assuming 60% of the restored areas	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2027 Monitoring bi-monthly from April 1 through Novemb	-	-	•	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2027 Maintenance (assuming 40% of the restored areas	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2028 Monitoring spring and fall (2 visits per year)	-	-	-	-	-	-	-	-	-	-
19A	-	Long Term Maintenance & Monitoring	[LTC Cover] 2028 Maintenance (assuming 20% of the restored areas	-	-	-	-	-	-	-	-	-	-
		Mainstem spawning (AR-1)											
19A	-	Mainstem spawning (AR-1)	Confluence Area Maintenance (downstream tribs)	1,350	HR	55	74,250	11,138	8,539	939	3,491	98,357	112,850
19A	-	Mainstem spawning (AR-1)	Confluence Area Maintenance (upstream tribs)	600	HR	55	33,000	4,950	3,795	417	1,552	43,714	50,156
+9A	-	Mainstem spawning (AR-1)	Spawning Gravel Augmentation	16,132	CY	217	3,506,957	526,043	403,300	44,363	164,886	4,645,549	5,225,610
19A		Mainstem spawning (AR-1)	Laborer (30 days)	200	HR	70	14,000	2,100	1,610	177	658	18,545	20,861
	-			000	HR	250	90,000	13,500	10,350	1,139	4,232	119,220	134,106
19A	-	Mainstem spawning (AR-1)	200 Class Excavator (30 days)	360	I III	200					.,202	113,220	
19A 19A			200 Class Excavator (30 days)	360	ПК	200				,	1,202	119,220	,
19A 19A		Mainstem spawning (AR-1)	200 Class Excavator (30 days) [LTC Cover] Compensatory migration in Oregon	360	-	-	-	-	-	-	-	-	-
19A 19A 19A	-	Mainstem spawning (AR-1) Wetland Mitigation (TER-5)				-	-	-					-

_		ost Estimate - Full Removal						•					<u>luly 2019</u>
st	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
)	Sheet	Heading Description		Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimat
		MITIGATION MEASURES											
		Groundwater Analysis											
1		Groundwater Analysis AECOM FY17/		1.00	YR	43,222	43,222	-	-	-	-	43,222	43,222
1		Groundwater Analysis AECOM FY18/		1.00	YR	204,120	204,120	-	-	-	-	204,120	204,12
1			20 Preliminary Services - Coordination & Outreach	1.00	YR	16,000	16,000	-	-	-	-	16,000	16,32
1			ell owners - meetings	10.00	EA	8,700	87,000	-	-	-	-	87,000	92,36
1			ell owners - followup calls	1.00	LS	33,000	33,000	-	-	-	-	33,000	35,033
1			Cover] Drill and install new monitoring wells	-	-	-	-	-	-	-	-	-	-
1			cover] Water level monitoring of new wells - modification	-	-	-	-	-	-	-	-	-	-
1			Cover] Water level monitoring of new wells - monitoring	-	-	-	-	-	-	-	-	-	-
			Cover] WQ laboratory analytical testing (per well)		-	-	-	-	-	-	-	-	-
1			Cover] Well replacements	-	-	-	-	-	-	-	-	-	-
1			Cover] Well abandonment		-	-	-	-	-	-	-	-	
1			Cover] Temporary water supply		-	-	-	-	-	-	-	-	-
1			cover] Permitting and Reporting	-	-	-	-	-	-	-	-	-	-
		Downstream Water Supply/Rights		3.379	Т	175	591.357		_			591.357	678,50
2		Downstream Water Supply/Rights Hay production		1.00	LS	8,666	8,666	-	-	-	-	8,666	9,94
2			or domestic use for water rights	254	CY	500	126,999		-	-	-	126,999	145,714
2		Downstream Water Supply/Rights Sediment remo		9.00	EA	10.000	90,000	-	-	-		90,000	103,263
2		Downstream Water Supply/Rights Groundwater w		1.00	EA	100,000	100,000	-	-	-	-	100,000	114,736
2			vells - municipal	39.00	EA	1.852	72,222	-	-	-	-	72,222	82,865
2		Downstream Water Supply/Rights Sediment basis	In .	39.00	EA	1,052	12,222	-	-	-	-	12,222	02,000
		Cultural Resources											
3		Actuals Accompany Accompany	18 Cultural Resources, AECOM	1.00	YR	1,080,880	1,080,880		-			1,080,880	1,080,880
3			19 Cultural Resources, AECOM	1.00	YR	1,453,410	1,453,410		-	-	-	1,453,410	1,453,410
,		2019 H1 Support	19 Cultulal Resources, AECOW	1.00	110	1,433,410	1,433,410	_		-	_	1,455,410	1,400,410
3				6.00	MO	168,958	1,013,750	-				1,013,750	1,013,750
,		Cultural Resources Tasks Generally 2019 H2 Support		0.00	IVIO	100,550	1,013,730	_		-	_	1,013,730	1,013,730
3		Task management Principal Scien	ntint/Planner	208	HR	900	187,200	-				187,200	194,688
3		Task 1.2A Agency consultation Principal Scien		83.20	HR	180	14,976	-	-		-	14,976	15,575
3		Task 1.2A Agency consultation Senior Scientis		41.60	HR	160	6,656	_	-	-	-	6,656	6,922
3		Task 1.2B Tribal consultation and work plans Principal Scien		256	HR	180	46,080	_	-	-	-	46,080	47,923
3		Task 1.2B Tribal consultation and work plans Senior Scientis Senior Scientis		128	HR	160	20,480	_	-	-	-	20,480	21,299
3		Task 1.2B Tribal consultation and work plans Technical Edit		16.00	HR	105	1,680	-	-	-	-	1.680	1.747
3		Task 1.2B Tribal consultation and work plans GIS/CADD/Gra		24.00	HR	90	2,160	-	-	-	-	2,160	2,246
3		Submerged Resources Report Preparation co		1.00	EA	2,160	2,160	-	-			2,160	2,160
		2020 H2 Support	100										_,
3			g group meetings	10.00	MO	29,800	298,000	-	-	-		298,000	309,920
3		Task 1.2B Tribal consultation and work plans Monthly tribal m		10.00	MO	15,200	152,000	-	-	-	-	152,000	158.080
		2021-2024 Support	noungo				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
3		Task management Principal Scien	ntist/Planner	1,040	HR	180	187,200	-		-		187,200	219,227
3		Task 1.2A Agency consultation Principal Scien		416	HR	180	74.880	-	-	-	-	74,880	87,69
3		Task 1.2A Agency consultation Senior Scientis		208	HR	160	33,280	-	-	-	-	33,280	38,974
3		Task 1.2B Tribal consultation and work plans Principal Scien		1,280	HR	180	230,400	-	-	-	-	230,400	269,817
3		Task 1.2B Tribal consultation and work plans Senior Scientis		640	HR	160	102,400	-	-	-	-	102,400	119,919
3		Task 1.2B Tribal consultation and work plans Technical Edit		80.00	HR	105	8,400	-	-	-	-	8,400	9,837
3		Task 1.2B Tribal consultation and work plans GIS/CADD/Gra		120	HR	90	10,800	-	-	-	-	10,800	12,648
3		Task 2.6L Curation Principal Scien		80.00	HR	180	14,400	-	-	-	-	14,400	16,754
3		Task 2.6L Curation Scientist/Plant		1,640	HR	120	196,800	-	-	-	-	196,800	228,97
3		Task 2.6L Curation Curation		410	EA	500	205,000	-	-	-	-	205,000	238,512
3		Task 2.6L Curation Other direct con	osts	1.00	SUM	5,000	5,000	-	-	-	-	5,000	5,817
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Principal Scien		200	HR	180	36,000	-	-	-	-	36,000	40,49
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Senior Scientis		290	HR	160	46,400	-	-	-	-	46,400	52,19
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Scientist/Plant		1,180	HR	120	141,600	-	-	-	-	141,600	159,28
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Technical Edit		40.00	HR	105	4,200	-	-	-		4,200	4,72
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Junior Scientis		10.00	HR	95	950	-	-	-		950	1,06
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey GIS/CADD/Gra		100	HR	90	9,000	-	-	-	-	9,000	10,12
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Tribal monitor		149	DA	617	91,933	-	-	-		91,933	103,41
3		Task 2.6M Arch fieldwork - Drawdown shoreline survey Travel and percentage of the survey Travel and the survey Travel and percentage of the survey Travel and the survey Travel a		1.00	SUM	35,858	35,858	-	-	-	-	35,858	40,33
3		Task 2.6M Arch fieldwork - Post drawdown survey Principal Scier		200	HR	180	36,000	-	-	-	-	36,000	42,11
3		Task 2.6M Arch fieldwork - Post drawdown survey Senior Scientis		98.00	HR	160	15,680	-	-	-	-	15,680	18,34
3		Task 2.6M Arch fieldwork - Post drawdown survey Scientist/Plant		972	HR	120	116,640	-	-	-	-	116,640	136,45
		Task 2.6M Arch fieldwork - Post drawdown survey Technical Edit		40.00	HR	105	4,200	-		-		4,200	4,91

		Cost Estimate - Full Removal											uly 2019
Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
D	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
53	-	Task 2.6M Arch fieldwork - Post drawdown survey	Junior Scientist/Planner	20.00	HR	95	1,900	-	-	-	-	1,900	2,223
53	-	Task 2.6M Arch fieldwork - Post drawdown survey	GIS/CADD/Graphics	120	HR	90	10,800	-	-	-	-	10,800	12,634
53	-	Task 2.6M Arch fieldwork - Post drawdown survey	Field Technician	768	HR	75	57,600	-	-	-	-	57,600	67,384
53	-	Task 2.6M Arch fieldwork - Post drawdown survey	Tribal monitor subcontract	77.00	DA	648	49,884	-	-	-	-	49,884	58,358
53	-	Task 2.6M Arch fieldwork - Post drawdown survey	Travel and perdiem	1.00	SUM	30,900	30,900	-	-		-	30,900	36,149
53	-	Task 2.6N Discoveries - Burial recovery	Human remains	100	EA	15,000	1,500,000	-	-	-	-	1,500,000	1,756,624
53		Task 2.6N Discoveries - Burial recovery	Other direct costs	1.00	SUM	500	500		-	-	_	500	586
53		Task 2.6N Discoveries - Arch resources	Archaelogical unit cost	60.00	EA	30,000	1,800,000		-	-	-	1,800,000	2,107,949
53		Task 2.6N Discoveries - Arch resources	Other direct costs	1.00	SUM	500	500		-			500	586
3				240	HR	180	43,200		-		-	43,200	49,566
		Task 2.60 Short-term monitoring FY 2021-2022	Principal Scientist/Planner	1,808	HR	160	289,280		-	-	-	289,280	331,909
53		Task 2.60 Short-term monitoring FY 2021-2022	Senior Scientist/Planner		HR	120			-	-			
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Scientist/Planner	1,928			231,360				-	231,360	265,454
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Technical Editor	40.00	HR	105	4,200	-	-	-	-	4,200	4,819
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Junior Scientist/Planner	40.00	HR	95	3,800		-	-	-	3,800	4,360
53	-	Task 2.60 Short-term monitoring FY 2021-2022	GIS/CADD/Graphics	120	HR	90	10,800	-	-	-	-	10,800	12,392
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Field Technician	7,680	HR	75	576,000	-	-	-	-	576,000	660,880
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Tribal monitor subcontract	452	EA	617	278,884	-	-	-	-	278,884	319,981
53	-	Task 2.60 Short-term monitoring FY 2021-2022	Other direct costs	1.00	SUM	127,984	127,984	-	-	-	-	127,984	146,844
53	-	Task 2.60 Short-term monitoring FY 2023-2025	Principal Scientist/Planner	240	HR	180	43,200	-	-	-	-	43,200	54,690
53	-	Task 2.60 Short-term monitoring FY 2023-2025	Senior Scientist/Planner	1,176	HR	160	188,160	-	-	-	-	188,160	238,205
53	-	Task 2.60 Short-term monitoring FY 2023-2025	Scientist/Planner	1,536	HR	120	184,320	-	-	-	-	184,320	233,343
53	-	Task 2.60 Short-term monitoring FY 2023-2025	Technical Editor	40.00	HR	105	4,200	-	-	-	-	4,200	5,317
53		Task 2.60 Short-term monitoring FY 2023-2025	Junior Scientist/Planner	40.00	HR	95	3.800	-	-	-	-	3,800	4.811
53	-	Task 2.60 Short-term monitoring FY 2023-2025	GIS/CADD/Graphics	230	HR	90	20,700	-		-	-	20,700	26,206
53		Task 2.60 Short-term monitoring FY 2023-2025	Field Technician	7,680	HR	75	576,000		-	-	-	576,000	729,198
53		Task 2.60 Short-term monitoring FY 2023-2025	Tribal monitor subcontract	294	EA	648	190,468		-		-	190,468	241,126
53		Task 2.60 Short-term monitoring FY 2023-2025	Other direct costs	1.00	SUM	57,448	57,448		-	-		57,448	72,727
				1.00	SUM	1,000,000	1,000,000		-	-	-	1,000,000	1,000,000
53		TCP Project allowance	TCP Project allowance	1.00	SUM	1,000,000	1,000,000		-		-	1,000,000	1,000,000
53	-	Cultural resources allowance	Allowance for additional discoveries (reconciled with risk log)	1.00	SUIVI	1,000,000	1,000,000	-	-	-	-	1,000,000	1,000,000
		MONITORING & REPORTING (KRRC)											
		Aquatic Resource Measures											
		Mainstem spawning (AR-1)											
31	-	Mainstem spawning (AR-1)	Tributary confluence monitoring (passage)	1,080	HR	86	93,000	-	-	-	-	93,000	106,705
31	-	Mainstem spawning (AR-1)	[inc in PDB] Confluence Area Maintenance (downstream tribs)	1,350	HR	-	-	-	-	-	-	-	-
31	-	Mainstem spawning (AR-1)	[inc in PDB] Confluence Area Maintenance (upstream tribs)	600	HR	-	-	-	-	-	-	-	-
31	-	Mainstem spawning (AR-1)	[LTC Cover] Mainstem Spawning Gravel Survey	-	-	-	-	-	-	-	-	-	-
31	-	Mainstem spawning (AR-1)	[LTC Cover] Tributary Spawning Gravel Survey	-	-	-	-	-	-	-	-	-	-
31	-	Mainstem spawning (AR-1)	[LTC Cover] Reporting and Coordination	-	-	-	-	-	-	-	-	-	-
31	-	Mainstem spawning (AR-1)	[inc in PDB] Spawning Gravel Augmentation	16,132	CY	-	-	-	-	-	-	-	-
61	-	Mainstem spawning (AR-1)	[inc in PDB] Laborer (30 days)	200	HR	-	-	-	-		-	-	-
51	-	Mainstem spawning (AR-1)	[inc in PDB] 200 Class Excavator (30 days)	360	HR	-	-	-	-	-	-	-	-
, ,		Juvenile outmigration (AR-2)	[mo m r BB] 200 Glado Executator (co dayo)										
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Tributary Confluence Monitoring (Passage)	_		-		-	-		-	-	-
61		Juvenile outmigration (AR-2)	[LTC Cover] Tributary Confluence Monitoring (I assage)	_									-
61	-	" ' '											
		Juvenile outmigration (AR-2)	[LTC Cover] 2019 Mainstern Winter Seining Recon						-				
31	-	Juvenile outmigration (AR-2)	[LTC Cover] 2020 Mainstern Winter Seining (Coho) (3.3)	-				-				-	
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Fish Transport (1 Truck)			•		•	-	•			-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Fish Rescue and relo Crew	-	-			-	-	-		-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Fish Transport (2 Trucks)		-	-	-	-	-	-		-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Reporting and Coordination	-	-	-	-	-	-	-	-	-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Miscellaneous Equipment	-	-	-	-	-	-		-	-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] H2O Monitoring Equipment	-	-	-	-	-	-	-	-	-	-
61	-	Juvenile outmigration (AR-2)	[LTC Cover] H2O Monitoring Equipment	-	-	-	-	-	-	-	-	-	-
61	-	Juvenile outmigration (AR-2)	[LTC Cover] Technician Equipment	-	-	-	-	-	-	-	-	-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Transport Vehicle Rental (\$300/day for 21 days)	-	-	-	-	-	-	-	-	-	-
31	-	Juvenile outmigration (AR-2)	[LTC Cover] Transport Vehicle Operational Cost (\$0.75/mi)		-	-	-	-	-		-	-	-
		Sucker rescue and relo plan (AR-6)	(7.1.0/111)										
31	-	Sucker rescue and relo plan (AR-6)	Sucker Recapture Study (Spring and Fall) (3.3)	1,680	HR	83	140,000	-	-		-	140,000	145,675
31	-	Sucker rescue and relo plan (AR-6)	[LTC Cover] Sucker Salvage	- ,	-	-		-	-		-		- 10,010
-1	-:-	Sucker rescue and relo plan (AR-6)	[LTC Cover] Sucker Transport (1 Truck)	_	-				_				_
31									-				-
31		Sucker rescue and relo plan (AR-6)	[LTC Cover] Reporting and Coordination			•		-	_			-	
61		0	E TO O A D A Flactor Cala										
61 61	-	Sucker rescue and relo plan (AR-6)	[LTC Cover] Boat Electrofisher	-	-	-	-	-	-			-	
61	•	Sucker rescue and relo plan (AR-6) Sucker rescue and relo plan (AR-6) Sucker rescue and relo plan (AR-6)	[LTC Cover] Boat Electrofisher [LTC Cover] Boats (2 boats) [LTC Cover] Technician Equipment	-	-	-	-		-	-	-	-	

		ost Estimate - Full Removal			_								uly 2019
Est D	Cost			Qty	Unit	(\$) Rate	(\$) Direct Cost	15% MU by Sub	10% PDB OH&P	1% Bonds	Field Overhead	(\$) Estimate	Escalated YOC Estimate
)	Sheet	Heading	Description	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overnead	Estimate	YOC Estimate
		Condition was and state along (A.D. C)	TO Complete Ferrinant										
1	-		[LTC Cover] Tagging Equipment	-	-	-	-	-	-	-	-	-	_
1	-		[LTC Cover] Transport Vehicle Rental (\$300/day)	-	-	•	-	-	-	-	•		
1	-		[LTC Cover] Transport Vehicle Operational Cost (\$0.75/mi)	-	-	-	-	-	-		•	-	-
	-	Freshwater mussel relo (AR-7)											
61	-		Freshwater Mussel Reconnaissance	400	HR	89	35,600	-	-	-	-	35,600	35,600
61	-	Freshwater mussel relo (AR-7)	[LTC Cover] Mussel Salvage and relo	-	-	-	-	-	-	-	-	-	-
31	-	Freshwater mussel relo (AR-7)	[LTC Cover] Mussel Transport (1 Truck)	-	-	-	-	-	-	-	-	-	-
31	-	Freshwater mussel relo (AR-7)	[LTC Cover] Reporting and Coordination	-	-	-	-	-	-	-	-	-	-
61	-	Freshwater mussel relo (AR-7)	[LTC Cover] Miscellaneous Equipment	-	-	-	-	-	-	-	-	-	-
61	-		[LTC Cover] Diving Gear	-	-	-	-	-	-	-	-	-	-
61			[LTC Cover] Technician Equipment	-	-	-	-	-	-	-	-	-	-
31			[LTC Cover] Transport Vehicle Rental (\$300/day)		-	-	-	-	-		-	-	-
61	-		[LTC Cover] Transport Vehicle Operational Cost (\$0.75/mi)	-		-	-	-	-		-		-
"		Terresrial Resource Measures	ETO COVERT Transport Vernote Operational Cost (\$0.76/1117)										
20		Biological Monitoring - Generally	A E O O M E (47/40 E) (40 0 TEE)	1.00	YR	656,078	656,078	_	-			656,078	656,078
32	-		AECOM FY17/18 Planning (AQ & TER)	1.00	YR	954,937	954,937			- :	-	954,937	954,937
32	-		AECOM FY18/19 Planning (AW & TER)						-		-		
32	-		AECOM FY19/20 Prelim Services - Coordination	1.00	YR	64,000	- 7	-		-		64,000	64,000
32	-		AECOM FY20/21 Prelim Services / Dam Mods	1.00	YR	66,000	66,000	-	-	-	-	66,000	66,000
32	-	Biological Monitoring (4.2)	[LTC Cover] AECOM FY21/22 Dam Mods / Dam Removal - Coordinate	-	-	-	-	-	-	-	-	-	-
62	-	Biological Monitoring (4.2)	[LTC Cover] AECOM FY22/23 Dam Removal & Restoration - Coordin	-	-	-	-	-	-	-	-	-	-
62	-	Biological Monitoring (4.2)	[LTC Cover] AECOM FY23/24+ Post Construction - Coordination	-	-	-	-	-	-	-	-	-	-
		Habitat restoration plan (TER-1)											
62	-	Habitat restoration plan (TER-1)	Included in vegetation restoration	-	-	-	-	-	-	-	-	-	-
		Nesting Bird Surveys (TER-2)											
62			[LTC Cover] Osprey nest platform management - Contractor	-	-	-	-	-		-	-	-	-
62			[LTC Cover] Osprey nest platform management			-		_	-		-	-	-
32			[LTC Cover] Osprey nest exclusion monitoring			-	-	_	-				-
32	-			-	-	-	-	-	-			-	-
02	-		[LTC Cover] Osprey nest regulatory compliance and reporting		-			_				-	_
		Nesting Bird Surveys (TER-2)		4.00	VD	07.000	37,080	_	_	-		37,080	37,822
52	-		AECOM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services - NSO	1.00	YR	37,080			-	-	-		
32	-		AECOM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services - Nesting	1.00	YR	266,208	266,208	-				266,208	271,532
32	-		[LTC Cover] Cliff swallow nest management - Contractor	•	-	-	-	-	-	-	-	-	-
32	-		[LTC Cover] Cliff swallow nest management	-	-	-	-	-	-	-	-	-	-
62	-	Nesting Bird Surveys (TER-2)	[LTC Cover] Cliff swallow nest exclusion monitoring	-	-	-	-	-	-	-	-	-	-
32	-	Nesting Bird Surveys (TER-2)	[LTC Cover] Biological monitoring, nest site monitoring	-	-	-	-	-	-	-	-	-	-
62	-	Nesting Bird Surveys (TER-2)	[LTC Cover] Biological monitoring, construction site monitoring & w	-	-	-	-	-	-	-	-	-	-
62	-	Nesting Bird Surveys (TER-2)	[LTC Cover] Compliance reporting	-	-	-	-	-	-	-	-	-	-
62	-	Nesting Bird Surveys (TER-2)	[LTC Cover] Post construction special status species monitoring	-	-	-	-	-	-	-	-	-	-
32			[LTC Cover] Post construction special status regulatory compliance	-	-	-	-	-	-	-	-	-	-
		Bald and Golden Eagle (TER-3)	,,,,,,,,,										i
32			AECOM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services	1.00	YR	Included	Included	_	-	-	-	-	-
32	-		Project Management/Task Oversight	1.00	EA	38,800	38,800	_			-	38,800	44,552
_		* * * * * * * * * * * * * * * * * * * *		1.00	EA	49.819	49.819	_	-	-	-	49.819	53.884
32			1 pre-construction survey in the early breeding season the year before	1.00	EA	71.819				-	-	71,819	77,679
32	-		1 pre-construction survey within 2 weeks prior to construction		HR					-	-		
32	-		Pre-construction surveys (3x/year) if construction start is delayed from	1.00	EA	191,457 28,560	191,457	-	-	-	-	191,457	191,457
32	-		Eagle Avoidance and Minimization Plan				28,560					28,560	29,131
32	-		[LTC Cover] Biological monitoring during construction	-	-	-	-	-	-	-			-
62	-	Bald and Golden Eagle (TER-3)	[LTC Cover] Reporting (1x/year for 5 years)	-	-	-	-	-	-	-	-	-	-
32	-	Bald and Golden Eagle (TER-3)	[LTC Cover] Meetings (agency, internal team, etc.)	-	-	-	-	-	-	-	-	-	-
32	-	Bald and Golden Eagle (TER-3)	USFWS take permit/Eagle Conservation Plan	1.00	HR	-	Risk Log	-	-	-	-	-	-
32	-	Bald and Golden Eagle (TER-3)	Post-Construction Eagle Surveys (3x/year for 5 years, only req'd if the	1.00	HR	-	Risk Log	-	-	-	-	-	-
		Special Status Plants (TER-4)											i
32	-		AECOM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services	1.00	YR	56,208	56,208	-	-	-	-	56,208	57,332
2			[LTC Cover] Relo and monitoring - additional 2019 work (extended so	-	-	-	-	-	-	-	-		-
2	-		[LTC Cover] Relo and monitoring - additional 2019 work (extended st	-	-	-	-	-	-	-	-	-	
,_		Wetland Mitigation (TER-5)	ET O COVERT INGIO and monitoring										
			Facilia DDD3 Communication in Commun	1.00	EA	-	_	_				_	
32	-		[inc in PDB] Compensatory migration in Oregon								-		
2	-		[inc in PDB] Wetland migration monitoring	1.00	EA	-	-	-	-	-		-	-
2	-		[inc in PDB] Reporting and regulatory compliance	1.00	EA	-	-	-	-	-	-	-	-
		Western Pond Turtle (TER-7)											
2	-	Western Pond Turtle (TER-7)	AECOM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services	1.00	YR	-	Included	-	-	-	-	-	-
32	-	Western Pond Turtle (TER-7)	Wetland creation in Oregon - approximately 0.5 acres	1.00	EA	21,000	21,000	-	-	-	-	21,000	21,937
			Investigation of turtle population - 1 additional year	1.00	EA	52,500	52,500				-	52,500	54,844

KRRC Cost Estimate - Full Removal

Description	L/L	KC C	osi Esiiliale - Full Kellioval										J	uiy 20 19
Western Pond Turlle (TER7) Capture and relo of turlles 1.00 EA 36.750 36.750 3.749	Est	Cost					(\$)	(\$)	15%	10%	1%	Field	(\$)	Escalated
Nestern Pond Turtie (TER-7) Refor furties to Klamath 1.00 EA 24,000 21,000 - - - 24,000 23,622	ID	Sheet	Heading	scription	Qty	Unit	Rate	Direct Cost	MU by Sub	PDB OH&P	Bonds	Overhead	Estimate	YOC Estimate
Nestern Pond Turtie (TER-7) Refor furties to Klamath 1.00 EA 24,000 21,000 - - - 24,000 23,622								,				ĺ		
Western Pond Turlie (TER7) Monitoring 1.00 EA 42.000 42.000 - - - 42.000 48.126	62	-	Western Pond Turtle (TER-7) Capt	oture and relo of turtles	1.00	EA	36,750	36,750	-	-	-	-	36,750	39,749
Western Prond Turlle (TER-7) Reporting and Regulatory Compliance 1.0.0 EA 26.250	62	-	Western Pond Turtle (TER-7) Relo	o of turtles to Klamath	1.00	EA	21,000	21,000	-	-	-	-	21,000	23,622
Special Status Bats (TER-6)	62	-	Western Pond Turtle (TER-7) Monit	nitoring	1.00	EA	42,000	42,000	-	-	-	-	42,000	48,126
Special Status Bats (TER-6) AECOM Both Monitoring (2, 6, 2) FY 19/20 Prelim Services 1.00 VR .	62	-	Western Pond Turtle (TER-7)	porting and Regulatory Compliance	1.00	EA	26,250	26,250	-	-	-	-	26,250	28,436
Special Status Bats (TER6) Pre-Demolition Exclusion Oersight 1.00 EA 112,790 1.12,790			Special Status Bats (TER-6)											
Special Status Bats (TER6) Bat Management Plan (Final) 1.00 EA 22.300 22.300	62	-	Special Status Bats (TER-6) AEC	COM Bio Monitoring (2.5, 4.2) FY19/20 Prelim Services	1.00	YR	-	Included	-	-	-	-	-	-
Special Status Bats (TER-6) Re-assess Structures within One Year Prior to Drawdown 1.00 EA 22,500 22,500 - - - - 22,500 24,336	62	-	Special Status Bats (TER-6)	-Demolition Exclusion Oversight	1.00	EA	112,790	112,790	-	-	-	-	112,790	122,056
Special Status Bats (TER-6) Biological Monitoring 1.00 EA 119,080 119,080 - - - 119,080 139,378	62	-	Special Status Bats (TER-6) Bat M	Management Plan (Final)	1.00	EA	22,300	22,300	-	-	-	-	22,300	23,147
Special Status Bats (TER-6) Agency Coordination/Meetings 1.00 EA 50,770 50,770 - - - 50,770 54,919	62	-	Special Status Bats (TER-6)	assess Structures within One Year Prior to Drawdown	1.00	EA	22,500	22,500	-	-	-	-	22,500	24,336
Special Status Bats (TER-6) Design Replacement Roosts 1.00 EA 38,800 38,800 - - - 38,800 39,731	62	-	Special Status Bats (TER-6) Biolo	logical Monitoring	1.00	EA	119,080	119,080	-	-	-	-	119,080	139,378
Special Status Bats (TER-6) Inic in PDB Construction of Replacement Roosts 1.00 EA 1.20,000 19,000 14,720 1,619 6,018 169,557 179,866	62	-	Special Status Bats (TER-6) Ager	ency Coordination/Meetings	1.00	EA	50,770	50,770	-	-	-	-	50,770	54,919
Special Status Bats (TER-6) Construction of Replacement Roosts 1.00 EA 128,000 128,000 19,200 14,720 1,619 6,018 169,557 179,866 2 Special Status Bats (TER-6) (LTC Cover) Monitor Installation of Replacement Roosts	62	-	Special Status Bats (TER-6) Desi	sign Replacement Roosts	1.00	EA	38,800	38,800	-	-	-	-	38,800	39,731
Company Comp	62	-	Special Status Bats (TER-6) [inc i	in PDB] Construction of Replacement Roosts	1.00	EA	-	-	-	-	-	-	-	-
Special Status Bats (TER-6) ILTC Cover Post-Construction Monitoring of Replacement Roosts Special Status Bats (TER-6)	62	-	Special Status Bats (TER-6) Cons	nstruction of Replacement Roosts	1.00	EA	128,000	128,000	19,200	14,720	1,619	6,018	169,557	179,866
Baseline Water Quality Monitoring Field installation & equipment AECOMWater Monitoring (3.3) FY19/20 Prelim Services 1.00 YR 50,956 50,956 - - 50,956 51,975	62	-	Special Status Bats (TER-6) [LTC	C Cover] Monitor Installation of Replacement Roosts	-	-	-	-	-	-	-	-	-	-
Field installation & equipment AECOMWater Monitoring (3.3) FY19/20 Prelim Services 1.00 YR 50,956 50,956 - - - 50,956 51,975	62	-	Special Status Bats (TER-6) [LTC	C Cover] Post-Construction Monitoring of Replacement Roosts	-	-	-	-	-	-	-	-	-	-
Field installation & equipment AECOMWater Monitoring (3.3) FY19/20 Prelim Services 1.00 YR 50,956 50,956 - - - 50,956 51,975			Baseline Water Quality Monitoring											
63 - Field installation & equipment Keno 1.00 EA 58,000 58,000 58,000 58,000 63 - Field installation & equipment JC Boyle 1.00 EA 151,000 151,000 151,000 151,000 63 - Field installation & equipment Copco 1.00 EA 86,000 86,000 86,000 86,000 63 - Field installation & equipment Iron Gate 1.00 EA 77,000 74,000 77,000 77,000 63 - Field installation & equipment Walker Bridge 1.00 EA 77,000 77,000 77,000 77,000 63 - Field installation & equipment Seiad Valley 1.00 EA 62,000 62,000 62,000 62,000 63 - Field installation & equipment Colleans 1.00 EA 64,000 64,000 64,000 64,000 63 - Field installation & equipment Colleans 1.00 EA 64,000 64,000 64,000 64,000 63 - Field installation & equipment Colleans 1.00 EA 65,000			Field installation & equipment											
63 - Field installation & equipment	63	-	Field installation & equipment AEC	COM Water Monitoring (3.3) FY19/20 Prelim Services	1.00	YR	50,956	50,956	-	-	-	-	50,956	51,975
63 - Field installation & equipment	63	-	Field installation & equipment Kend	no	1.00	EA	58,000	58,000	-	-	-	-	58,000	58,000
63 - Field installation & equipment Iron Gate 1.00 EA 74,000 74,000 74,000 74,000 63 - Field installation & equipment Seiad Valley 1.00 EA 62,000 62,000 62,000 62,000 63 - Field installation & equipment Orleans 1.00 EA 64,000 64,000 64,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 6	63	-	Field installation & equipment JC B	Boyle	1.00	EA	151,000	151,000	-	-	-	-	151,000	151,000
63 - Field installation & equipment Walker Bridge 1.00 EA 77,000 77,000 77,000 77,000 63 - Field installation & equipment Seiad Valley 1.00 EA 62,000 62,000 62,000 62,000 63 - Field installation & equipment Orleans 1.00 EA 64,000 64,000 64,000 64,000 63 - Field installation & equipment Name Name Name Name Name Name Name Name	63	-	Field installation & equipment Copo	oco	1.00	EA	86,000	86,000	-	-	-	-	86,000	86,000
63 - Field installation & equipment Seiad Valley 1.00 EA 62,000 62,000 62,000 62,000 63 - Field installation & equipment Orleans 1.00 EA 64,000 64,000 64,000 64,000 63 - Field installation & equipment Klamath 1.00 EA 59,000 59,000 59,000 59,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Scott 1.00 EA 65,000 65,000 65,000 65,000 65,000 65,000 65,000 65,000	63	-	Field installation & equipment Iron 0	n Gate	1.00	EA	74,000	74,000	-	-	-	-	74,000	74,000
63 - Field installation & equipment Orleans 1.00 EA 64,000 64,000 64,000 64,000 63 - Field installation & equipment Klamath 1.00 EA 59,000 59,000 59,000 59,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Scott 1.00 EA 65,000 65,000 65,000 65,000	63	-	Field installation & equipment Walk	Iker Bridge	1.00	EA	77,000	77,000	-	-	-	-	77,000	77,000
63 - Field installation & equipment Klamath 1.00 EA 59,000 59,000 59,000 59,000 63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Scott 1.00 EA 65,000 65,000 65,000 65,000	63	-	Field installation & equipment Seia	ad Valley	1.00	EA	62,000	62,000	-	-	-	-	62,000	62,000
63 - Field installation & equipment Shasta 1.00 EA 65,000 65,000 65,000 65,000 63 - Field installation & equipment Scott 1.00 EA 65,000 65,000 65,000 65,000	63	-	Field installation & equipment Orlea	eans	1.00	EA	64,000	64,000	-	-	-	-	64,000	64,000
63 - Field installation & equipment Scott 1.00 EA 65,000 65,000 65,000	63	-	Field installation & equipment Klam	math	1.00	EA	59,000	59,000	-	-	-	-	59,000	59,000
The included a equipment	63	-	Field installation & equipment Shas	asta	1.00	EA	65,000	65,000	-	-	-	-	65,000	65,000
END	63	-	Field installation & equipment Scott	ott	1.00	EA	65,000	65,000	-	-	-	-	65,000	65,000
	END								-	-	-		-	-

PARTIAL REMOVAL ADJUSTMENTS

Cost Sh. Line Item/Category	Estimate Ddt (Excl. FO)	Remediation Estimate	Annual Maint Rate	10 Year Maint Estimate		Actionable Savings	Comments
Conco No. 4 Escilita Domonal	9 (55 (07 3)	182 700		·		140 040 91	
Opeo No. 1 Facility Removal	(1,650,377)	70304	6.500	A 65	87 784 \$	(1 486 083)	
2.019 Remove & Dispose of 3 sections of 23' of 72" Dia. steel lining (embedded	9 69	21,632		69	-	(226,349)	Repaint; 10-yr repaint
	\$ (249,063)	\$ 5,408		s	-	(236,903)	
П	\$ (119,145)			€9	↔	(119,145)	$\overline{}$
	(158,208)			€9	φ.	(158,208)	
П	(24,861)			ъэ e	ы	(24,861)	
Т	(23,118)			A 6	_	(23,118)	
2.070 Remove & Dispose of 10 Dia, penstock pipe	\$ (4441,401)	\$ 21,632	\$ 2,000	9 69	27.010 \$	(304,740)	Repaint 10-yr repaint
	(2,950,840)			69	_	(2,910,851)	_
2.011 Remove Concrete Intake Structure on Right Abutment	(2,950,840)			69	27,010 \$	(2,910,851)	Remove lead paint and fence; standard annual building maint
	(418,287)		\$ 2,000	\$		(378,297	$\overline{}$
2.014 Remove Diversion Tunnel Control Structure Concrete	(418,287)			φ,	-	(378,297	Remove lead paint and fence; standard annual building maint.
	\$ (1,620,759)		2,000	sg 6	-	(1,467,011)	Section of property of propert
2.024 Remove Powerhouse Concrete down to top or rock under the Powerhouse	(190,909) &	970'09 0		e e	4 010,12	(540,042)	Remove lead paint and aspernos, tence building and new root, annual building maint.
Т	(282 604)			9 65	9 69	(282 604)	
Т	(75,536)			9		(75,536)	
	(11,240)	· •		69	٠	(11,240)	
П	(168,135)		-	8	θ.	(168,135)	
	\$ (13,630)			€9	φ.	(13,630)	Remediation and maint, covered in building costs
	\$ (20,065)			69 69	.	(20,065)	Remediation and maint, covered in building costs
Т	\$ (11,250)			so e	υ - υ	(11,250)	Remediation and maint, covered in building costs
Т	(13,741)	,		A G	A 6	(15,741	
2.046 Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 3000kVA, 2.047 Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 4165kVA				A 65		(122,529)	Remediation and maint, covered in building costs Remediation and maint covered in building costs
	(S)	118,976			121,547 \$	(3,550,546)	
Power Penstock Intake Structure and Gate	(642,108)				-	(604,282)	
П	(402,964)		\$ 2,000	s		(365,138)	
	(41,334)			€9	\vdash	(41,334)	
3.066 Remove & Dispose of Trash rack and trash rake (steel)	(47,206)			€ €		(47,206)	Remediation and maint. covered in structure costs
3.007 Remove & Dispose of Stop Logs and Stots for make (steet)	(150,004)		- 4000	e e	13 505 6	(150 038	Remediation and maint, covered in structure costs
3.062 Remove Concrete Items associated with 16-foot I.D. Wood Stave Pipe	(164,444)			9 69	_	(150,938)	No remediation; minimal maint.
	(164,444)	,		69	13,505 \$	(150,938)	
3.062 Remove Concrete Items associated with 16-foot I.D. Wood Stave Pipe	(164,444)			69		(150,938	No remediation; minimal maint.
	\$ (1,622,524)	\$ 21,632	3,000	69	40,516 \$	(1,560,376)	
Remove & Dispose of Penetock after hiturgation to hutterfly valves	(854.815)	21632		9 6	_	(806.207)	
3.072 Remove & Dispose of Bifurcated vent pipes and support structure	(10.561)			9 69	-	(10.561	Included in line item above
Т	(181,435)			9		(181,435)	
	(1,230,929)	86,528	\$ 2,000	8	27,010 \$	(1,084,011)	
	(12,984)			&	-	(15,984)	Included in line item below
3.028 Remove Powerhouse Concrete down to spring-line of turbine	(202,371)	86,528	\$ 2,000	φ.	27,010 \$	(88,832)	
Т	\$ (177,215)			6 9 6	6 9 6	(177,215)	
3.030 Remove & Dispose - 12 - Cast IIOT Colorins	2			9 65		(21,633)	Remediation and maint, covered in building costs
Т				• 69	9	(107.943)	
Т				69		(19,204)	Remediation and
		,		€9	٠	(10,286)	
	٤			8	φ.	(164,356)	Remediation and maint. covered in building
3.046 Remove & Dispose - Excitation equipment for 15 MVA Generator				so 6	υ» υ	(17,513)	Remediation and maint, covered in building costs Demediation and maint, covered in building costs
Т	\$ (12,561)			9 69	· 69	(12,561)	Remediation and maint.
3.053 Remove & Dispose - Raceways, Conduit and Cable	(17,592)			69	69	(17,592)	Remediation and maint. covered
Iron Gate Facility Removal	\$ (1,472,669)	86,528	\$ 2,000	69		(1,306,084)	
	(1,472,669)	86,528		€	27,010 \$	(1,306,084)	
	(1,015,479)	\$ 86,528		ы	_	(901,941)	
4.04 Kemove and Dispose of Trane 4.04 Remove and Dispose of Crane				e e	A 64	(203,725)	Remediation and maint, covered in building costs
Т				9	9	(10.177)	
	(18,731)		- 8	8	٠	(18,731)	
	(16,594)			69		(16,594)	
4.05 Remove and Dispose of Unwatering Piping	\$ (16,289)			69 6	69 6 '	(16,289)	Remediation and maint: covered in building costs
Т				9 69	9 69	(27.008)	
Т				9		(11,596)	
J. C. Boyle Facility Removal	\$ (7,835,051)	163,322	.,	\$	378,147 \$	(7,363,376)	
		12,979	\$ 2,000			(922,598)	
1.083.1 Remove & Dispose Penstocks and bifurcation (steel)	\$ (962,587)	12,979		69	27,010 \$	(922,598)	

KRRC Cost Estimate - Line Item Adjustments for Partial Removal

		Esc YOC	Esc YOC	Est 2019	Esc from 2022	Esc YOC	
		Estimate Ddt	Remediation	Annual Maint	10 Year Maint	Actionable	
Cost SI	Cost Sh. Line Item/Category	(Excl. FO)	Estimate	Rate	Estimate	Savings	Comments
	Canal Intake (Screen) Structure	\$ (834,506) \$	\$ 12,979	\$ 4,000 \$	\$ 54,021 \$	(767,506)	
1.061	1.061 Remove Intake Structure Concrete	\$ (340,890)		\$ 2,000	\$ 27,010 \$	(313,880)	(313,880) No remediation; annual maint. for entire structure
1.062	Remove Fish Screen Building	\$ (55,841)	\$ 12,979	\$ 2,000	\$ 27,010 \$	(15,852)	(15,852) Remove lead paint and fence; standard annual building maint.
	Left Concrete Gravity Section	\$ (136,319)		\$ 2,000	\$ 27,010 \$	(109,308)	
1.008	Remove Gravity Dam Section Concrete	\$ (71,304)		\$ 2,000	\$ 27,010 \$	(44,293)	(44,293) No remediation. Annual maint. added.
	Canal Headgate Structure	\$ (153,392)		\$ 1,000	\$ 13,505 \$	(139,886)	
1.064	Remove Concrete Items associated with the 14-ft-diameter Steel Pipe	\$ (153,392)		\$ 1,000	\$ 13,505 \$	(139,886)	139,886) Covers all the conc associated won the penstock from the dam ot the canal, inc head gate
	Power Canal (Flume)	\$ (4,255,793)		\$ 2,000	\$ 67,526 \$	(4,188,267)	
1.065	Remove Open Concrete Flume	(3,492,506)		\$ 2,000	\$ 67,526 \$	(3,424,980)	(3,424,980) No remediation. Annual maint. added
	Powerhouse (incl. mech & elect. equipment)	\$ (1,117,198) \$	\$ 54,080	\$ 2,000	\$ 27,010 \$	(1,009,009)	
1.029	Remove Powerhouse Concrete down to Elevation 3324.0	\$ (438,884) \$	\$ 54,080	\$ 2,000	\$ 27,010 \$	(357,794)	(357,794) Remove lead paint and asbethos, and fence buiding; annual building maint.
	Buildings	\$ (375,257) \$	\$ 83,283	\$ 14,000	\$ 189,073 \$	(226,802)	
1.011	1.011 Remove Storage Shed located on access road	\$ (77,038)	\$ 11,898	\$ 2,000	\$ 27,010 \$	(38,130)	(38,130) Remove lead paint and fence; standard annual building maint.
1.012	Remove Warehouse, North & South Residence (Red Bam) Near Dam Access Road	\$ (172,758) \$	\$ 11,898	\$ 2,000	\$ 27,010 \$	(133,850)	133,850) Remove lead paint and fence; standard annual building maint.
1.031	1.031 Remove Warehouse near Powerhouse	\$ (93,731) \$	\$ 11,898	\$ 2,000 \$	\$ 27,010 \$	(54,823)	(54,823) Remove lead paint and fence; standard annual building maint.
	TOTAL PARTIAL REMOVAL SAVINGS	\$ (19,772,431) \$	\$ 551,616	\$ 53,500 \$	\$ 695,520 \$	(18,462,247)	



Attachment B Pay Item Cost Detail Worksheets

COPCO 1 DAM REMOVAL

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	2.001		Project	: KRRP - Copco 1			
Description		Furnish, Install, and Remove I Reservoir for Dam Removal	Barge-Mounted Crane in	Group	: D07			
Quantity	:	1.00 ls						
Daily Production	:	0.05 Is per	10 hour shift	Project #	: 2			
Work Days	:	20.0 Days		Estimator	: Eric Jones	ls per	Total Cost	Unit Price Per Is
Unit Price	:	\$358,914.90 per ls		Probable Low Co	st Parameter	0.055	\$323,023	\$323,023.41
Total Cost		\$358.915		Probable High Co	ost Parameter	0.0375	\$448.644	\$448.643.63

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	20.0	10	200.00	L	\$58.87	incl. in rate	incl. in rate	\$11,774.40
Laborer	Active	2.00	20.0	10	400.00	L	\$51.07	incl. in rate	incl. in rate	\$20,429.20
Equipment Operator (crane)	Active	1.00	20.0	10	200.00	L	\$81.60	incl. in rate	incl. in rate	\$16,319.60
Equipment Operator (oiler)	Active	1.00	20.0	10	200.00	L	\$73.43	incl. in rate	incl. in rate	\$14,685.00
Tugboat Captain	Active	1.00	20.0	10	200.00	L	\$77.37	incl. in rate	incl. in rate	\$15,474.80
Tugboat Hand	Active	1.00	20.0	10	200.00	L	\$67.06	incl. in rate	incl. in rate	\$13,411.20
Barge Operator	Active	1.00	20.0	10	200.00	L	\$79.13	incl. in rate	incl. in rate	\$15,826.80
Barge, Deck Engineer, Winch Operator	Active	1.00	20.0	10	200.00	L	\$79.13	incl. in rate	incl. in rate	\$15,826.80
Crawler Crane (270tn)	Active	2.00	20.0	10	400.00	Е	\$454.10	incl. in rate	incl. in rate	\$181,640.00
				_					_	
				Labor Hours	1800				TOTAL LABOR	\$123,747.80
				Equipment Hours	400				TOTAL EQUIPMENT	\$181,640.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	¢n.nn

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Barge Rental 3 Months	3.00	month	1.000	3.00	\$9,600.00		\$28,800.00
Tug Boat Rental 3 Months	3.00	month	1.000	3.00	\$3,550.00		\$10,650.00
							\$0.00
						<u>.</u>	\$0.00
						TOTAL SUBCONTRACTS	\$39,450.00

SUMMARY OF COSTS				
Labor Cost	\$123,747.80 Labor Burden @	0.0% \$0.00		\$123,747.80
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$181,640.00 Equipment Tax @	7.75% \$14,077.10		\$195,717.10
Subcontractors	\$39,450.00			\$39,450.00
DIRECT COST SUBTOTALS	\$344,838	\$14,077	DIRECT COST SUBTOTALS	\$358,915
Additional Pay Item Notes :				

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.002	Project	: KRRP - Copco 1			
Description	:	Remove Sediment from Diversion Tunnel Intake to provide access	Group	: D02			
Quantity	:	1,000.00 CY					
Daily Production	:	200.00 CY per 20 hour shift	Project #	: 2			
Work Days	:	5.0 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$299.10 per CY	Probable Low	Cost Parameter	220	\$269,192	\$269.19
Total Cost	:	\$299,102	Probable High	Cost Parameter	160	\$358,923	\$358.92

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	5.0	20	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.20
Laborer	Active	4.00	5.0	20	400.00	L	\$51.07	incl. in rate	incl. in rate	\$20,429.20
Equipment Operator (medium)	Active	1.00	5.0	20	100.00	L	\$72.34	incl. in rate	incl. in rate	\$7,233.60
Barge Operator	Active	1.00	5.0	20	100.00	L	\$79.13	incl. in rate	incl. in rate	\$7,913.40
Barge, Deck Engineer, Winch Operator	Active	2.00	5.0	20	200.00	L	\$79.13	incl. in rate	incl. in rate	\$15,826.80
Truck Driver (heavy)	Active	1.00	5.0	20	100.00	L	\$66.92	incl. in rate	incl. in rate	\$6,692.40
Diver, Wet	Active	4.00	5.0	20	400.00	L	\$142.66	incl. in rate	incl. in rate	\$57,063.60
Diver, Tender	Active	4.00	5.0	20	400.00	L	\$92.77	incl. in rate	incl. in rate	\$37,109.60
Barge, Sectional, 40'x10', includes ramp	Active	2.00	5.0	20	200.00	E	\$17.71	incl. in rate	incl. in rate	\$3,542.00
Hydraulic Excavator (5.0cy)	Active	1.00	5.0	20	100.00	E	\$276.50	incl. in rate	incl. in rate	\$27,650.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	5.0	20	100.00	E	\$117.28	incl. in rate	incl. in rate	\$11,728.00

Labor Hours	1800	TOTAL LABOR	\$158,155.80
Equipment Hours	400	TOTAL EQUIPMENT	\$42,920.00

MATERIAL COSTS											
Description	ltem Or	rder Conversion	Order	Order	Material						
	Quantity U	Jnit Factor / Waste	Quantity	Price	Cost						
Slurry Storage Tank Allowance 10K Gal	1.00		1.00	\$30,000.00	\$30,000.00						

TOTAL MATERIAL \$30,000.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Suction Dredge	1,000 CY		\$8.00		\$8,000.00
Suction Dredge Mobilization	1 LS		\$50,000.00		\$50,000.00
Waste Clean Up Truck Sludge	25 HR	Min 10 hours a day 2.5 days	\$175.00		\$4,375.00
				_	\$0.00
				TOTAL SUBCONTRACTS	\$62,375.00

SUMMARY OF COSTS					
Labor Cost	\$158,155.80 Labor Burden @	0.0%	\$0.00		\$158,155.80
Material Cost	\$30,000.00 Material Tax @	7.75%	\$2,325.00		\$32,325.00
Equipment Cost	\$42,920.00 Equipment Tax @	7.75%	\$3,326.30		\$46,246.30
Subcontractors	\$62,375.00				\$62,375.00
DIRECT COST SUBTOTALS	\$293,451		\$5,651	DIRECT COST SUBTOTALS	\$299,102

Operation is estimated using a dredge to remove material off of existing diversion structure. Divers will be used to locate structure and guide dredging operation. Due to the depth of the diversion structure the divers are expected to be able to work roughly 20 mins at a time. To account for this restriction more divers have been added to the operation to ensure the operation can be covered the entire shift. One barge will be used for support equipment and another barge will be used to load out material. Material will be hauled to shore and loader in dump trucks. Slurry will be captured in temporary tanks and removed from the site using a Sludge Tanker Truck.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.003	Project : KRRP - Copco 1			
Description	:	Mobilize and Demob Large Crane on Right Abutment	Group : D10			
Quantity	:	1.00 LS				
Daily Production	:	1.00 LS per 10 hour shift	Project # : 2			
Work Days	: '	1.0 Days	Estimator : Eric Jones	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$80,000.00 per LS	Probable Low Cost Parameter	1.15	\$68,000	\$68,000.00
Total Cost	:	\$80,000	Probable High Cost Parameter	0.85	\$92,000	\$92,000.00

CREW COSTS									
Description	Active	# in	Days Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked /day	Hours		Rate	Cost	Rate	Cost
			Labor Hours	0				TOTAL LABOR	\$0.0
			Equipment Hours	. 0				TOTAL EQUIPMENT	\$0.0
					•				• • • • • • • • • • • • • • • • • • • •

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						. STAL MATERIAL	ψ0.00

Amount \$40,000.00
\$40,000.00
\$40,000.00
\$0.00
\$0.00

\$0.00 Labor Burden @				\$0.00								
\$0.00 Material Tax @	7.75%	\$0.00		\$0.0								
\$0.00 Equipment Tax @	7.75%	\$0.00		\$0.00								
\$80,000.00				\$80,000.0								
\$80,000		\$0	DIRECT COST SUBTOTALS	\$80,00								
	\$0.00 \$80,000.00 \$80,000	\$0.00 \$80,000.00 \$80,000	\$0.00 \$80,000 Equipment Tax @ 7.75% \$0.00 \$80,000 \$0	\$0.00 Equipment Tax @ 7.75% \$0.00								

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.004	Project	: KRRP - Copco 1			
Description	:	Remove Water from behind Tailrace Cofferdam	Group	: D02			
Quantity	:	200,000.00 GAL					
Daily Production	:	191,400.00 GAL per 10 hour shift	Project #	: 2			
Work Days	:	1.0 Days	Estimator	: Eric Jones	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$0.01 per GAL	Probable Low (Cost Parameter	210540	\$1,824	\$0.01
Total Cost	:	\$2,027	Probable High	Cost Parameter	162690	\$2,331	\$0.01

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	2.00	1.0	10	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.46
Pump, Trash Pump, 6"+	Active	1.00	1.0	24	24.00	E	\$16.11	incl. in rate	incl. in rate	\$386.64
Intake and Discharge Hose, 6" 20' lengths	Active	5.00	1.0	24	120.00		\$5.00	incl. in rate	incl. in rate	\$600.00
				Labor Hours	30				TOTAL LABOR	\$1,610.18
				Equipment Hours	24				TOTAL EQUIPMENT	\$386.64

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

BUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit		Contract or Quote	
			Company	Price		Amount	
					TOTAL SUBCONTRACTS	\$0.00	

SUMMARY OF COSTS											
	Labor Cost	\$1,610.18	Labor Burden @	0.0%			\$1,610.18				
	Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00				
	Equipment Cost	\$386.64	Equipment Tax @	7.75%	\$29.96		\$416.60				
	Subcontractors	\$0.00					\$0.00				
	DIRECT COST SUBTOTALS	\$1,997	•		\$30	DIRECT COST SUBTOTALS	\$2,027				
	Additional Pay Item Notes :										

Figured you would have 1 foreman with a truck and 2 laborers managing pump for gas and other maintenance. Figured 100' of discharge pipe. Based on a 3" pump being to pump 153,120 gallons per shift it will take 1.3 days to dewater area.

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.005	Project	: KRRP - Copco 1			
Description	:	Cofferdam Fill Material Production for Equipment Access	Group	: D02			
Quantity	:	4,000.00 CY					
Daily Production	:	660.00 CY per 20 hour shift	Project #	: 2			
Work Days	:	6.1 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$39.67 per CY	Probable Low C	ost Parameter	726	\$142,809	\$35.70
Total Cost	:	\$158,677	Probable High C	Cost Parameter	528	\$190,412	\$47.60

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	6.1	20	122.00	L	\$58.87	incl. in rate	incl. in rate	\$7,182.38
Laborer	Active	4.00	6.1	20	488.00	L	\$51.07	incl. in rate	incl. in rate	\$24,923.62
Equipment Operator (medium)	Active	3.00	6.1	20	366.00	L	\$72.34	incl. in rate	incl. in rate	\$26,474.98
Truck Driver (heavy)	Active	2.00	4.6	20	183.30	L	\$66.92	incl. in rate	incl. in rate	\$12,267.17
Hydraulic Excavator (2.5cy)	Active	2.00	6.1	20	244.00	E	\$205.40	incl. in rate	incl. in rate	\$50,117.60
Dozer (235hp)(CATD7)	Active	1.00	6.1	20	122.00	E	\$171.07	incl. in rate	incl. in rate	\$20,870.54
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	4.6	20	183.30	Е	\$57.41	incl. in rate	incl. in rate	\$10,523.25
				Labor Hours	1159.3				TOTAL LABOR	\$70,848.15
				Equipment Hours	549.3				TOTAL EQUIPMENT	\$81,511.39

Description	Item	Order	Conversion	Order	Order	Materia
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					_	
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$70,848.15	Labor Burden @	0.0%			\$70,848.15
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$81,511.39	Equipment Tax @	7.75%	\$6,317.13		\$87,828.53
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$152,360			\$6,317	DIRECT COST SUBTOTALS	\$158,677
Additional Pay Item Notes :						

2.005 Cofferdam Fill Material Production for Equipment Access Low Cost Factors No Bad Weather Gas Price Decrease Bad Weather Unforeseen Contaminated Mats/ Access Iss No Unforeseen Contaminated Mats/ Access Iss roduction Per Hou 33 264 Haul Notes Excavator Loading Production per shift 4,000.00 CY per Hour Swell Factor 20% CY Bucket Size 5.00 Bulk CY 4800 Buckets Per Hour Haul Vehicle 85% Capacity (1.3 tons per CY) 10.2 # of Excavators 1.00 # of Haul Vehicles 2 CY per Hour (2.5 CY Bucket) 26 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) 5 CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) 5 Efficient Compared to Ideal Production Haul Speed (Loaded MPH) 5 Inefficiencies Compared to Ideal Production 72% Return Speed (Unloaded MPH) Haul Distance (Miles) 0.5 Shift Length (Hours) 20 Cycle Time Load Time (Load Time Minutes / 60mins) 0.08

0.10

0.08

0.05

0.31

235 91.65 2.56 4.5825

Haul Time (Haul Distance / Haul Speed) Dump Time (Dump Time Minutes / 60 Mins)

Hours Per Cycle

Return Time (Haul Distance / Return Speed)

Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Emiciency Factor (Night Work, Trainic Restrictions, Coffee Breaks, ECT)
Actual Hours Per Cycle (Hours per Cycle) Efficiency Factor)
Number of Cycles (Bulk CY) (Haul Vehicle Cap X if of Haul Vehicles)
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)
Number of Haul Days

Other Notes
This payitem is an allowance to produce and place fill material for the Copco 1 cofferdam. The material production is assumed to be on site. This material will be placed behind the combi sheet pile coffer dam wall to provide access for equipment during the dam demolition operation. The Quantity was based on a foot print of 5334sf of working space at 20 foot depth of material to which is the expected to allow access from the powerhouse area.

CREW COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.006	Project	: KRRP - Copco 1			
Description	:	Provide Dewatering behind Tailrace Cofferdam	Group	: D02			
Quantity	:	1.00 LS					
Daily Production	:	1.00 LS per 10 hour shift	Project #	: 2			
Work Days	:	1.0 Days	Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$200,506.60 per LS	Probable Low	Cost Parameter	1.1	\$180,456	\$180,455.94
Total Cost	:	\$200,507	Probable High	Cost Parameter	0.8	\$240,608	\$240,607.93

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	23.0	8	184.00	L	\$58.87	incl. in rate	incl. in rate	\$10,832.45
Laborer	Active	3.00	46.0	10	1,380.00	L	\$51.07	incl. in rate	incl. in rate	\$70,480.74
Pump, Trash Pump, 6"+	Active	3.00	92.0	24	6,624.00	E	\$16.11	incl. in rate	incl. in rate	\$106,712.64
Truck, Pickup (4x4, 3/4tn)	Active	1.00	23.0	10	230.00	E	\$16.99	incl. in rate	incl. in rate	\$3,907.70
Intake and Discharge Hose, 3* (20' lengths)	Active	5.00	92.0	24	11,040.00		\$2.50	incl. in rate	incl. in rate	\$27,600.00
				Labor Hours	1564				TOTAL LABOR	\$81,313.19
				Equipment Hours	6854				TOTAL EQUIPMENT	\$110,620.34

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	***
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

					TOTAL SUBCONTRACTS	\$0.00
SUMMARY OF COSTS						
Labor Cost	\$81,313.19	Labor Burden @	0.0%			\$81,313.19
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$110,620.34	Equipment Tax @	7.75%	\$8,573.08		\$119,193.42
Subcontractors	\$0.00		-		'	\$0.00
DIRECT COST SUBTOTALS	\$191.934			\$8,573	DIRECT COST SUBTOTALS	\$200,507
Additional Pay Item Notes :					•	
Additional Lay Item Notes :						

3 pumps will be used 1 day, 1 night, and 1 back up on hand to ensure the dewatering continues during maintenance. 3 laborers to be used half of the pump time of 3 months to maintain pump (gas/maintenance). 1.5 laborers during the day and 1.5 laborers during the night shift. (1 laborer will be doing a split shift). 1 foreman 1/4 of the time to manage laborer and coordinate reposition of pumps. 100' of discharge pipe used for the entire duration of operation.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	2.007		Project	: KRRP - Copco 1			
Description	:	Remove Current Diversion T	unnel Plug	Group	: D02			
Quantity	:	195.00 cy						
Daily Production	:	15.00 cy per	10 hour shi	ift Project #	: 2			
Work Days	:	13.0 Days		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$650.44 per cy		Probable Lo	w Cost Parameter	16.5	\$114,152	\$585.40
Total Cost	:	\$126,836		Probable Hig	gh Cost Parameter	12	\$152,203	\$780.53

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours	-,-	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	13.0	10	130.00	L	\$58.87	incl. in rate	incl. in rate	\$7,653.36
Laborer	Active	5.00	13.0	10	650.00	L	\$51.07	incl. in rate	incl. in rate	\$33,197.45
Equipment Operator (medium)	Active	2.00	13.0	10	260.00	L	\$72.34	incl. in rate	incl. in rate	\$18,807.36
Truck Driver (heavy)	Active	1.00	13.0	10	130.00	L	\$75.72	incl. in rate	incl. in rate	\$9,844.12
Barge Operator	Active	1.00	13.0	10	130.00	L	\$79.13	incl. in rate	incl. in rate	\$10,287.42
Barge, Deck Engineer, Winch Operator	Active	1.00	13.0	10	130.00	L	\$79.13	incl. in rate	incl. in rate	\$10,287.42
Barge, Sectional, 20'x10'	Active	2.00	13.0	10	260.00	Е	\$6.89	incl. in rate	incl. in rate	\$1,791.40
Loader, FE Rubber Tire (3.5cy)	Active	1.00	13.0	10	130.00	Е	\$63.11	incl. in rate	incl. in rate	\$8,204.30
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	13.0	10	130.00	Е	\$57.41	incl. in rate	incl. in rate	\$7,463.30
Air Compressor 600 CFM	Active	2.00	13.0	10	260.00	E	\$60.25	incl. in rate	incl. in rate	\$15,665.00
Pavement Breakers 60lbs	Active	6.00	13.0	10	780.00	E	\$1.27	incl. in rate	incl. in rate	\$990.60
				Labor Hours	1430				TOTAL LABOR	\$90,077.13
				Equipment Hours	1560				TOTAL EQUIPMENT	\$34,114.60

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						_	
							40.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$90,077.13	Labor Burden @	0.0%	\$0.00		\$90,077.13
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$34,114.60	Equipment Tax @	7.75%	\$2,643.88		\$36,758.48
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$124,192	-		\$2,644	DIRECT COST SUBTOTALS	\$126,836
Additional Pay Item Notes :						

There will be two barges used to support the demolition of the concrete plug. One barge will manage the equipment and one will be used for material hauling. It is expected that the concrete plug will demolished with pavement breaks with the support from a skid steer. Blasting was not used to demolish this item to avoid damaging the tunnel.

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER Project KRRP - Copco 1 Description
Quantity
Daily Production
Work Days
Unit Price : D02 5.00 LD per 5.0 Days \$8,613.85 per LD 10 hour shift Project # : 2
Estimator : Michael Barba
Probable Low Cost Parameter LD per 5.75 Total Cost \$183,044 Unit Price Per LD \$7,321.77 Total Cost \$215,346 \$258,416 \$10,336.62 Probable High Cost Parameter

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	1.00	5.0	10	50.00	L	\$51.07	incl. in rate	incl. in rate	\$2,553.65
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Crawler Crane (130tn)	Active	1.00	5.0	10	50.00	E	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Loader, FE Rubber Tire (5.25cy)	Active	1.00	5.0	10	50.00	Е	\$76.00	incl. in rate	incl. in rate	\$3,800.00
Pile Driver	Active	2.00	5.0	10	100.00	L	\$78.56	incl. in rate	incl. in rate	\$7,856.00
	76470	2.00	2.0	.0	.53.60	_	ţ. 3.00			\$1,000.00
				Labor Hours	300				TOTAL LABOR	\$21,049.95

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
24" Combi Pipe Pile (.5" thick wall X 40' long 31 each c	1,240.00	VLF	1.060	1,314.40	\$25.00	\$32,860.0
Sheet Pile AZ-13 12080 SF	114,760.00	Lbs	1.060	121,645.60	\$0.50	\$60,822.80
Rigging Allowance (10% of Material Cost)	1.00	AL	1.000	1.00	\$9,368.28	\$9,368.2

SUBCONTRACT COSTS Description	Quantity Units	Notes /	Unit		Contract or Quote
	•	Company	Price		Amount
Load Allowance	25 LD		\$1,000.00		\$25,000.00
Crane Mobilization	1 LS		\$40,000.00		\$40,000.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$65,000,00

SUMMARY OF COSTS									
Labor Cost	\$21,049.95 Labor Burden @	0.0% \$0.00		\$21,049.95					
Material Cost	\$103,051.08 Material Tax @	7.75% \$7,986.46	\$	\$111,037.54					
Equipment Cost	\$16,945.50 Equipment Tax @	7.75% \$1,313.28		\$18,258.78					
Subcontractors	\$65,000.00			\$65,000.00					
DIRECT COST SUBTOTALS	\$206,047	\$9,300	DIRECT COST SUBTOTALS	\$215,346					
Additional Pay Item Notes :	Additional Pay Item Notes :								
Figuring that the crane mobilization	Figuring that the crane mobilization will cost more due to restricted access.								

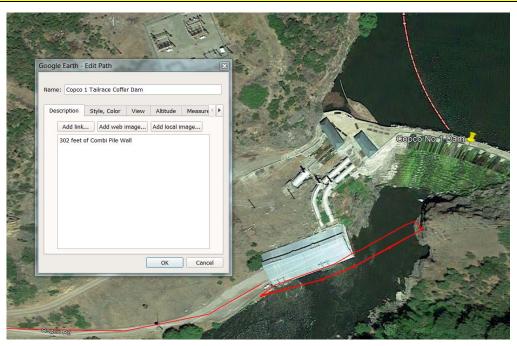
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours	-,-	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	17.3	10	173.00	L	\$58.87	incl. in rate	incl. in rate	\$10,184.86
Laborer	Active	3.00	17.3	10	519.00	L	\$51.07	incl. in rate	incl. in rate	\$26,506.89
Equipment Operator (crane)	Active	1.00	17.3	10	173.00	L	\$81.60	incl. in rate	incl. in rate	\$14,116.45
Equipment Operator (oiler)	Active	1.00	17.3	10	173.00	L	\$73.43	incl. in rate	incl. in rate	\$12,702.53
Vibratory Hammer & Extractor	Active	1.00	17.3	10	173.00	E	\$94.14	incl. in rate	incl. in rate	\$16,286.22
Welder	Active	1.00	17.3	10	173.00	E	\$7.84	incl. in rate	incl. in rate	\$1,356.32
Crawler Crane (130tn)	Active	1.00	17.3	10	173.00	E	\$262.91	incl. in rate	incl. in rate	\$45,483.43
Pile Driver	Active	4.00	17.3	10	692.00	L	\$78.56	incl. in rate	incl. in rate	\$54,363.52
	Active	1.00	17.3	10	173.00	E	\$102.44	incl. in rate	incl. in rate	\$17,722.12
D36 Hammer 36X100' Leads	Active									
D36 Hammer 36X100' Leads	Active									
D36 Hammer 36X100' Leads	Active			Labor Hours	1730				TOTAL LABOR	\$117,874.24

Cost \$0.0
\$0.0
\$15,000.0
\$11,787.4

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Predrilling for Pipe Pile (20' deep at 31 locations)	620 VLFT		\$126.00		\$78,120.00
Predrilling Equipment Mob and Demob	1 LS		\$50,000.00		\$50,000.00
				TOTAL SUBCONTRACTS	\$128,120.00

SUMMARY OF COSTS				
Labor Cost	\$117,874.24 Labor Burden @	0.0% \$0.00		\$117,874.24
Material Cost	\$26,787.42 Material Tax @	7.75% \$2,076.03		\$28,863.45
Equipment Cost	\$80,848.09 Equipment Tax @	7.75% \$6,265.73		\$87,113.82
Subcontractors	\$128,120.00	·		\$128,120.00
DIRECT COST SUBTOTALS	\$353,630	\$8,342	DIRECT COST SUBTOTALS	\$361,972
Additional Pay Item Notes :				

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
1500	8	В	70%	8400
100	10	0	70%	700



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	11.5	10	115.00	L	\$58.87	incl. in rate	incl. in rate	\$6,770.28
Laborer	Active	3.00	11.5	10	345.00	L	\$51.07	incl. in rate	incl. in rate	\$17,620.19
Equipment Operator (crane)	Active	1.00	11.5	10	115.00	L	\$81.60	incl. in rate	incl. in rate	\$9,383.77
Equipment Operator (oiler)	Active	1.00	11.5	10	115.00	L	\$73.43	incl. in rate	incl. in rate	\$8,443.88
Vibratory Hammer & Extractor	Active	1.00	11.5	10	115.00	E	\$94.14	incl. in rate	incl. in rate	\$10,826.10
Welder	Active	1.00	11.5	10	115.00	E	\$7.84	incl. in rate	incl. in rate	\$901.60
Crawler Crane (130tn)	Active	1.00	11.5	10	115.00	E	\$262.91	incl. in rate	incl. in rate	\$30,234.65
Pile Driver	Active	4.00	11.5	10	460.00	L	\$78.56			\$36,137.60
				Labor Hours	1150				TOTAL LABOR	\$78,355.71
				Equipment Hours	345				TOTAL EQUIPMENT	\$41,962.35

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Load Allowance	25 LD		\$1,000.00		\$25,000.00
Crane Demobilization	1 LS		\$40,000.00		\$40,000.00
					\$0.00
					\$0.00
				TOTAL CURCONTRACTS	\$6E 000 00

SUMMARY OF COSTS						
Labor Cost	\$78,355.71	Labor Burden @	0.0%	\$0.00		\$78,355.71
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost		Equipment Tax @	7.75%	\$3,252.08		\$45,214.43
Subcontractors	\$65,000.00					\$65,000.00
DIRECT COST SUBTOTALS	\$185,318	-		\$3,252	DIRECT COST SUBTOTALS	\$188,570
Additional Pay Item Notes :						

\$858,408.15

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.009	Project	: KRRP - Copco 1			
Description	:	Installation of 3 each 72" Blind Flanges	Group	: D02			
Quantity	:	38,000.00 LBS					
Daily Production	:	5,000.00 LBS per 20 hour shift	Project #	: 2			
Work Days	:	7.6 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$33.03 per LBS	Probable Low C	Cost Parameter	5750	\$1,066,884	\$28.08
Total Cost	:	\$1,255,158	Probable High (Cost Parameter	3500	\$1,631,706	\$42.94

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	7.6	20	152.00	L	\$58.87	incl. in rate	incl. in rate	\$8,948.54
Laborer	Active	3.00	7.6	20	456.00	L	\$51.07	incl. in rate	incl. in rate	\$23,289.29
Equipment Operator (crane)	Active	1.00	7.6	20	152.00	L	\$81.60	incl. in rate	incl. in rate	\$12,402.90
Diver, Wet	Active	6.00	7.6	20	912.00	L	\$142.66	incl. in rate	incl. in rate	\$130,105.01
Diver, Tender	Active	3.00	7.6	20	456.00	L	\$92.77	incl. in rate	incl. in rate	\$42,304.94
Barge Operator	Active	1.00	7.6	20	152.00	L	\$79.13	incl. in rate	incl. in rate	\$12,028.37
Barge, Deck Engineer, Winch Operator	Active	1.00	7.6	20	152.00	L	\$79.13	incl. in rate	incl. in rate	\$12,028.37
Barge, Sectional, 40'x10', includes ramp	Active	2.00	7.6	20	304.00	E	\$17.71	incl. in rate	incl. in rate	\$5,383.84
Gas Welding Machine	Active	2.00	7.6	20	304.00	E	\$2.88	incl. in rate	incl. in rate	\$874.60
Crawler Crane (270tn)	Active	1.00	7.6	20	152.00	E	\$454.10	incl. in rate	incl. in rate	\$69,023.20

\$241,107.42	TOTAL LABOR	2432	Labor Hours
\$75.281.64	TOTAL EQUIPMENT	760	Equipment Hours

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Furnish 3 each 72" Blind Flanges	38,000.00	LBS	1.000	38,000.00	\$22.00	\$836,000.00
Welding structural steel in field, cost per welder, 8# per ton, 1/8" dia, type 6011, incl 1 operating engineer	19.00	ton	1.000	19.00	\$18.85	\$358.15
Cutting, steel, to 1/4" thick, by hand, incl prep, torch cutting & grinding, excl staging (assumed qty)	1,000.00	If	1.000	1,000.00	\$20.00	\$20,000.00
Exothermic weld, 4/0 wire to 1" ground rod (assumed qty)	100.00	ea	1.000	100.00	\$10.25	\$1,025.00
Exothermic weld, to building steel, 4/0 wire (assumed qty)	100.00	ea	1.000	100.00	\$10.25	\$1,025.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
	8.00	EA	1.000	8.00	\$1,000.00	\$8,000.00

					TOTAL SUBCONTRACTS	\$8,000.00
SUMMARY OF COSTS						
Labor Cost	\$241,107.42	Labor Burden @	0.0%	\$0.00		\$241,107.42
Material Cost	\$858,408.15	Material Tax @	7.75%	\$66,526.63		\$924,934.78
Equipment Cost	\$75,281.64	Equipment Tax @	7.75%	\$5,834.33		\$81,115.97
Subcontractors	\$8,000.00					\$8,000.00
DIRECT COST SUBTOTALS	\$1,182,797			\$72,361	DIRECT COST SUBTOTALS	\$1,255,158

This pay item is to account for the installation of the 3 blind flanges in the place of the 3 flapper gates on the diversion tunnel. Due to the depth of the structure there will need to be a total of 6 divers so 2 each can alternate every 20 mins to install the blind flanges Production has been reduced to account for the inefficiency due to the allowed underwater duration. Due to this being considered in channel work restricted by the California in water work permits it will be double shifted in the schedule.

\$2,901,133.73

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER Description Group : D02 0.03 LS per 40.0 Days \$4,481,793.76 per LS Daily Production Project # LS per 0.02875 Total Cost \$3,809,525 Work Days Days : Mihaela Tomulescu Probable Low Cost Parameter \$3.809.524.70 Unit Price Total Cost \$4,481,794 0.0175 \$5,826,331.89 Probable High Cost Parameter \$5,826,332

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	40.0	20	800.00	L	\$58.87	incl. in rate	incl. in rate	\$47,097.60
Laborer	Active	3.00	40.0	20	2,400.00	L	\$51.07	incl. in rate	incl. in rate	\$122,575.20
Carpenter Foreman (out)	Active	1.00	40.0	20	800.00	L	\$85.49	incl. in rate	incl. in rate	\$68,393.60
Carpenters	Active	4.00	40.0	20	3,200.00	L	\$85.49	incl. in rate	incl. in rate	\$273,574.40
Equipment Operator (crane)	Active	1.00	40.0	20	800.00	L	\$81.60	incl. in rate	incl. in rate	\$65,278.40
Steelworker	Active	2.00	40.0	20	1,600.00	L	\$78.10	incl. in rate	incl. in rate	\$124,960.00
Barge Operator	Active	1.00	40.0	20	800.00	L	\$79.13	incl. in rate	incl. in rate	\$63,307.20
Barge, Deck Engineer, Winch Operator	Active	1.00	40.0	20	800.00	L	\$79.13	incl. in rate	incl. in rate	\$63,307.20
Electrician	Active	2.00	40.0	20	1,600.00	L	\$55.80	incl. in rate	incl. in rate	\$89,284.80
Crawler Crane (270tn)	Active	1.00	40.0	20	800.00	E	\$454.10	incl. in rate	incl. in rate	\$363,280.00
Barge, Sectional, 40'x10', includes ramp	Active	1.00	40.0	20	800.00	E	\$17.71	incl. in rate	incl. in rate	\$14,168.00
Conc Pump (small)	Active	1.00	3.0	20	60.00	Е	\$121.58	incl. in rate	incl. in rate	\$7,294.80
Equipment Operator (light)	Active	1.00	3.0	20	60.00	L	\$71.39	incl. in rate	incl. in rate	\$4,283.40

 Labor Hours
 12860
 TOTAL LABOR
 \$922,061.80

 Equipment Hours
 1660
 TOTAL EQUIPMENT
 \$384,742.80

MATERIAL COSTS												
Description	Item	Order	Conversion	Order	Order	Material						
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost						
quote from JM Works)	1.00	LS	1.000	1.00	\$2,331,511.00	\$2,331,511.00						
1/8" dia, type 6011, incl 1 operating engineer	55.00	ton	1.000	55.00	\$250.00	\$13,750.00						
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$92,206.18	\$92,206.18						
Material	10%	%	1.000	0.10	\$2,331,511.00	\$233,151.10						
Concrete Material Forms and Reinforcement Allowance	25%	%	1.000	0.25	\$922,061.80	\$230,515.45						
Rock Anchor Dowel Allowance for Tunnel and Bulkhead	10%	%	1.000	0.10	\$922,061.80	\$92,206.18						

 SUBCONTRACT COSTS

 Description
 Quantity
 Units
 Notes / Company
 Unit Price
 Contract or Quote Amount

 40.00
 EA
 1.000
 40.00
 \$480.00
 \$19,200.00

TOTAL SUBCONTRACTS \$19,200.00

 SUMMARY OF COSTS

 Labor Cost
 \$922,061.80
 Labor Burden @
 0.0%
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It is expected that small sectional barges will need to be mobilized into area to allow equipment to access diversion tunnel. Expecting barges to be small sectionals similar to a flexi float system due to the hauling restrictions due to the size of the haul road. Concrete pump is expected to be used 3 days to accommodate pouring concrete. This activity has been double shifted with two 10 hours shifts due to the restrictions from the California in water work permit.

PAY ITEM COST DETAIL WORKSHEET

Additional Pay Item Notes :

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Copco 1 Group Description : D02 Quantity
Daily Production 60.00 CY per 20 hour shift 5.0 Days \$662.33 per CY Project # Estimator : Mihaela Tomulescu Probable Low Cost Parameter CY per 69 Total Cost \$168,894 Unit Price Per CY \$562.98 Unit Price Total Cost \$198,699 Probable High Cost Parameter 42 \$258,309 \$861.03

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	20	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.2
Equipment Operator (medium)	Active	2.00	5.0	20	200.00	L	\$72.34	incl. in rate	incl. in rate	\$14,467.2
Equipment Operator (crane)	Active	1.00	5.0	20	100.00	L	\$81.60	incl. in rate	incl. in rate	\$8,159.80
Crawler Crane (270tn)	Active	1.00	5.0	20	100.00	E	\$454.10	incl. in rate	incl. in rate	\$45,410.00
Laborer	Active	4.00	5.0	20	400.00	L	\$51.07	incl. in rate	incl. in rate	\$20,429.20
Truck Driver (heavy)	Active	2.00	5.0	20	200.00	L	\$75.72	incl. in rate	incl. in rate	\$15,144.80
Hydraulic Excavator (5.0cy)	Active	2.00	5.0	20	200.00	E	\$276.50	incl. in rate	incl. in rate	\$55,300.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	5.0	20	100.00	E	\$63.28	incl. in rate	incl. in rate	\$6,328.00
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	5.0	20	200.00	E	\$57.41	incl. in rate	incl. in rate	\$11,482.00
				Labor Hours	1000				TOTAL LABOR	\$64,088.2
				Equipment Hours	600			1	OTAL EQUIPMENT	\$118,520.0

			Equipment Hour	S 600		TOTAL EQUIPMENT	\$118,520.00
MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$6,408.82		\$6,408.82
						TOTAL MATERIAL	\$6,408.82
						•	
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quote
·	•		Company		Price		Amount
						TOTAL SUBCONTRACTS	\$0.00
						•	
SUMMARY OF COSTS							
Labor Cost	\$64,088.20	Labor Burden @	0.09	% \$0.00			\$64,088.20
Material Cost	\$6,408.82	Material Tax @	7.75%				\$6,905.50
Equipment Cost	\$118,520.00	Equipment Tax @	7.75%	% \$9,185.30			\$127,705.30
Subcontractors	\$0.00						\$0.00
DIDECT COST CURTOTAL C	£400.047			#0.000		DIRECT COST SUBTOTALS	£400.000
DIRECT COST SUBTOTALS	\$189,017			\$9,682		DIRECT COST SUBTOTALS	\$198,699

Crane will be used to remove gate material as it because free from gate structure. Estimated 300 CY of concrete to be removed and the production reflected are adjusted to account for other items that need to be removed in regards to the gate. It is expected there will be access to this area by the tailrace cofferdam. This item is double shifted with two 10 hour shifts due to the California in water work restrictions.

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.010	Project : KRRP - Copco 1			
Description	:	Remove Concrete Dam down to Elev. 2463.5	Group : D07			
Quantity	:	36,000.00 cy				
Daily Production	:	380.00 cy per 20 hour shift	Project # : 2			
Work Days	:	94.7 Days	Estimator : Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$128.79 per cy	Probable Low Cost Parameter	418	\$4,172,881	\$115.91
Total Cost	:	\$4,636,534	Probable High Cost Parameter	304	\$5,563,841	\$154.55

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	94.7	20	1,894.00	Е	\$205.40	incl. in rate	incl. in rate	\$389,027.60
Hydraulic Excavator (5.0cy)	Active	1.00	94.7	20	1,894.00	Е	\$276.50	incl. in rate	incl. in rate	\$523,691.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	94.7	20	1,894.00	Е	\$76.00	incl. in rate	incl. in rate	\$143,944.00
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	47.1	20	1,885.20	Е	\$57.41	incl. in rate	incl. in rate	\$108,229.33
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	94.7	20	1,894.00	Е	\$63.28	incl. in rate	incl. in rate	\$119,852.32
Hydraulic Thumbs/Shear Attachment	Active	1.00	94.7	20	1,894.00	Е	\$24.92	incl. in rate	incl. in rate	\$47,198.48
Crawler Crane (270tn)	Active	1.00	47.4	20	947.00	Е	\$454.10	incl. in rate	incl. in rate	\$430,032.70
Labor Foreman	Active	1.00	94.7	20	1,894.00	L	\$58.87	incl. in rate	incl. in rate	\$111,503.57
Laborer	Active	6.00	94.7	20	11,364.00	L	\$51.07	incl. in rate	incl. in rate	\$580,393.57
Equipment Operator (medium)	Active	4.00	94.7	20	7,576.00	L	\$72.34	incl. in rate	incl. in rate	\$548,017.54
Equipment Operator (crane)	Active	1.00	47.4	20	947.00	L	\$81.60	incl. in rate	incl. in rate	\$77,273.31
Truck Driver (heavy)	Active	2.00	47.1	20	1,885.20	L	\$66.92	incl. in rate	incl. in rate	\$126,165.12
Drilling and Blasting Operator	Active	3.00	94.7	20	5,682.00	L	\$48.70	incl. in rate	incl. in rate	\$276,694.93
Air Track Drill 4"	Active	1.00	94.7	20	1,894.00	Е	\$160.98	incl. in rate	incl. in rate	\$304,896.12
Clamshell Bucket 3.5CY	Active	1.00	47.4	20	947.00	Е	\$13.29	incl. in rate	incl. in rate	\$12,585.63
Acetylene Torches	Active	4.00	94.7	20	7,576.00	Е	\$0.44	incl. in rate	incl. in rate	\$3,333.44
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	94.7	20	1,894.00	Е	\$89.29	incl. in rate	incl. in rate	\$169,115.26
				Labor Hours	29,348				TOTAL LABOR	\$1,720,048.04
			Eq	uipment Hours	24,613				TOTAL EQUIPMENT	\$2,251,905.88

Ou						
	uantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$86,002.40	\$86,002.40
Blasting Material	36,000.00	CY	1.050	37,800.00	\$5.56	\$210,243.60
Drill Bit Wear Allowance (10% of Drilling Eq)	1.00	LS	1.000	1.00	\$30,489.61	\$30,489.61

TOTAL MATERIAL \$326,735.61

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	1 LS	Cost per Mob	\$30,000.00		\$30,000.00
Hauling cost to Yreka Transfer 40 Miles	270.00 Loads	300 lbs per CY	\$400.00		\$108,000.00
					\$0.00
				_	\$0.00
				TOTAL SUBCONTRACTS	\$138,000,00

			TOTAL SUBCONTRACTS	\$138,000.00
SUMMARY OF COSTS				
Labor Cost	\$1,720,048.04 Labor Burden @	0.0% \$0.00		\$1,720,048.04
Material Cost	\$326,735.61 Material Tax @	7.75% \$25,322.01		\$352,057.62
Equipment Cost	\$2,251,905.88 Equipment Tax @	7.75% \$174,522.71		\$2,426,428.59
Subcontractors	\$138,000.00	·		\$138,000.00
DIRECT COST SUBTOTALS	\$4,436,690	\$199,845	DIRECT COST SUBTOTALS	\$4,636,534
Additional Pay Item Notes :				

	Details	
High Cost Factors		Low Cost Factors
Bad Weather	0%	No Bad Weather
Gas Price Increase Unforeseen Contaminated Mats/ Access Issues	10% 10%	Gas Price Decrease 1 No Unforeseen Contaminated Mats/ Access Issues
Unforeseen Contaminated Mats/ Access issues	20%	No Uniforeseen Contaminated Mats/ Access issues
	20 %	<u> </u>
Production Per Hour	Hours Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production
	38 8	50% 152
	38 20	50% 380
Haul Notes	Excavator Loading Production per shift	
CY	36,000.00 CY per Hour	25
Swell Factor	30% CY Bucket Size	2.50
Bulk CY	46800 Buckets Per Hour	10
Haul Vehicle 60% Capacity (2 tons per CY)	7.2 # of Excavators	1.00
# of Haul Vehicles	2 CY per Hour (5 CY Bucket)	25
		95
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)	5 CY Per Hour Ideal Production Per 8 Hour Shift	
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)	3 Efficient Compared to Ideal Production	26%
Haul Speed (Loaded MPH)	10.00 Inefficiencies Compared to Ideal Production	74%
Return Speed (Unloaded MPH)	10.00	
Haul Distance (Miles)	0.50	
Shift Length (Hours)	20	
Cyce Time	Breaker Production	
Load Time (Load Time Minutes / 60mins)	0.08 Hydraulic Hammer CY per Hour	19.00
Haul Time (Haul Distance / Haul Speed)	0.05 # of Hammers	1
Dump Time (Dump Time Minutes / 60 Mins)	0.05 CY per Hour	19
Return Time (Haul Distance / Return Speed)	0.05 CY per Hour Back Check	19
Hours Per Cycle	0.23 32CY per HR per 8hr shift (Ideal prod)	3200%
Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)	80% Efficient Compared to Ideal Production	59%
Actual Hours Per Cycle (Hours per Cycle / Efficency Factor) Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	0.29 Inefficiencies Compared to Ideal Production 3250	41%
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	942.5	
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)	3.45	
Number of Haul Days	47	
	Drilling and Blasting Production per shift	
	Drilling and Blasting Production per shift Drilling and Blasting CY per Hour	19
	# of Drills	1.00
	CY per Hour	19
	CY per Hour Back Check	19
	38CY per HR per 8hr shift (Ideal prod)	38 50%
	Efficient Compared to Ideal Production Inefficiencies Compared to Ideal Production	50% 50%
	Intelliciencies compared to ideal Froduction	30%

2.010 Remove Concrete Dam down to Elev. 2463.5

Other Notes

Demolition of the the concrete dam is by a combination of blasting and hydrulic breakers. The material is expected to fall to the down stream side near the power house coffer dam. Equipment will be staged at bottom to process and prepare material for hauling. Hauling is expected to be 80% efficient after accounting the narrow and steep haul routes, staff breaks, hauling at night, ect. A concrete sawing subcontractor is expected to periodicly be used during the demo process and an allowance has been used to account for the cost. It is expected that the demolition activity will have reduced production due to the steenight of concrete and the amount of oversize reinforcement embedded with in the concrete. A 270tion creaw will be used to support the demolition operation for half of the duration. A larger crane has been used due to the expectation of needing to lift equipment or materials at larger radius. It is expected that California in water work retrictions to account for the California in water work retrictions.

\$150,309.39

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	2.011			Project	: KRRP - Copco 1			
Description	:	Remove Concrete Intake Str	ucture on Rig	ght Abutment	Group	: D07			
Quantity	:	16,400.00 cy							
Daily Production	:	380.00 cy per	20	hour shift	Project #	: 2			
Work Days	:	43.2 Da	ys		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$143.98 per cy			Probable Low (Cost Parameter	437	\$2,007,015	\$122.38
Total Cost	:	\$2,361,194			Probable High	Cost Parameter	304	\$2.833.433	\$172.77

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Excavator (2.5cy)	Active	1.00	43.2	20	864.00	E	\$205.40	incl. in rate	incl. in rate	\$177,465.60
Hydraulic Excavator (5.0cy)	Active	2.00	43.2	20	1,728.00	E	\$276.50	incl. in rate	incl. in rate	\$477,792.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	43.2	20	864.00	E	\$76.00	incl. in rate	incl. in rate	\$65,664.00
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	31.9	20	1,275.60	E	\$57.41	incl. in rate	incl. in rate	\$73,232.20
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	2.00	43.2	20	1,728.00	E	\$63.28	incl. in rate	incl. in rate	\$109,347.84
Hydraulic Thumbs/Shear Attachment	Active	1.00	43.2	20	864.00	E	\$24.92	incl. in rate	incl. in rate	\$21,530.88
Crawler Crane (270tn)	Active	1.00	21.6	20	432.00	E	\$454.10	incl. in rate	incl. in rate	\$196,171.20
Labor Foreman	Active	1.00	43.2	20	864.00	L	\$58.87	incl. in rate	incl. in rate	\$50,865.41
Laborer	Active	6.00	43.2	20	5,184.00	L	\$51.07	incl. in rate	incl. in rate	\$264,762.43
Equipment Operator (medium)	Active	4.00	43.2	20	3,456.00	L	\$72.34	incl. in rate	incl. in rate	\$249,993.22
Equipment Operator (crane)	Active	1.00	21.6	20	432.00	L	\$81.60	incl. in rate	incl. in rate	\$35,250.34
Truck Driver (heavy)	Active	2.00	31.9	20	1,275.60	L	\$66.92	incl. in rate	incl. in rate	\$85,368.25
Drilling and Blasting Operator	Active	3.00	43.2	20	2,592.00	L	\$48.70	incl. in rate	incl. in rate	\$126,221.98
Air Track Drill 4"	Active	1.00	43.2	20	864.00	Е	\$160.98	incl. in rate	incl. in rate	\$139,086.72
Clamshell Bucket 3.5CY	Active	1.00	43.2	20	864.00	Е	\$13.29	incl. in rate	incl. in rate	\$11,482.56
Acetylene Torches	Active	4.00	43.2	20	3,456.00	Е	\$0.44	incl. in rate	incl. in rate	\$1,520.64
				_		_				
				Labor Hours	13,804				TOTAL LABOR	\$812,461.62
			Fai	ipment Hours	12,940				TOTAL EQUIPMENT	\$1,273,293.64

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$40,623.08	\$40,623.08
Blasting Material	16,400.00	CY	1.050	17,220.00	\$5.56	\$95,777.64
Drill Bit Wear Allowance (10% of Drilling Eq)	1.00	LS	1.000	1.00	\$13,908.67	\$13,908.67

SUBCONTRACT COSTS

Pescription Quantity Units Notes / Unit Company Price Amount

Hauling cost to Yreka Transfer 40 Miles 37.00 Loads 90lbs per CY \$400.00 \$14,800.00

TOTAL SUBCONTRACTS \$14,800.00

0.0% \$0.00 Included in hourly labor rate.		\$812,461.62
7.75% \$11,648.98		\$161,958.37
7.75% \$98,680.26		\$1,371,973.89
		\$14,800.00
\$110,329	DIRECT COST SUBTOTALS	\$2,361,194
	7.75% \$11,648.98 7.75% \$98,680.26	7.75% \$11,648.98 7.75% \$98,680.26

2.011 Remove Concrete Intake Structure on Right Abutment Details High Cost Factors Low Cost Factors No Bad Weather Gas Price Decrease Inforeseen Contaminated Mats/ Access Issues No Unforeseen Contaminated Mats/ Access Is Excavator Loading Production per shift Excavator Loading 16,400.00 CY per Hour 60% CY Bucket Size 26240 Buckets Per Hour 7.2 # of Excavators 21 2.50 Bulk CY Haul Vehicle 60% Capacity (2 tons per CY) 2 CY per Hour (5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift # of Haul Vehicles Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Haul Speed (Loaded MPH) Inefficiencies Compared to Ideal Production 78% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Load Time (Load Time Minutes / 60mins) Haul Time (Haul Distance / Haul Speed) 0.08 Hydraulic Hammer CY per Hour 0.10 # of Hammers Dump Time (Dump Time Minutes / 60 Mins) 0.05 CY per Hour 9.5 5 CY per Hour Back Check 8 32CY per HR per 8hr shift (Ideal prod) 4 Efficient Compared to Ideal Production Return Time (Haul Distance / Return Speed) 9.5 3200% 30% Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT) Actual Hours Per Cycle (Hours per Cycle / Efficency Factor) Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) 0.35 1822 637.7 2.86 32 Inefficiencies Compared to Ideal Production Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days Other Notes

TOTAL SUBCONTRACTS

\$3,218.60

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER Group Description : D10 10 hour shift Daily Production Project # 4.0 Days \$1.34 per LBS Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 15812.5 Total Cost \$62,696 Unit Price Per LBS \$1.14 Work Days Unit Price Total Cost Probable High Cost Parameter 10312.5 \$92,200 \$1.68 \$73,760

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.0	10	40.00	L	\$58.87	incl. in rate	incl. in rate	\$2,354.88
Laborer	Active	3.00	4.0	10	120.00	L	\$51.07	incl. in rate	incl. in rate	\$6,128.76
Steelworker	Active	2.00	4.0	10	80.00	L	\$78.10	incl. in rate	incl. in rate	\$6,248.00
Equipment Operator (crane)	Active	2.00	4.0	10	80.00	L	\$81.60	incl. in rate	incl. in rate	\$6,527.84
Equipment Operator (medium)	Active	1.00	4.0	10	40.00	L	\$72.34	incl. in rate	incl. in rate	\$2,893.44
Barge Operator	Active	2.00	4.0	10	80.00	L	\$79.13	incl. in rate	incl. in rate	\$6,330.72
Barge, Deck Engineer, Winch Operator	Active	2.00	4.0	10	80.00	L	\$79.13	incl. in rate	incl. in rate	\$6,330.72
Crawler Crane (130tn)	Active	1.00	4.0	10	40.00	E	\$262.91	incl. in rate	incl. in rate	\$10,516.40
Barge (400T)	Active	2.00	4.0	10	80.00	E	\$99.50	incl. in rate	incl. in rate	\$7,960.00
Hydraulic Crane (80tn)	Active	1.00	4.0	10	40.00	Е	\$197.66	incl. in rate	incl. in rate	\$7,906.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.0	10	40.00	E	\$76.00	incl. in rate	incl. in rate	\$3,040.00
Acetylene Torches	Active	2.00	4.0	10	80.00	E	\$0.47	incl. in rate	incl. in rate	\$37.60

Labor Hours	520	TOTAL LABOR	\$36,814.36
Equipment Hours	280	TOTAL EQUIPMENT	\$29,460.40
MATERIAL COSTS			

	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,840.72		\$1,840.72
						TOTAL MATERIAL	\$1 840 72

Quantity	Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
30.00	Mile	1.000	\$80.62	\$2,418.60
2.00	Loads	20 tons a load	\$400.00	\$800.00
			30.00 Mile 1.000	30.00 Mile 1.000 \$80.62

L							
	SUMMARY OF COSTS						
ſ	Labor Cost	\$36,814.36	Labor Burden @	0.0%	\$0.00		\$36,814.36
	Material Cost	\$1,840.72	Material Tax @	7.75%	\$142.66		\$1,983.37
	Equipment Cost	\$29,460.40	Equipment Tax @	7.75%	\$2,283.18		\$31,743.58
	Subcontractors	\$3,218.60					\$3,218.60
	DIRECT COST SUBTOTALS	\$71,334	•		\$2,426	DIRECT COST SUBTOTALS	\$73,760

dditional Pay Item Notes

The structural steel at the spillway of Copco 1 will be demolished from the reservoir side using a crane and a barge. There will be a 130 crane on the barge supporting the crew of steel workers and laborers cutting the members with torches. There will be two barges 1 supporting the crane operation and one transporting material to load out site. A 80 ton hydraulic crane and a loader will off load the demolished structural steel. There will be two load of at 20 tons a load that will be hauled to Yreka recycle facility.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.013	Project	: KRRP - Copco 1			
Description	: [Install Diversion Tunnel Plugs	Group	: D02			
Quantity	:	30.00 CY					
Daily Production	: [6.00 CY per 20 hour shift	Project #	: 2			
Work Days	: "	5.0 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$3,278.31 per CY	Probable Low	Cost Parameter	6.6	\$88,514	\$2,950.48
Total Cost	:	\$98,349	Probable High	Cost Parameter	5.1	\$113,102	\$3,770.05

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Carpenter Foreman (out)	Active	1.00	5.0	20	100.00	L	\$85.49	incl. in rate	incl. in rate	\$8,549.20
Carpenters	Active	2.00	5.0	20	200.00	L	\$85.49	incl. in rate	incl. in rate	\$17,098.40
Conc Pump (small)	Active	1.00	1.3	20	25.00	E	\$121.58	incl. in rate	incl. in rate	\$3,039.50
Carpenters, Journeyman	Active	2.00	5.0	20	200.00	L	\$77.54	incl. in rate	incl. in rate	\$15,507.80
Equipment Operator (crane)	Active	1.00	2.5	20	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Equipment Operator (light)	Active	1.00	1.3	20	25.00	L	\$69.19	incl. in rate	incl. in rate	\$1,729.75
Hydraulic Crane (80tn)	Active	1.00	2.5	20	50.00	Е	\$197.66	incl. in rate	incl. in rate	\$9,883.00
Steelworker	Active	3.00	2.0	20	120.00	L	\$78.16	incl. in rate	incl. in rate	\$9,378.60

Labor Hours	695	TOTAL LABOR	\$56,343.65
Equipment Hours	75	TOTAL EQUIPMENT	\$12,922.50

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Concrete	30.00	су	1.100	33.00	\$159.23	\$5,254.59
Reinforcement (At 90lbs per CY)	1.35	Ton	1.100	1.49	\$1,000.00	\$1,485.00
Formwork Allowance (20% of Labor)	1.00	LS	1.100	1.10	\$11,268.73	\$12,395.60
Consumables (10% of Equip & Labor)	1.00	LS	1.000	1.00	\$6,926.62	\$6,926.62

TOTAL MATERIAL \$26,061.81

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

UMMARY OF COSTS					
Labor Cost	\$56,343.65 Lal	abor Burden @	0.0%		
Material Cost	\$26,061.81 Ma	aterial Tax @	7.75%	\$2,019.79	
Equipment Cost	\$12,922.50 Eq	quipment Tax @	7.75%	\$1,001.49	
Subcontractors	\$0.00				
IRECT COST SUBTOTALS	\$95,328			\$3,021	DIRECT COST SUBTOTALS
Additional Pay Item Notes :					

See production notes

2.013 Install Diversion Tunnel Plugs Details High Cost Factors Low Cost Factors Bad Weather 0% No Bad Weather 0% Gas Price Increase 5% Gas Price Decrease 5% Unforeseen Contaminated Mats/ Access Issues 10% No Unforeseen Contaminated Mats/ Access Issues 5%

Production Per Hour	Hours Overall Production
	0.3 8 2.4
	20 6

Production & Sequence Notes

The Plug is expected to be formed in two sections. The inner section will be formed and braced off of the tunnel walls. After the inner form (set form) is installed the face form will be built similar to the set form by bracing off of the tunnel walls. To ensure consolidation a high slump small aggregate mix will be used and concrete vibrators will have access through the Bat opening block out at the top. One 5 man crew will be used to construct the formwork, place the concrete, and strip the form work. One crew of 3 rodbusters will be used to tie and brace reinforcement. Expected duration is 5 days to form the plug, 2 days to reinforce the plug, 1 days to pour the plug, and 2 days to strip the plug. Crane will be used 1/2 of time to support crew by flying material close to plug location. A small pump will be used to install concrete. Please note the production is adjusted to account for the duration as listed above. This item will be double shifted with 2 10 hour shifts due to the California in water work restriction.

Other Notes

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.014	Project	: KRRP - Copco 1			
Description	:	Remove Diversion Tunnel Control Structure Concrete	Group	: D02			
Quantity	:	350.00 CY					
Daily Production	:	60.00 CY per 20 hour shift	Project #	: 2			
Work Days	:	5.8 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$994.55 per CY	Probable Low	Cost Parameter	66	\$313,282	\$895.09
Total Cost	:	\$348,092	Probable High	Cost Parameter	48	\$417,710	\$1,193.46

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Barge (400T)	Active	1.00	5.8	20	116.00	E	\$99.50	incl. in rate	incl. in rate	\$11,542.00
Crawler Crane (130tn)	Active	1.00	5.8	20	116.00	E	\$262.91	incl. in rate	incl. in rate	\$30,497.56
Air Tool, Chipping Hammer	Active	5.00	5.8	20	580.00	Е	\$2.23	incl. in rate	incl. in rate	\$1,293.40
Diver, Wet	Active	8.00	5.8	20	928.00	L	\$142.66	incl. in rate	incl. in rate	\$132,387.55
Diver, Tender	Active	8.00	5.8	20	928.00	L	\$92.77	incl. in rate	incl. in rate	\$86,094.27
Truck Driver (heavy)	Active	2.00	5.8	20	232.00	L	\$66.92	incl. in rate	incl. in rate	\$15,526.37
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	5.8	20	232.00	E	\$57.41	incl. in rate	incl. in rate	\$13,319.12
Welder, Portable	Active	1.00	5.8	20	116.00	Е	\$7.84	incl. in rate	incl. in rate	\$909.15
N I II D. I 10 50V			5.0		440.00	_	440.00			04.544.0
Clamshell Bucket 3.5CY	Active	1.00	5.8	20	116.00	E	\$13.29			\$1,541.64
				Labor Hours	2088				TOTAL LABOR	\$234,008.1
				Equipment Hours	1276				TOTAL EQUIPMENT	\$59,102.87

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

Description	Quantity Units	Notes /	Unit	Contra	ct or Quote
		Company	Price	Δ.	mount
Vire Saw Sub	1 LS	Allowance	\$50,000.00		\$50,000.00
Hauling cost to Yreka Transfer 40 Miles	1.00 Loads	90lbs per CY	\$400.00		\$400.00

SUMMARY OF COSTS						
Labor Cost	\$234,008.19	Labor Burden @	0.0%			\$234,008.1
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$59,102.87	Equipment Tax @	7.75%	\$4,580.47		\$63,683.3
Subcontractors	\$50,400.00					\$50,400.0
DIRECT COST SUBTOTALS	\$343,511	_'		\$4,580	DIRECT COST SUBTOTALS	\$348,09
Additional Pay Item Notes :						
Please see sequence notes.						
Tioddo dod dogadiloo fiologi.						

2.014 Remove Diversion Tunnel Control Structure Concrete Details High Cost Factors Low Cost Factors Bad Weather Gas Price Increase Unforeseen Contaminated Mats/ Access Issues No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues 0% 10% 10% 20%

Production Per Hour	Hours	Overall Production	\blacksquare
	3	8	24
		20	60

Crew Notes

350.00 CY 60.00 CY per Day

7.2 CY per Truck 49 # of loads 5.80 # of days 8 Loads per Day

12 Excavator Buckets 5CY

2.00 # of trucks 4.19 # of loads per Shift Per truck 48.61 Back Check CY

350.00 Back Check CY

Other Notes
This activity is to remove the existing diversion control structure. This will need to be removed before the drawdown period begins due to the existing valves restricting the required flow rates for the draw down. Due to the depth of the valves and similar to payitem 2.002, divers performing the demolition activity will only be able to spend 20 mins at a time to demolish the structure. The demolished material will be loaded out with a clamshell bucket. This item will be double shifted with two 10 hours shifts due to the California in water work restrictions.

Production and Sequence notes

Barge will be used to support entire operation

Barge Crawler Crane Chipping Hammers Divers Diver Tender Truck Wire Saw

Crane will be used to bucket demolished material out of the reservoir Chipping hammers will break up the structure Divers will be operating the chipping hammers during the demolition process Tenders are required for each diver Trucks are anticipated to be used half of the time once there is enough material to load out Expect to use wire saw on some of the structure

PAY ITEM COST DETAIL WORKSHEET

Daily Production :	13,750.00		10 hour shift		Project #	: 2				
Work Days :	0.8				Estimator		Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price :		per LBS			Probable Low C	ost Paramete	er	15812.5	\$4,238	\$0.39
Total Cost :	\$4,986				Probable High C	ost Paramet	er	11000	\$5,983	\$0.54
REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper Cost	. Burden Rate	Labor / Equipment Cost
abor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate		\$4
aborer	Active	3.00	0.8	10	24.00	L	\$51.07	incl. in rate		\$1,2
Steelworker	Active	2.00	0.8	10	16.00	L	\$78.10	incl. in rate		\$1,2
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate		\$5
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.8	10	8.00	E	\$63.11	incl. in rate		\$5
				Labor Hou	rs 56				TOTAL LABOR	\$3,5
				Equipment Hou	rs 8				TOTAL EQUIPMENT	\$5
ATERIAL COSTS Description	Item	Order		nversion	Order		Order			Material
Description onsumables 5% labor (saw blades, drill bits, etc)	Item Quantity 1.00	Order Unit LS	Facto	oversion or / Waste 1.000	Order Quantity 1.00		Price	\$176.25		Material Cost \$17
Description	Quantity	Unit	Facto	or / Waste	Quantity		Price	\$176.25		Cost
Description	Quantity	Unit	Facto	or / Waste	Quantity		Price	\$176.25	TOTAL MATERIAL	Cost \$1
Description onsumables 5% labor (saw blades, drill bits, etc)	Quantity	Unit	Facto	or / Waste	Quantity		Price	\$176.25	TOTAL MATERIAL	Cost \$1
Description onsumables 5% labor (saw blades, drill bits, etc) UBCONTRACT COSTS Description	Quantity	Unit	Fact	or / Waste	Quantity	Unit Price	Price	\$176.25	TOTAL MATERIAL	Cost \$1
Description onsumables 5% labor (saw blades, drill bits, etc) UBCONTRACT COSTS Description uzardous waste cleanup/pickup/disposal, solid	Quantity 1.00	Unit LS	Fact	or / Waste 1.000	Quantity		Price	\$176.25	TOTAL MATERIAL	Cost \$1 \$1 Contract or Quote
Description Insumables 5% labor (saw blades, drill bits, etc) JBCONTRACT COSTS Description Zardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%)	Quantity 1.00	Unit LS	Facts N Cc	or / Waste 1.000	Quantity		Price	\$176.25 \$595.00	TOTAL MATERIAL	Cost \$1 \$1 Contract or Quote Amount
Description Insumables 5% labor (saw blades, drill bits, etc) IBCONTRACT COSTS Description Zardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%)	Quantity 1.00 Quantity Quantity	Unit LS Units	Facts N Cc	or / Waste 1.000	Quantity 1.00	Price	Price	\$595.00		Cost \$1 \$1 Contract or Quote Amount
Description nsumables 5% labor (saw blades, drill bits, etc) DECONTRACT COSTS Description zardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%)	Quantity 1.00 Quantity Quantity	Unit LS Units	Facts N Cc	or / Waste 1.000	Quantity 1.00	Price	Price	\$595.00	TOTAL MATERIAL	Cost \$1 \$1 Contract or Quote Amount \$3
Description Insumables 5% labor (saw blades, drill bits, etc) DECONTRACT COSTS Description Zardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%) Lauling cost to Yreka Transfer 40 Miles	Quantity 1.00 Quantity Quantity	Unit LS Units	Facts N Cc	or / Waste 1.000	Quantity 1.00	Price	Price	\$595.00		Cost \$1 \$1 Contract or Quote Amount \$3
Description Insumables 5% labor (saw blades, drill bits, etc) JBCONTRACT COSTS Description Zardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%) Hauling cost to Yreka Transfer 40 Miles JMMARY OF COSTS bor Cost	Quantity 1.00 Quantity Quantity 0.55 1.00	Units Units ton Loads	Factor Fa	or / Waste 1.000 lotes / impany 1.000 ns a load	Quantity 1.00 0.55	Price	Price	\$595.00		Cost \$1 \$1 Contract or Quote Amount \$3 \$4
Description Insumables 5% labor (saw blades, drill bits, etc) JBCONTRACT COSTS Description Izardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%) Hauling cost to Yreka Transfer 40 Miles JMMARY OF COSTS bor Cost Iterial Cost	Quantity 1.00 Quantity 0.55 1.00 \$3,525.02 \$176.25	Units Units Labor Burden Material Tax @	Factor Fa	lotes / Impany 1.000 1.000 1.000 1.000 1.000 1.775	Quantity 1.00 0.55	Price	Price	\$595.00		Cost \$1 \$1 Contract or Quote Amount \$3 \$4 \$7
Description onsumables 5% labor (saw blades, drill bits, etc) DECONTRACT COSTS Description zeardous waste cleanup/pickup/disposal, solid kup, bulk material, maximum (10%) Hauling cost to Yreka Transfer 40 Miles UMMARY OF COSTS Bor Cost atterial cost Equipment Cost	Quantity 1.00 Quantity Quantity 0.55 1.00	Units Units Labor Burden Material Tax @	Factor Fa	or / Waste 1.000 lotes / impany 1.000 ns a load	Quantity 1.00 0.55	Price	Price	\$595.00		Cost \$11 \$11 Contract or Quote Amount \$33 \$44 \$71 \$33.51
Description onsumables 5% labor (saw blades, drill bits, etc) UBCONTRACT COSTS	Quantity 1.00 Quantity Quantity 0.55 1.00 \$3,525.02 \$176.25 \$504.88	Units Units Labor Burden Material Tax @	Factor Fa	lotes / Impany 1.000 1.000 1.000 1.000 1.000 1.775	Quantity 1.00 0.55	Price	Price	\$595.00		Cost \$17

During the removal of the structural steel of the spillway the handrails will be removed. This estimate accounts for the labor and the hauling of material but equipment is accounted for in pay item 2.012.

TOTAL EQUIPMENT

\$36,778.50

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.016	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Radial Gates	Group	: D03			
Quantity	:	140,500.00 LBS	_				
Daily Production	:	28,000.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	5.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.67 per LBS	Probable Low C	ost Parameter	30800	\$84,515	\$0.60
Total Cost	:	\$93,906	Probable High C	Cost Parameter	21000	\$117,382	\$0.84

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.6
Laborer	Active	3.00	5.0	10	150.00	L	\$51.07	incl. in rate	incl. in rate	\$7,660.9
Steelworker	Active	2.00	5.0	10	100.00	L	\$78.10	incl. in rate	incl. in rate	\$7,810.00
Equipment Operator (crane)	Active	2.00	5.0	10	100.00	L	\$81.60	incl. in rate	incl. in rate	\$8,159.80
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.8
Barge Operator	Active	2.00	5.0	10	100.00	L	\$79.13	incl. in rate	incl. in rate	\$7,913.40
Barge, Deck Engineer, Winch Operator	Active	2.00	5.0	10	100.00	L	\$79.13	incl. in rate	incl. in rate	\$7,913.40
Crawler Crane (130tn)	Active	1.00	5.0	10	50.00	E	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Barge (400T)	Active	2.00	5.0	10	100.00	E	\$99.50	incl. in rate	incl. in rate	\$9,950.00
Hydraulic Crane (80tn)	Active	1.00	5.0	10	50.00	E	\$197.66	incl. in rate	incl. in rate	\$9,883.00
oader, FE Rubber Tire (5.25cy)	Active	1.00	5.0	10	50.00	Е	\$76.00	incl. in rate	incl. in rate	\$3,800.0
				r						
				Labor Hours	650				TOTAL LABOR	\$46,017.

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	ls	1.000	1.00	\$2,300.90		\$2,300.90
						TOTAL MATERIAL	\$2,300.90

Equipment Hours

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)						
	7.03	ton	1.000	7.03	\$595.00	\$4,179.88
Hauling cost to Yreka Transfer 40 Miles	4.00	Loads	20 tons a load		\$400.00	\$1,600.00
					TOTAL SUBCONTRACTS	\$5,779.88

SUMMARY OF COSTS						
Labor Cost	\$46,017.95	Labor Burden @	0.0%	\$0.00		\$46,017.95
Material Cost	\$2,300.90	Material Tax @	7.75%	\$178.32		\$2,479.22
Equipment Cost	\$36,778.50	Equipment Tax @	7.75%	\$2,850.33		\$39,628.83
Subcontractors	\$5,779.88					\$5,779.88
DIRECT COST SUBTOTALS	\$90,877			\$3,029	DIRECT COST SUBTOTALS	\$93,906
Additional Pay Item Notes :						
13 radial gates, wall and soleplates an	d 3-hoists, by barge and	crane. Assumed contains pair	nt with heavy metals 10% of the	total lbs. 34 miles	from Copco lake to Yreka transfer recycling.	

\$223.20

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.017	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose Radial Gate Stop logs	Group	: D03			
Quantity	:	18,000.00 LBS					
Daily Production	:	18,000.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	1.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.28 per LBS	Probable Low C	ost Parameter	19800	\$4,594	\$0.26
Total Cost	:	\$5,104	Probable High C	Cost Parameter	13500	\$6,381	\$0.35

Idle crew Worked /day Hours Rate Cost Rate Cost Labor Foreman Active 1.00 1.0 10 10.00 L \$58.87 incl. in rate incl. in rate \$1 Laborer Active 3.00 1.0 10 30.00 L \$51.07 incl. in rate incl. in rate \$1			3									
Labor Foreman Active 1.00 1.0 10 10.00 L \$58.87 incl. in rate incl. in rate \$5 Laborer Active 3.00 1.0 10 30.00 L \$51.07 incl. in rate incl. in rate \$1								L/E				Labor / Equipment
Laborer Active 3.00 1.0 10 30.00 L \$51.07 incl. in rate incl. in rate \$1	·	ldle (Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
	Labor Foreman A	Active	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Steelworker Active 3.00 1.0 10 30.00 L \$78.10 incl. in rate incl. in rate \$2	Laborer A	Active	Active	3.00	1.0	10	30.00	L	\$51.07	incl. in rate	incl. in rate	\$1,532.19
	Steelworker A	Active	Active	3.00	1.0	10	30.00	L	\$78.10	incl. in rate	incl. in rate	\$2,343.00
Labor Hours 70 TOTAL LABOR \$4						Labor Hours	70				TOTAL LABOR	\$4,463.91
Equipment Hours 0 TOTAL EQUIPMENT						Equipment Hours	0			Т	OTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$223.20	\$223.20

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load	\$400.00	\$400.00

TOTAL SUBCONTRACTS \$400.00

\$4,463.91	Lahor Burden @				
	Labor Daracii &	0.0%	\$0.00		\$4,463.9
\$223.20	Material Tax @	7.75%	\$17.30		\$240.4
\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
\$400.00	,				\$400.00
\$5,087			\$17	DIRECT COST SUBTOTALS	\$5,10
				·	
					i .
	\$0.00 \$400.00 \$5,087	\$0.00 Equipment Tax @ \$400.00	\$0.00 Equipment Tax @ 7.75% \$400.00 \$5,087	\$0.00 Equipment Tax @ 7.75% \$0.00	\$0.00 Equipment Tax @ 7.75% \$0.00

The stop logs will removed with the same equipment from payitem 2.016.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.018	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose Stop log hoist, track and supports	Group	: D03			
Quantity	:	26,000.00 LBS					
Daily Production	:	13,000.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.38 per LBS	Probable Low	Cost Parameter	14300	\$8,828	\$0.34
Total Cost	:	\$9,809	Probable High	Cost Parameter	9750	\$12,261	\$0.47

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	3.00	2.0	10	60.00	L	\$51.07	incl. in rate	incl. in rate	\$3,064.38
Steelworker	Active	3.00	2.0	10	60.00	L	\$78.10	incl. in rate	incl. in rate	\$4,686.00
						1				
				Labor Hours	140				TOTAL LABOR	\$8,927.82
				Equipment Hours	0			1	OTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$446.39	\$446.39

TOTAL MATERIAL \$446.39

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load	\$400.00	\$400.00
				TOTAL SUI	SCONTRACTS \$400.00

SUMMARY OF COSTS						
Labor Cost	\$8,927.82	Labor Burden @	0.0%	\$0.00		\$8,927.82
Material Cost	\$446.39	Material Tax @	7.75%	\$34.60		\$480.99
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$9,774	-		\$35	DIRECT COST SUBTOTALS	\$9,809
Additional Pay Item Notes :						

The removal of stoplog hoist, track and supports is done by barge and crane with one 9-men crew (1 foreman, 6 steelworkers, 1 welder, 1 electrician and 2 equipment operators). Based on the current production rate and the fact that we dispose big pieces of steel we use 2 trucks per day.

\$20,164.65

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER Project Group Description Quantity Daily Production Work Days : D03 10,850.00 LBS per : 2 : Mihaela Tomulescu 5.0 Days \$4.24 per LBS 28,843 LBS per 12477.5 Unit Price Per LBS Unit Price Probable Low Cost Parameter \$194,517 \$274,612 \$3.60 \$228,843 Probable High Cost Parameter 8680 \$5.09 Total Cost

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	3.00	5.0	10	150.00	L	\$51.07	incl. in rate	incl. in rate	\$7,660.95
Equipment Operator (crane)	Active	2.00	5.0	10	100.00	L	\$81.60	incl. in rate	incl. in rate	\$8,159.80
Diver, Wet	Active	8.00	5.0	10	400.00	L	\$142.66	incl. in rate	incl. in rate	\$57,063.60
Diver, Tender	Active	8.00	5.0	10	400.00	L	\$92.77	incl. in rate	incl. in rate	\$37,109.60
Barge Operator	Active	2.00	5.0	10	100.00	L	\$79.13	incl. in rate	incl. in rate	\$7,913.40
Barge, Deck Engineer, Winch Operator	Active	2.00	5.0	10	100.00	L	\$79.13	incl. in rate	incl. in rate	\$7,913.40
Barge, Sectional, 40'x10', includes ramp	Active	2.00	5.0	10	100.00	E	\$17.71	incl. in rate	incl. in rate	\$1,771.00
Crawler Crane (270tn)	Active	2.00	5.0	10	100.00	E	\$454.10	incl. in rate	incl. in rate	\$45,410.00
Hydraulic Crane (80tn)	Active	1.00	5.0	10	50.00	E	\$197.66	incl. in rate	incl. in rate	\$9,883.00

Equipment nous	230	TOTAL EQUI MENT	ψ01,004.00
Equipment Hours	250	TOTAL EQUIPMENT	\$57,064.00
Labor Hours	1300	TOTAL LABOR	\$128,764.35

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$19,314.65	\$19,314.65
Selective demolition, torch cutting, steel, 1" thick						
plate (assumed qty)	1,000.00	LF	1.000	1,000.00	\$0.85	\$850.00

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company	Unit Price			Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (100%)			Company	FIICE			Amount
Hauling cost to Yreka Transfer 40 Miles	27.00 2.00	ton Loads	1.000 20 tons a load	27.00	\$595.00 \$400.00		\$16,065.00 \$800.00
						TOTAL SUBCONTRACTS	\$16,865.00

SUMMARY OF COSTS						
Labor Cost	\$128,764.35	Labor Burden @	0.0%	\$0.00		\$128,764.35
Material Cost	\$20,164.65	Material Tax @	7.75%	\$1,562.76		\$21,727.41
Equipment Cost	\$57,064.00	Equipment Tax @	7.75%	\$4,422.46		\$61,486.46
Subcontractors	\$16,865.00					\$16,865.00
DIRECT COST SUBTOTALS Additional Pay Item Notes :	\$222,858	•		\$5,985	DIRECT COST SUBTOTALS	\$228,843

This is to remove sections of 72" line in the diversion tunnel on the reservoir side. This operation has to occur before the draw down due to the existing openings of the diversion tunnel being to small to allow for the require flow rates during the drawdown period. Detail on crews and productions are listed on the next page.

2.019 Remove & Dispose of 3 sections of 23' of 72" Dia. steel lining (embedded) Details High Cost Factors Low Cost Factors Bad Weather Gas Price Increase Unforeseen Contaminated Mats/ Access Issues No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues

Production Per Hour Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
1550	8	70%	8680
1550	10	70%	10850

Pay Items Notes
Crew is expected to remove the steel lining just after demolishing the existing intake structure. The operation will have to be done underwater and due to the depth of the lining divers will only be able to spend 20 mins at the location of the lining. To account for the restricted working time, extra divers have been added to rotate during the demolision process. It is expected the equipment used will be the same as the demolition operation from pay item 2.012. There will be a barge for the crane and there will be a barge to place the demolished steel lining. The lining will be off loaded at shore with a 80 ton crane which is expected to be used only half of the duration. This operations is restricted by the in water work permits from California. This operation could be double shifted if necessary to work in the permit window. The estimate currently shows a single shift 5 days a week to 1 hours a day.

TOTAL SUBCONTRACTS

\$2,436.25

PAY ITEM COST DETAIL WORKSHEET

al Pay Item Notes :

PAY ITEM INFORMATION
PAY ITEM NUMBER Description Group : D03 Quantity
Daily Production 10 hour shift 10,850.00 LBS per Project # Work Days Unit Price 5.1 Days \$3.77 per LBS Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 11935 Total Cost \$186,540 Unit Price Per LBS \$3.39 Total Cost \$207,267 Probable High Cost Parameter 9222.5 \$238,357 \$4.33

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.1	10	51.00	L	\$58.87	incl. in rate	incl. in rate	\$3,002.47
Laborer	Active	3.00	5.1	10	153.00	L	\$51.07	incl. in rate	incl. in rate	\$7,814.17
Equipment Operator (crane)	Active	2.00	5.1	10	102.00	L	\$81.60	incl. in rate	incl. in rate	\$8,323.00
Diver, Wet	Active	8.00	5.1	10	408.00	L	\$142.66	incl. in rate	incl. in rate	\$58,204.87
Diver, Tender	Active	8.00	5.1	10	408.00	L	\$92.77	incl. in rate	incl. in rate	\$37,851.79
Barge Operator	Active	2.00	5.1	10	102.00	L	\$79.13	incl. in rate	incl. in rate	\$8,071.67
Barge, Deck Engineer, Winch Operator	Active	2.00	5.1	10	102.00	L	\$79.13	incl. in rate	incl. in rate	\$8,071.67
Barge, Sectional, 40'x10', includes ramp	Active	2.00	5.1	10	102.00	E	\$17.71	incl. in rate	incl. in rate	\$1,806.42
Crawler Crane (270tn)	Active	2.00	5.1	10	102.00	E	\$454.10	incl. in rate	incl. in rate	\$46,318.20
Hydraulic Crane (50tn)	Active	1.00	5.1	10	51.00	Е	\$136.20	incl. in rate	incl. in rate	\$6,946.20

 Labor Hours
 1326
 TOTAL LABOR
 \$131,339.64

 Equipment Hours
 255
 TOTAL EQUIPMENT
 \$55,070.82

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$13,133.96	\$13,133.96

TOTAL MATERIAL \$13,133.96

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
oulk material, maximum (10%)						
	2.75	ton	1.000	2.75	\$595.00	\$1,636.25
Hauling cost to Yreka Transfer 40 Miles	2.00	Loads	20 tons a load		\$400.00	\$800.00

 SUMMARY OF COSTS

 Labor Cost
 \$131,339.64
 Labor Burden ®
 0.0%
 \$0.00
 \$131,339.64

 Material Cost
 \$13,133.96
 Material Tax ®
 7.75%
 \$1,017.88
 \$14,151.85

 Equipment Cost
 \$55,070.82
 S55,070.82
 \$59,338.81
 \$59,338.81

 Subcontractors
 \$2,436.25
 \$2,436.25
 DIRECT COST SUBTOTALS
 \$207,267

This pay items accounts for removing the 72* valves that are shown to be in the existing diversion structure. These will be removed with the same crew that is removing the steel lining (pay item 2.019).

PAY ITEM INFORMATION							
PAY ITEM NUMBER		2.021	Project	: KRRP - Copco 1			
		Remove & Dispose of 3 - 72" flapper valves with remote mechanical					
Description	:		Group	: D03			
Quantity	:	78,000.00 LBS	_				
Daily Production	:	21,000.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	3.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.95 per LBS	Probable Low	Cost Parameter	23100	\$136,551	\$1.75
Total Cost	:	\$151,723	Probable High	Cost Parameter	17850	\$174,481	\$2.24

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.7	10	37.00	L	\$58.87	incl. in rate	incl. in rate	\$2,178.26
Laborer	Active	3.00	3.7	10	111.00	L	\$51.07	incl. in rate	incl. in rate	\$5,669.10
Equipment Operator (crane)	Active	2.00	3.7	10	74.00	L	\$81.60	incl. in rate	incl. in rate	\$6,038.25
Diver, Wet	Active	8.00	3.7	10	296.00	L	\$142.66	incl. in rate	incl. in rate	\$42,227.06
Diver, Tender	Active	8.00	3.7	10	296.00	L	\$92.77	incl. in rate	incl. in rate	\$27,461.10
Barge Operator	Active	2.00	3.7	10	74.00	L	\$79.13	incl. in rate	incl. in rate	\$5,855.92
Barge, Deck Engineer, Winch Operator	Active	2.00	3.7	10	74.00	L	\$79.13	incl. in rate	incl. in rate	\$5,855.92
Barge, Sectional, 40'x10', includes ramp	Active	2.00	3.7	10	74.00	E	\$17.71	incl. in rate	incl. in rate	\$1,310.54
Crawler Crane (270tn)	Active	2.00	3.7	10	74.00	E	\$454.10	incl. in rate	incl. in rate	\$33,603.40
Hydraulic Crane (50tn)	Active	1.00	3.7	10	37.00	E	\$136.20	incl. in rate	incl. in rate	\$5,039.40

Labor Hours	962	TOTAL LABOR	\$95,285.62
Equipment Hours	185	TOTAL EQUIPMENT	\$39,953.34

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$9,528.56	\$9,528.56

					TOTAL WATERIAL	\$9,526.56
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit	Co	ntract or Quote
			Company	Price		Amount

Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)

3.90 ton 1.000 3.90 \$595.00 \$2,320.50 Hauling cost to Yreka Transfer 40 Miles 2.00 Loads 20 tons a load \$400.00 \$800.00

 Labor Cost
 \$95,285.62
 Labor Burden ®
 0.0%
 \$0.00

 Material Cost
 \$9,528.56
 Material Tax ®
 7.75%
 \$738.46

 Equipment Cost
 \$39,953.34
 Equipment Tax ®
 7.75%
 \$3,096.38

 Subcontractors
 \$3,120.50
 \$3,120.50
 \$3,120.50

 DIRECT COST SUBTOTALS
 \$147,888
 \$3,835
 DIRECT COST SUBTOTALS
 \$151,723

 Additional Pay Item Notes :

This payitem is to remove the 72° flapper gates on the existing diversion structure. It is expected that the same crew demolishing the rest of the structure, lining, and valves will remove these gates. As for the other related pays to the existing diversion structure, this work item is also time restricted due to the depth of the structure and the working in the California in water work permit limitations. Removing the gates is expected to have a better production than the other related demolition items.

\$2,585.62

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.022	Project : KRRP - C	орсо 1		
Description	:	Remove & Dispose of Spillway gate motor & control panel	Group : D03			
Quantity	:	1.00 EA				
Daily Production	:	1.00 EA per 10 hour shift	Project # : 2			
Work Days	:	1.0 Days	Estimator : Mihaela 1	omulescu EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,354.22 per EA	Probable Low Cost Parameter	1.1	\$4,819	\$4,818.80
Total Cost		\$5,354	Probable High Cost Paramete	r 0.85	\$6 157	\$6 157 35

	4-7								, .	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.7
aborer	Active	2.00	1.0	10	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.4
Electrician	Active	1.00	1.0	10	10.00	L	\$55.80	incl. in rate	incl. in rate	\$558.0
						_			1 -	
				Labor Hours	40				TOTAL LABOR	\$2,168.
								_		
				Equipment Hours	0				OTAL EQUIPMENT	\$0.0
ATERIAL COSTS										
Description	ltem	Order		Conversion	Order		Order			Material

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 0.5% labor (Side Cutter, Sharp-Nose Pliers, Sharp Tip Tweezers	44.00		4.000	44.00	9949.00	00.505.0
PCB Clamp, etc)	11.93	LS	1.000	11.93	\$216.82	\$2,585.6

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	Allowance	\$400.00	\$400.00
				TOTAL SUBCONTRACT	\$400.00

SUMMARY OF COSTS						
Labor Cost	\$2,168.21	Labor Burden @	0.0%	\$0.00		\$2,168.21
Material Cost	\$2,585.62	Material Tax @	7.75%	\$200.39		\$2,786.01
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS Additional Pay Item Notes:	\$5,154			\$200	DIRECT COST SUBTOTALS	\$5,354

\$0.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.023	Project : KRRP - Copco 1			
Description	:	Remove & Dispose Distribution equipment, panelboards	Group : D05			
Quantity	:	1.00 EA				
Daily Production	:	0.63 EA per 10 hour shift	Project # : 2			
Work Days	:	1.6 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,839.35 per EA	Probable Low Cost Parameter	0.6875	\$5,255	\$5,255.42
Total Cost	:	\$5,839	Probable High Cost Parameter	0.5	\$7,007	\$7,007.22

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Equipment Operator (crane)	Active	1.00	1.6	10	16.00	L	\$81.60	incl. in rate	incl. in rate	\$1,305.57
Hydraulic Crane (50tn)	Active	1.00	1.6	10	16.00	E	\$136.20	incl. in rate	incl. in rate	\$2,179.20
				Labor Hours					TOTAL LABOR	\$3,091.26
				Equipment Hours	16			1	TOTAL EQUIPMENT	\$2,179.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 0.5% labor (Side Cutter, Sharp- Nose Pliers, Sharp Tip Tweezers PCB Clamp, etc)	0.00	LS	1.000	0.00	\$154.56	\$0.0

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	Allowance	\$400.00	\$400.00
				TOTAL SUI	SCONTRACTS \$400.00

SUMMARY OF COSTS						
Labor Cost	\$3,091.26 Labor E	Burden @	0.0%	\$0.00		\$3,091.26
Material Cost	\$0.00 Materia	l Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$2,179.20 Equipm	ent Tax @	7.75%	\$168.89		\$2,348.09
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$5,670			\$169	DIRECT COST SUBTOTALS	\$5,839
Additional Pay Item Notes :						
						1
-						

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	2.024			Project	: KRRP - Copco 1			
		Remove Powerhouse Concret	te down to to	p of rock under the					
Description	:	Powerhouse			Group	: D07			
Quantity	:	3,100.00 cy			_				
Daily Production	:	133.00 cy per	10	hour shift	Project #	: 2			
Work Days	:	23.3 Days			Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$170.25 per cy			Probable Low C	ost Parameter	146.3	\$475,003	\$153.23
Total Cost	:	\$527,781			Probable High (Cost Parameter	106.4	\$633,337	\$204.30

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	23.3	10	233.00	L	\$58.87	incl. in rate	incl. in rate	\$13,717.18
Laborer	Active	3.00	23.3	10	699.00	L	\$51.07	incl. in rate	incl. in rate	\$35,700.03
Equipment Operator (medium)	Active	2.00	23.3	10	466.00	L	\$72.34	incl. in rate	incl. in rate	\$33,708.58
Truck Driver (heavy)	Active	1.00	24.1	10	241.20	L	\$66.92	incl. in rate	incl. in rate	\$16,142.07
Air Compressor 900 cfm	Active	1.00	23.3	10	233.00	E	\$38.87	incl. in rate	incl. in rate	\$9,056.46
Air Tool, Chipping Hammer	Active	2.00	23.3	10	466.00	E	\$2.23	incl. in rate	incl. in rate	\$1,039.18
Generator, Small Generator, 10 - 15 kW	Active	1.00	23.3	10	233.00	E	\$7.04	incl. in rate	incl. in rate	\$1,640.32
Hydraulic Excavator (5.0cy)	Active	1.00	23.3	10	233.00	E	\$276.50	incl. in rate	incl. in rate	\$64,424.50
Hydraulic Excavator (2.5cy)	Active	1.00	23.3	10	233.00	E	\$205.40	incl. in rate	incl. in rate	\$47,858.20
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	23.3	10	233.00	E	\$63.28	incl. in rate	incl. in rate	\$14,744.24
Hydraulic Thumbs/Shear Attachment	Active	1.00	23.3	10	233.00	E	\$24.92	incl. in rate	incl. in rate	\$5,806.36
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	24.1	10	241.20	Е	\$57.41	incl. in rate	incl. in rate	\$13,847.29
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	23.3	10	233.00	Е	\$89.29	incl. in rate	incl. in rate	\$20,804.57
Drilling and Blasting Operator	Active	3.00	23.3	10	699.00	L	\$48.70	incl. in rate	incl. in rate	\$34,038.97
Air Track Drill 4"	Active	1.00	23.3	10	233.00	E	\$160.98	incl. in rate	incl. in rate	\$37,508.34
Hydraulic Crane (50tn)	Active	1.00	5.8	10	58.25	E	\$134.32	incl. in rate	incl. in rate	\$7,824.14
				Labor Hours	2,338				TOTAL LABOR	\$133,306.82
				Equipment Hours	2,629				TOTAL EQUIPMENT	\$224,553.60

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$6,665.34	\$6,665.34
Blasting Material	16,400.00	CY	1.050	17,220.00	\$5.56	\$95,777.64
Drill Bit Wear Allowance (20% of Drilling Eq)	1.00	LS	1.000	1.00	\$6,807.79	\$6,807.79

TOTAL MATERIAL \$109,250.77

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1	AL	Allowance	\$20,000.00		\$20,000.00
Hauling cost to Yreka Transfer 40 Miles	12.00	Loads	150lbs per CY	\$400.00		\$4,800.00
Selective demolition, torch cutting, steel, 1" thick plate	1.00	AL	Allowance	10,000.00		\$10,000.00
						\$0.00
					TOTAL SUBCONTRACTS	\$34,800.00

				,
SUMMARY OF COSTS				
Labor Cost	\$133,306.82 Labor Burden @	0.0% \$0.00 Included in hourly labor ra	te. \$130	3,306.8
Material Cost	\$109,250.77 Material Tax @	7.75% \$8,466.94	\$117	7,717.7
Equipment Cost	\$224,553.60 Equipment Tax @	7.75% \$17,402.90	\$24	1,956.5
Subcontractors	\$34,800.00		\$34	34,800.00
DIRECT COST SUBTOTALS	\$501,911	\$25,870	DIRECT COST SUBTOTALS \$	\$527,78
Additional Pay Item Notes :				
See detail sheet for crew and production note	es			

2.024 Remove Powerhouse Concrete down to top of rock under the Powerhouse Details High Cost Factors Low Cost Factors No Bad Weather Gas Price Decrease Gas Price Increase No Unforeseen Contan Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) 106.40 133.00 Excavator Loading Production per shift Haul Notes 3,100.00 CY per Hour 21 Swell Factor 60% CY Bucket Size 2.50 4960 Buckets Per Hour Bulk CY Haul Vehicle 60% Capacity (2 tons per CY) # of Haul Vehicles 1 CY per Hour (5 CY Bucket) 21 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Efficient Compared to Ideal Production Haul Speed (Loaded MPH) Inefficiencies Compared to Ideal Production 78% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Load Time (Load Time Minutes / 60mins) 0.08 Dump Time (Dump Time Minutes / 60 Mins) 13.3 0.05 # of Hammers 0.05 CY per Hour 0.26 CY per Hour Back Check 89% 32CY per HBr per filtr shift (Ideal prod) 0.35 Efficient Compared to Ideal Production 689 Inefficiencies Compared to Ideal Production 241.15 2.86 24 Return Time (Haul Distance / Return Speed) 13.3 Hours Per Cycle Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles (aux. cry (Hourt vehicle Cap x or Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Rumber of Cycles) Total Number of Haul Hours) Number of Haul Days 32 42% Drilling and Blasting Production per shift Drilling and Blasting CY per Hour s of Drills CY per Hour CY per Hour Back Check 38CY per HR per Bhr shift (ideal prod) Efficient Compared to Ideal Production Inefficiencies Compared to Ideal Production 13.3 1.00 13.3 13.3 38 35% 65%



Other Notes
This estimate presents that the power house concrete will be demolished by using a combination of blasting and concrete breakers/ Crushers. A CPM 100 crusher attachment with a magnet option will be used to help sort reinforcement for the demolished concrete. Smaller haul trucks will have to be used due to the small haul route to power house area. It is expected that the power house concrete will have dense reinforcement and other embedded items and the efficiency has been reduced to account for the time it will take for extra processing time. Steel cutting and a crane have been added for .25 of the time to account for removing the draft tube as the concrete demolition progresses.

\$3,028.91

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.025	Project : KRRP - Copco 1			
Description	:	Remove Powerhouse Structural Steel	Group : D10			
Quantity	:	110,000.00 LBS				
Daily Production	:	19,000.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	5.8 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.57 per LBS	Probable Low Cost Parameter	21850	\$52,853	\$0.48
Total Cost	:	\$62,180	Probable High Cost Parameter	15200	\$74,616	\$0.68

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.8	10	58.00	L	\$58.87	incl. in rate	incl. in rate	\$3,414.58
Laborer	Active	3.00	5.8	10	174.00	L	\$51.07	incl. in rate	incl. in rate	\$8,886.70
Steelworker	Active	2.00	5.8	10	116.00	L	\$78.10	incl. in rate	incl. in rate	\$9,059.60
Equipment Operator (crane)	Active	1.00	5.8	10	58.00	L	\$81.60	incl. in rate	incl. in rate	\$4,732.68
Equipment Operator (medium)	Active	1.00	5.8	10	58.00	L	\$72.34	incl. in rate	incl. in rate	\$4,195.49
Crawler Crane (130tn)	Active	1.00	5.8	10	58.00	E	\$262.91	incl. in rate	incl. in rate	\$15,248.78
Loader, FE Rubber Tire (5.25cy)	Active	1.00	5.8	10	58.00	E	\$76.00	incl. in rate	incl. in rate	\$4,408.00
				Labor Hours Equipment Hours	464			1	TOTAL LABOR	\$30,289.0 \$19,656.7

MATERIAL COSTS										
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost				
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$3,028.91	\$3,028.91				

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
bulk material, maximum (10%)	5.50	ton	1.000	5.50	\$595.00	\$3,272.50
Hauling cost to Yreka Transfer 40 Miles	3.00	Loads	20 tons a load		\$400.00	\$1,200.00
(assumption)	3,500.00	LF	1.000	3,500.00	\$0.85	\$2,975.00

SUMMARY OF COSTS						
Labor Cost	\$30,289.05	Labor Burden @	0.0%	\$0.00		\$30,289.05
Material Cost	\$3,028.91	Material Tax @	7.75%	\$234.74		\$3,263.65
Equipment Cost		Equipment Tax @	7.75%	\$1,523.40		\$21,180.18
Subcontractors	\$7,447.50					\$7,447.50
DIRECT COST SUBTOTALS	\$60,422	_		\$1,758	DIRECT COST SUBTOTALS	\$62,180
Additional Pay Item Notes :						

\$1,214.14

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION : KRRP - Copco 1 Description Group : D03 Quantity
Daily Production 38,000.00 LBS 18,000.00 LBS per hour shift Project # Work Days 2.1 Days \$0.99 per LBS Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 19800 Total Cost \$33,825 Unit Price Per LBS Unit Price \$0.89 **Total Cost** \$37,584 Probable High Cost Parameter 13500 \$46,980 \$1.24

CREW COSTS	Author	<i>u</i> ···	D	Harris	Total	1.75	Hamilia	Udana	D I	Labor / Employment
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.1	10	21.00	L	\$55.80	incl. in rate	incl. in rate	\$1,171.86
Electrician	Active	1.00	2.1	10	21.00	L	\$55.80	incl. in rate	incl. in rate	\$1,171.86
Ironworkers	Active	4.00	2.1	10	84.00	L	\$78.16	incl. in rate	incl. in rate	\$6,565.02
Hydraulic Excavator (5.0cy)	Active	1.00	2.1	10	21.00	E	\$276.50	incl. in rate	incl. in rate	\$5,806.50
Hydraulic Crane (80tn)	Active	1.00	2.1	10	21.00	E	\$197.66	incl. in rate	incl. in rate	\$4,150.86
Equipment Operator (medium)	Active	1.00	2.1	10	21.00	L	\$72.34	incl. in rate	incl. in rate	\$1,519.06
Equipment Operator (crane)	Active	1.00	2.1	10	21.00	L	\$81.60	incl. in rate	incl. in rate	\$1,713.56

Labor Hours	168	TOTAL LABOR	\$12,141.36
Equipment Hours	42	TOTAL EQUIPMENT	\$9,957.36

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,214.14	\$1,214.14

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit	Contract or Quote					
			Company	Price	Amount					
Hazardous waste cleanup/pickup/disposal, solid										
pickup, bulk material, maximum										

19.00 ton 1.00 Loads \$595.00 \$11,305.00 19.00 1.000 19.00 Hauling cost to Yreka Transfer 40 Miles \$400.00 \$400.00 20 tons a load assumption) 2,000.00 LF 1.000 2,000.00 \$0.85 \$1,700.00

DIRECT COST SUBTOTALS

Additional Pay Item Notes:

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.027	Project : KRRP - Copco 1			
Description	:	Remove & Dispose of Cooling water and bearing oil systems	Group : D03			
Quantity	:	11,000.00 LBS				
Daily Production	:	13,750.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.02 per LBS	Probable Low Cost Parameter	15125	\$10,070	\$0.92
Total Cost	:	\$11,189	Probable High Cost Parameter	11000	\$13,427	\$1.22

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.9
Laborer	Active	1.00	0.8	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.5
Steelworker	Active	1.00	0.8	10	8.00	L	\$78.10	incl. in rate	incl. in rate	\$624.8
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Truck Driver (light)	Active	1.00	0.8	10	8.00	L	\$65.82	incl. in rate	incl. in rate	\$526.59
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.8	10	8.00	E	\$117.28	incl. in rate	incl. in rate	\$938.24
Equipment Operator (light)	Active	1.00	0.8	10	8.00	L	\$69.19	incl. in rate	incl. in rate	\$553.52

Labor Hours	40	TOTAL LABOR	\$2,584.47
Equipment Hours	16	TOTAL EQUIPMENT	\$2,741.44

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$258.45	\$258.45

TOTAL MATERIAI	L \$258.45

SUBCONTRACT COSTS								
Description	Quantity	Units	Notes /	ι	Unit			Contract or Quote
			Company	P	Price			Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum								
	5.50	ton	1.000	5.50		\$595.00		\$3,272.50
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load	\$40	100.00			\$400.00
(assumption)	2,000.00	LF	1.000	2,000.00		\$0.85		\$1,700.00
								\$0.00
							TOTAL SUBCONTRACTS	\$5 372 50

SUMMARY OF COSTS						
Labor Cost	\$2,584.47	Labor Burden @	0.0%	\$0.00		\$2,584.
Material Cost	\$258.45	Material Tax @	7.75%	\$20.03		\$278.4
Equipment Cost	\$2,741.44	Equipment Tax @	7.75%	\$212.46		\$2,953.9
Subcontractors	\$5,372.50					\$5,372.5
DIRECT COST SUBTOTALS	\$10,957			\$232	DIRECT COST SUBTOTALS	\$11,18

Used RS Means: Pipe, metal pipe, to 1-1/2° diam., selective demolition, 4040 LF of 11/2° oil pipes at 2.72 Lbs. Used 1 Forman, 2 Steelworkers to cut the pipes and 3 Laborers to load the pipes in the truck. The cooling and lubrication systems for the Hydroelectric Barge turbine, speed increaser and generator will be a combination of water and oil. These systems will be isolated from the water passages so that no contamination of passing water will occur. The following is a list of hazardous materials, substances, chemicals, and wastes normally found at a hydropower facility that may require disposal actions if not recycled or reused for their intended purpose:

1. Polychlorinated Biphenyls (PCBs)

2. Asbestos

3. Paint/abrasive blast grit (red lead paint)

4. Oil

5. Mercury

6. Antifreeze

7. Halogenated and non-halogenated solvents

8. Greases

9. Pesticides (includes herbicides, insecticides, and wood preservatives)

10. Petroleum contaminated

11. Chlorinated fluorocarbons (CFCs) Freon/Halon

12. Gasoline/diesel (includes product and sludge in tanks)

13. Batteries (includes acid) (includes acid)

14. Water treatment sludge (septic tanks/wastewater treatment).

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$150,584.59

\$32,088.91

\$15,058.46

\$24,747.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMAT	ION					
PAY ITEM NUMBE	ER :	2.028	Project : KRRF	- Copco 1		
Description	:	Remove & Dispose of 4 - Horizontal Tandem Francis Turbines	Group : D03			
Quantity	:	452,000.00 LBS				
Daily Production	:	28,000.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	16.1 Days	Estimator : Mihae	la Tomulescu LBS pe	r Total Cost	Unit Price Per LBS
Unit Price	:	\$0.50 per LBS	Probable Low Cost Param	eter 30800	\$203,520	\$0.45
Total Cost	:	\$226,133	Probable High Cost Param	eter 22400	\$271,359	\$0.60

A -45			/day	Hours		Rate	Cost	Rate	Cost
Active	1.00	16.1	10	161.00	L	\$58.87	incl. in rate	incl. in rate	\$9,478.39
Active	3.00	16.1	10	483.00	L	\$51.07	incl. in rate	incl. in rate	\$24,668.26
Active	1.00	16.1	10	161.00	L	\$55.80	incl. in rate	incl. in rate	\$8,984.28
Active	2.00	16.1	10	322.00	L	\$55.80	incl. in rate	incl. in rate	\$17,968.57
Active	2.00	16.1	10	322.00	L	\$78.10	incl. in rate	incl. in rate	\$25,148.20
Active	2.00	16.1	10	322.00	L	\$82.04	incl. in rate	incl. in rate	\$26,416.24
Active	1.00	16.1	10	161.00	L	\$72.34	incl. in rate	incl. in rate	\$11,646.10
Active	2.00	16.1	10	322.00	L	\$81.60	incl. in rate	incl. in rate	\$26,274.56
Active	1.00	16.1	10	161.00	E	\$136.20	incl. in rate	incl. in rate	\$21,928.20
Active	1.00	16.1	10	161.00	E	\$63.11	incl. in rate	incl. in rate	\$10,160.71
	Active Active Active Active Active Active Active Active	Active 1.00 Active 2.00 Active 2.00 Active 2.00 Active 1.00 Active 2.00 Active 1.00 Active 1.00	Active 1.00 16.1 Active 2.00 16.1 Active 2.00 16.1 Active 2.00 16.1 Active 1.00 16.1 Active 1.00 16.1 Active 2.00 16.1 Active 1.00 16.1 Active 1.00 16.1	Active 1.00 16.1 10 Active 2.00 16.1 10 Active 2.00 16.1 10 Active 2.00 16.1 10 Active 1.00 16.1 10 Active 2.00 16.1 10 Active 1.00 16.1 10 Active 1.00 16.1 10	Active 1.00 16.1 10 161.00 Active 2.00 16.1 10 322.00 Active 2.00 16.1 10 322.00 Active 2.00 16.1 10 322.00 Active 1.00 16.1 10 161.00 Active 2.00 16.1 10 322.00 Active 1.00 16.1 10 161.00	Active 1.00 16.1 10 161.00 L Active 2.00 16.1 10 322.00 L Active 2.00 16.1 10 322.00 L Active 2.00 16.1 10 322.00 L Active 1.00 16.1 10 161.00 L Active 2.00 16.1 10 322.00 L Active 1.00 16.1 10 161.00 E	Active 1.00 16.1 10 161.00 L \$55.80 Active 2.00 16.1 10 322.00 L \$55.80 Active 2.00 16.1 10 322.00 L \$78.10 Active 2.00 16.1 10 322.00 L \$82.04 Active 1.00 16.1 10 161.00 L \$72.34 Active 2.00 16.1 10 322.00 L \$81.60 Active 1.00 16.1 10 161.00 E \$136.20	Active 1.00 16.1 10 161.00 L \$55.80 incl. in rate Active 2.00 16.1 10 322.00 L \$55.80 incl. in rate Active 2.00 16.1 10 322.00 L \$78.10 incl. in rate Active 2.00 16.1 10 322.00 L \$82.04 incl. in rate Active 1.00 16.1 10 161.00 L \$72.34 incl. in rate Active 2.00 16.1 10 322.00 L \$81.60 incl. in rate Active 1.00 16.1 10 161.00 E \$136.20 incl. in rate	Active 1.00 16.1 10 161.00 L \$55.80 incl. in rate incl. in rate Active 2.00 16.1 10 322.00 L \$55.80 incl. in rate incl. in rate Active 2.00 16.1 10 322.00 L \$78.10 incl. in rate incl. in rate Active 2.00 16.1 10 322.00 L \$82.04 incl. in rate incl. in rate Active 1.00 16.1 10 161.00 L \$72.34 incl. in rate incl. in rate Active 2.00 16.1 10 322.00 L \$81.60 incl. in rate incl. in rate Active 1.00 16.1 10 161.00 E \$136.20 incl. in rate incl. in rate

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$15,058.46	\$15,058.46

2,254

Labor Hours

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
bulk material, maximum						
	22.60	ton	1.000	22.60	\$595.00	\$13,447.00
Hauling cost to Yreka Transfer 40 Miles	12.00	Loads	20 tons a load	\$800.0	0	\$9,600.00
(assumption)	2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00
						\$0.00

SUMMARY OF COSTS					
Labor Cost	\$150,584.59 Labor Burden @	0.0%	\$0.00		\$150,584
Material Cost	\$15,058.46 Material Tax @	7.75%	\$1,167.03		\$16,225
Equipment Cost	\$32,088.91 Equipment Tax @	7.75%	\$2,486.89		\$34,575
Subcontractors	\$24,747.00	'			\$24,747
DIRECT COST SUBTOTALS	\$222,479		\$3,654	DIRECT COST SUBTOTALS	\$226,
Additional Pay Item Notes :					

Working crew will disconnect power and take care of the temporary electrical power they need at the site. Then the crew will open the engine side panels, and remove the nacelle access panels. Disconnect the engine thermocouple leads at the terminal board. Before disconnecting any lines all fuel, oil, and hydraulic fluid valves are closed. Plug all lines as they are disconnected to prevent entrance of foreign material. Remove the clamps securing the bleed-air ducts at the firewall. Then, disconnect the electrical connector plugs, engine breather and vent lines, and fuel, oil, and hydraulic lines. Disconnect the engine power lever and propeller control rods or cables. Remove the covers from the lift points, attach the sling, and remove slack from the cables using a suitable hoist. The sling must be adjusted to position. Remove the engine mount bolts. The engine is ready to be removed. Move, out of the nacelles structure, until it clears the and then lower into position on the stand, and secure it prior to removing the engine sling. The crew will then cut it into pieces the big parts for disposal. Per load price is more expensive due to potential permits or more smaller loads due to haul route restrictions.

\$1,411.15

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.029	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 2 - 40 Ton indoor cranes	Group	: D10			
Quantity	:	140,000.00 LBS					
Daily Production	:	30,000.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	4.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.43 per LBS	Probable Low	Cost Parameter	34500	\$51,376	\$0.37
Total Cost	:	\$60,442	Probable High	Cost Parameter	24000	\$72,531	\$0.52

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.7	10	47.00	L	\$58.87	incl. in rate	incl. in rate	\$2,766.98
Laborer	Active	3.00	4.7	10	141.00	L	\$51.07	incl. in rate	incl. in rate	\$7,201.29
Ironworkers	Active	3.00	4.7	10	141.00	L	\$78.16	incl. in rate	incl. in rate	\$11,019.86
Equipment Operator (medium)	Active	1.00	4.7	10	47.00	L	\$72.34	incl. in rate	incl. in rate	\$3,399.79
Equipment Operator (crane)	Active	1.00	4.7	10	47.00	L	\$81.60	incl. in rate	incl. in rate	\$3,835.11
Crawler Crane (130tn)	Active	1.00	4.7	10	47.00	E	\$262.91	incl. in rate	incl. in rate	\$12,356.77
Hydraulic Excavator (2.5cy)	Active	1.00	4.7	10	47.00	Е	\$205.40	incl. in rate	incl. in rate	\$9,653.80
				Labor Hours Equipment Hours		3 4		1	TOTAL LABOR	\$28,223.03 \$22,010.57

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,411.15	\$1,411.15

					Contract or Quote
		Company	Price		Amount
3.50	ton	1.000	3.50	\$595.00	\$2,082.50
4.00	Loads	20 tons a load		\$800.00	\$3,200.00
2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00
	4.00	4.00 Loads	4.00 Loads 20 tons a load	4.00 Loads 20 tons a load	4.00 Loads 20 tons a load \$800.00

SUMMARY OF COSTS						
Labor Cost	\$28,223.03	Labor Burden @	0.0%	\$0.00		\$28,223.03
Material Cost		Material Tax @	7.75%	\$109.36		\$1,520.52
Equipment Cost	\$22,010.57	Equipment Tax @	7.75%	\$1,705.82		\$23,716.39
Subcontractors	\$6,982.50					\$6,982.50
DIRECT COST SUBTOTALS	\$58,627			\$1,815	DIRECT COST SUBTOTALS	\$60,442
Additional Pay Item Notes :						

PAY ITEM INFOR	MATION						
PAY ITEM N	JMBER :	2.030	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Compressed Air System	Group	: D04			
Quantity	:	1,000.00 LBS	 '				
Daily Produc	tion :	7,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.37 per LBS	Probable Low C	ost Parameter	8250	\$1,234	\$1.23
Total Cost	:	\$1,371	Probable High (Cost Parameter	6375	\$1,577	\$1.58

Unit Price : Total Cost :	\$1.37 p \$1,371	er LBS			Probable Low Probable High			8250 6375	\$1,234 \$1,577	\$1.23 \$1.58	
					,					•	
CREW COSTS											
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipn Cost	nent
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate		\$58.87
Laborer	Active	3.00	0.1	10	3.00	L	\$51.07	incl. in rate	incl. in rate		\$153.22
Steelworker	Active	2.00	0.1	10	2.00	L	\$78.10	incl. in rate	incl. in rate		\$156.20
Equipment Operator (medium)	Active	1.00	0.1	10	1.00	L	\$72.34	incl. in rate	incl. in rate		\$72.34
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.1	10	1.00	Е	\$76.00	incl. in rate	incl. in rate		\$76.00
				Labor Hours		7			TOTAL LABOR		\$440.63
				Equipment Hours		1			TOTAL EQUIPMENT		\$76.00
				.,							
MATERIAL COSTS											
Description	Item Quantity	Order Unit		Conversion Factor / Waste	Order Quantity		Order Price			Material Cost	
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS		1.000	1.0	0	\$	\$22.03			\$22.03
									TOTAL MATERIAL		\$22.03

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hauling cost to Yreka Transfer 40 Miles Selective demolition, torch cutting, steel, 1" thick	1.00	Loads	20 tons a load	\$400.00			\$400.00
plate (assumption)	500.00	LF	1.000	500.00	\$0.85		\$425.00
						TOTAL SUBCONTRACTS	\$825.00

\$440.63	Labor Burden @	0.0%	\$0.00		\$440.63
\$22.03	Material Tax @	7.75%	\$1.71		\$23.74
\$76.00	Equipment Tax @	7.75%	\$5.89		\$81.89
\$825.00					\$825.00
\$1,364			\$8	DIRECT COST SUBTOTALS	\$1,371
	\$22.03 \$76.00 \$825.00	\$440.63 Labor Burden @ \$22.03 Material Tax @ \$76.00 Equipment Tax @ \$825.00	\$22.03 Material Tax @ 7.75% \$76.00 Equipment Tax @ 7.75% \$825.00	\$22.03 Material Tax @ 7.75% \$1.71 \$76.00 Equipment Tax @ 7.75% \$5.89 \$825.00	\$22.03 Material Tax @ 7.75% \$1.71 \$76.00 Equipment Tax @ 7.75% \$5.89 \$825.00

\$77.91

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.031	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 2 - CO2 Systems	Group	: D03			
Quantity	:	3,100.00 LBS					
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.90 per LBS	Probable Low 0	Cost Parameter	8250	\$2,515	\$0.81
Total Cost	:	\$2,795	Probable High	Cost Parameter	6375	\$3,214	\$1.04

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Steelworker	Active	2.00	0.4	10	8.00	L	\$78.10	incl. in rate	incl. in rate	\$624.80
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.34	incl. in rate	incl. in rate	\$289.34
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.4	10	4.00	E	\$76.00	incl. in rate	incl. in rate	\$304.00
						1				
				Labor Hours	2	4			TOTAL LABOR	\$1,558.22
				Equipment Hours		4		-	OTAL EQUIPMENT	\$304.00

MATERIAL COSTS Description	Item	Order	Conversion	Order	Order	Material
Description	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$77.91	\$77.91

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load	\$400.00			\$400.00
Selective demolition, torch cutting, steel, 1" thick plate (assumption)	500.00	LF	1.000	500.00	\$0.85		\$425.00
						TOTAL SUBCONTRACTS	\$825.00

SUMMARY OF COSTS						
Labor Cost	\$1,558.22	Labor Burden @	0.0%	\$0.00		\$1,558.22
Material Cost	\$77.91	Material Tax @	7.75%	\$6.04		\$83.95
Equipment Cost	\$304.00	Equipment Tax @	7.75%	\$23.56		\$327.56
Subcontractors	\$825.00	1				\$825.00
DIRECT COST SUBTOTALS	\$2,765	_		\$30	DIRECT COST SUBTOTALS	\$2,795
Additional Pay Item Notes :						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.032	Project : KRRP - Copco 1			
Description	:	Remove & Dispose of Plant Water and Fire Protection	Group : D05			
Quantity	:	2,600.00 LBS				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	0.3 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.89 per LBS	Probable Low Cost Parameter	8250	\$2,072	\$0.80
Total Cost		\$2.302	Probable High Cost Parameter	6000	\$2.763	\$1.06

Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.62
Active	2.00	0.3	10	6.00	L	\$51.07	incl. in rate	incl. in rate	\$306.44
Active	2.00	0.3	10	6.00	L	\$78.10	incl. in rate	incl. in rate	\$468.60
Active	1.00	0.3	10	3.00	L	\$72.34	incl. in rate	incl. in rate	\$217.01
Active	1.00	0.3	10	3.00	E	\$76.00	incl. in rate	incl. in rate	\$228.00
	Active Active Active Active Active	Idle crew Active 1.00 Active 2.00 Active 2.00 Active 1.00	Idle crew Worked Active 1.00 0.3 Active 2.00 0.3 Active 2.00 0.3 Active 1.00 0.3	Idle crew Worked /day Active 1.00 0.3 10 Active 2.00 0.3 10 Active 2.00 0.3 10 Active 1.00 0.3 10	Idle crew Worked /day Hours Active 1.00 0.3 10 3.00 Active 2.00 0.3 10 6.00 Active 2.00 0.3 10 6.00 Active 1.00 0.3 10 3.00	Idle crew Worked /day Hours Active 1.00 0.3 10 3.00 L Active 2.00 0.3 10 6.00 L Active 2.00 0.3 10 6.00 L Active 1.00 0.3 10 3.00 L	Idle crew Worked /day Hours Rate Active 1.00 0.3 10 3.00 L \$58.87 Active 2.00 0.3 10 6.00 L \$51.07 Active 2.00 0.3 10 6.00 L \$78.10 Active 1.00 0.3 10 3.00 L \$72.34	Idle crew Worked /day Hours Rate Cost Active 1.00 0.3 10 3.00 L \$58.87 incl. in rate Active 2.00 0.3 10 6.00 L \$51.07 incl. in rate Active 2.00 0.3 10 6.00 L \$78.10 incl. in rate Active 1.00 0.3 10 3.00 L \$72.34 incl. in rate	Idle crew Worked /day Hours Rate Cost Rate Active 1.00 0.3 10 3.00 L \$58.87 incl. in rate incl. in rate Active 2.00 0.3 10 6.00 L \$51.07 incl. in rate incl. in rate Active 2.00 0.3 10 6.00 L \$78.10 incl. in rate incl. in rate Active 1.00 0.3 10 3.00 L \$72.34 incl. in rate

ı				
	Labor Hours	18	TOTAL LABOR	\$1,168.66
	Equipment Hours	3	TOTAL EQUIPMENT	\$228.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$58.43	\$58.43

TOTAL MATERIAL \$58.43

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price	1	Contract or Quote Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load		\$400.00	\$400.00
Selective demolition, torch cutting, steel, 1" thick plate (assumption)	500.00	LF	1.000	500.00	\$0.85	\$425.00
					то	TAL SUBCONTRACTS \$825.00

SUMMARY OF COSTS						
Labor Cost	\$1,168.66	Labor Burden @	0.0%	\$0.00		\$1,168.66
Material Cost	\$58.43	Material Tax @	7.75%	\$4.53		\$62.96
Equipment Cost	\$228.00	Equipment Tax @	7.75%	\$17.67		\$245.67
Subcontractors	\$825.00					\$825.00
DIRECT COST SUBTOTALS	\$2,280			\$22	DIRECT COST SUBTOTALS	\$2,302
Additional Pay Item Notes :						
-						

TOTAL SUBCONTRACTS

\$136.34

\$2,431.50

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.033	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Transformer Oil Fire Protection	Group	: D05			
Quantity	:	5,400.00 LBS					
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.09 per LBS	Probable Low	Cost Parameter	8250	\$5,291	\$0.98
Total Cost	:	\$5.879	Probable High	Cost Parameter	6000	\$7.054	\$1.31

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.7	10	7.00	L	\$58.87	incl. in rate	incl. in rate	\$412.10
Laborer	Active	2.00	0.7	10	14.00	L	\$51.07	incl. in rate	incl. in rate	\$715.02
Steelworker	Active	2.00	0.7	10	14.00	L	\$78.10	incl. in rate	incl. in rate	\$1,093.40
Equipment Operator (medium)	Active	1.00	0.7	10	7.00	L	\$72.34	incl. in rate	incl. in rate	\$506.35
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.7	10	7.00	Е	\$76.00	incl. in rate	incl. in rate	\$532.00
				Labor Hours	4	2			TOTAL LABOR	\$2,726.88
				Equipment Hours		7		1	OTAL EQUIPMENT	\$532.0

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$136.34	\$136.34

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid						
pickup, bulk material, maximum						
	2.70	ton	1.000	2.70	\$595.00	\$1,606.5
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load		\$400.00	\$400.0
plate (assumption)	500.00	LF	1.000	500.00	\$0.85	\$425.0

SUMMARY OF COSTS						
Labor Cost	\$2,726.88	Labor Burden @	0.0%	\$0.00		\$2,726.88
Material Cost	\$136.34	Material Tax @	7.75%	\$10.57		\$146.91
Equipment Cost	\$532.00	Equipment Tax @	7.75%	\$41.23		\$573.23
Subcontractors	\$2,431.50					\$2,431.50
DIRECT COST SUBTOTALS	\$5,827	_		\$52	DIRECT COST SUBTOTALS	\$5,879
Additional Pay Item Notes :					·	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.034	Project : KRF	RP - Copco 1		
Description	:	Remove & Dispose of Unwatering Piping	Group : D05			
Quantity	:	27,000.00 LBS				
Daily Production	:	22,500.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	1.2 Days	Estimator : Mih	aela Tomulescu LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.33 per LBS	Probable Low Cost Para	neter 25875	\$7,645	\$0.28
Total Cost	:	\$8,994	Probable High Cost Para	meter 16875	\$11,243	\$0.42

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
=										
Labor Foreman	Active	1.00	1.2	10	12.00	L	\$58.87	incl. in rate	incl. in rate	\$706.46
Laborer	Active	2.00	1.2	10	24.00	L	\$51.07	incl. in rate	incl. in rate	\$1,225.75
Steelworker	Active	2.00	1.2	10	24.00	L	\$78.10	incl. in rate	incl. in rate	\$1,874.40
Equipment Operator (medium)	Active	1.00	1.2	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.03
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.2	10	12.00	E	\$76.00	incl. in rate	incl. in rate	\$912.00
				Labor Hours	7	2			TOTAL LABOR	\$4,674.65
				Equipment Hours	1	2		Т	OTAL EQUIPMENT	\$912.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$467.46	\$467.46

TOTAL MATERIAL \$467.46

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% from total weight)							
	3.38	ton	1.000	3.38	\$595.00		\$2,008.13
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load		\$400.00		\$400.00
(assumption)	500.00	LF	1.000	500.00	\$0.85		\$425.00
						TOTAL SUBCONTRACTS	\$2.833.13

SUMMARY OF COSTS					
Labor Cost	\$4,674.65 Labor Burden	@ 0.0%	\$0.00		\$4,674.65
Material Cost	\$467.46 Material Tax @	2 7.75%	\$36.23		\$503.69
Equipment Cost	\$912.00 Equipment Ta	x @ 7.75%	\$70.68		\$982.68
Subcontractors	\$2,833.13	·			\$2,833.13
DIRECT COST SUBTOTALS	\$8,887		\$107	DIRECT COST SUBTOTALS	\$8,994
Additional Pay Item Notes :					

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.035	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Drainage Piping	Group	: D05			
Quantity	:	5,000.00 LBS					
Daily Production	:	22,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.36 per LBS	Probable Low	Cost Parameter	25875	\$1,538	\$0.31
Total Cost	:	\$1,810	Probable High	Cost Parameter	16875	\$2,262	\$0.45

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$58.87	incl. in rate	incl. in rate	\$117.7
Laborer	Active	2.00	0.2	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.2
Steelworker	Active	2.00	0.2	10	4.00	L	\$78.10	incl. in rate	incl. in rate	\$312.4
Equipment Operator (medium)	Active	1.00	0.2	10	2.00	L	\$72.34	incl. in rate	incl. in rate	\$144.67
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.2	10	2.00	Е	\$76.00	incl. in rate	incl. in rate	\$152.00
				Labor Hours	1	2			TOTAL LABOR	\$779.1
				Equipment Hours		2		1	TOTAL EQUIPMENT	\$152.00

Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
1.00	LS	1.000	1.00	\$38.96	\$38.96
	Quantity	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price	•		Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	20 tons a load		\$400.00		\$400.00
plate (assumption)	500.00	LF	1.000	500.00	\$0.85		\$425.00
						TOTAL SUBCONTRACTS	\$825.00

SUMMARY OF COSTS						
Labor Cost	\$779.11	Labor Burden @	0.0%	\$0.00		\$779.11
Material Cost	\$38.96	Material Tax @	7.75%	\$3.02		\$41.97
Equipment Cost	\$152.00	Equipment Tax @	7.75%	\$11.78		\$163.78
Subcontractors	\$825.00					\$825.00
DIRECT COST SUBTOTALS	\$1,795			\$15	DIRECT COST SUBTOTALS	\$1,810
Additional Pay Item Notes :					-	
1370 LF of 1 " drainage pipes at 3.66 Lbs.	Used 1 Loader an	d 1 Forman, 1 Steelworkers to	cut the pipes and 1 Laborers	to load the pipes	in the truck.	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.035a	Project	: KRRP - Copco 1			
Description	:	Remove petroleum products from mechanical equipment	Group	: D09			
Quantity	:	1,250.00 GAL					
Daily Production	:	5,000.00 GAL per 10 hour shift	Project #	: 2			
Work Days	:	0.3 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$2.65 per GAL	Probable Low 0	Cost Parameter	5500	\$2,981	\$2.39
Total Cost	:	\$3,313	Probable High	Cost Parameter	4250	\$3,810	\$3.05

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.62
Carpenters, Journeyman	Active	2.00	0.3	10	6.00	L	\$77.54	incl. in rate	incl. in rate	\$465.23
Laborer	Active	2.00	0.3	10	6.00	L	\$51.07	incl. in rate	incl. in rate	\$306.44
									<u>-</u>	
				Labor Hours	15				TOTAL LABOR	\$948.29
				Equipment Hours	0			1	OTAL EQUIPMENT	\$0.00

Description	Item	Order	onversion	Order	Order	Material
	Quantity	Unit	ctor / Waste	Quantity	Price	Cost
onsumables 20% labor (absorbent materials, rums, etc)	1.00	LS	1.000	1.00	\$189.66	\$189.6

					TOTAL MATERIAL	\$189.66
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount

aste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2

hour RSM Means 028120101260 \$270.00

> TOTAL SUBCONTRACTS \$2,160,00

\$2,160.00

SUMMARY OF COSTS						
Labor Cost	\$948.29	Labor Burden @	0.0%	\$0.00		\$948.29
Material Cost	\$189.66	Material Tax @	7.75%	\$14.70		\$204.36
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$2,160.00					\$2,160.00
DIRECT COST SUBTOTALS	\$3,298	-		\$15	DIRECT COST SUBTOTALS	\$3,313
Additional Pay Item Notes :						

Petroleum-based products, ranging from fuel oil and hydraulic fluid to lubricating greases and oils, are found throughout every type of power generating plant or system. Lubrication supports bearings and moving parts in all sorts of equipment: pumps, conveyors, feeders, scrubbers, cranes, turbines, and more. A good oil/water separation system will result in a flow of concentrated waste oil to a collection area and a flow of oil-free water ready for secondary processing or discharge. Once an oil layer has been separated from free water, it must be removed for recycling or disposal. Many plants use one or more of these oil removal methods, but each has costly limitations:

1. Absorbent materials. Absorbent mats or materials are frequently used to dam up and absorb excess oils and greases resulting from accidents or the routine operation of machinery. These materials are very effective for preventing the spread of a source

ak and very efficient in terms of oil pickup. Yet, their use on large volumes of waste oil results in multiple, recurring costs that can make them impractical as an everyday solution:

the costs of the materials themselves the labor costs for ordering, stocking, application, and removal

• the costs of used-media collection, disposal, or re-processing/recoesing/r ceptacle, this service can be used very efficiently. However, vacuum disposal units are often used to pump oil layers directly off of water. This results in the intake of a significant amount free water along with the waste oil – and a significantly higher cost

DIRECT COST SUBTOTALS

\$134,538

PAY ITEM COST DETAIL WORKSHEET

DIRECT COST SUBTOTALS

PAY ITEM INFORMATION PAY ITEM NUMBER : KRRP - Copco 1 Description Quantity
Daily Production Project # : 2
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter Work Days Unit Price 5.0 Days EA per 0.46 Total Cost Unit Price Per EA \$57,178.67 \$114,357 \$161,446 \$67,269.02 per EA Total Cost Probable High Cost Parameter 0.32 \$80,722.82

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Crawler Crane (270tn)	Active	1.00	5.0	10	50.00	E	\$454.10	incl. in rate	incl. in rate	\$22,705.00
Electrician	Active	4.00	5.0	10	200.00	L	\$55.80	incl. in rate	incl. in rate	\$11,160.60
Equipment Operator (oiler)	Active	1.00	5.0	10	50.00	L	\$73.43	incl. in rate	incl. in rate	\$3,671.25
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Steelworker	Active	5.00	5.0	10	250.00	L	\$78.10	incl. in rate	incl. in rate	\$19,525.00
Loader, FE Rubber Tire (8.6cy)	Active	2.00	5.0	10	100.00	E	\$225.40	incl. in rate	incl. in rate	\$22,540.00
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Welder	Active	3.00	5.0	10	150.00	E	\$7.84	incl. in rate	incl. in rate	\$1,176.00
Gas Welding Machine	Active	3.00	5.0	10	150.00	E	\$2.88	incl. in rate	incl. in rate	\$431.55
Truck Driver (heavy)	Active	4.00	5.0	10	200.00	L	\$75.72	incl. in rate	incl. in rate	\$15,144.80
Truck, Flatbed (4x4, 10,000 gvw)	Active	4.00	5.0	10	200.00	E	\$27.09	incl. in rate	incl. in rate	\$5,418.00
Electrician Foreman	Active	1.00	5.0	10	50.00	L	\$55.80	incl. in rate	incl. in rate	\$2,790.15
Electrician Foreman	Active	1.00	5.0	10	50.00	L	\$55.80	inci. in rate	inci. in rate	\$2,79

Labor Hours	850	TOTAL LABOR	\$59,315.30
Equipment Hours	650	TOTAL EQUIPMENT	\$52,270.55

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$5,931.53	\$5,931.53

							TOTAL MATERIAL	\$5,931.53
							101/12 11/11 12/11/12	40,001.00
SUBCONTRACT COSTS								
Description	Quantity	Units	Notes /		Unit		·	Contract or Quote
/			Company		Price			Amount
Disposal fee (for 115 tons)	115	tons	1.000	115.00		\$74.00		\$8,510.00
Hauling cost to Yreka Transfer 40 Miles	10.00	Loads	20 tons a load		\$400.00			\$4,000.00
							TOTAL SUBCONTRACTS	\$12,510.00
SUMMARY OF COSTS								
Labor Cost	\$59,315.30	Labor Burden @		0.0% \$0.00				\$59,315.30
Material Cost	\$5,931.53	Material Tax @		7.75% \$459.69				\$6,391.22
Equipment Cost	\$52,270.55	Equipment Tax @		7.75% \$4,050.97				\$56,321.52
Subcontractors	\$12,510.00	1	· -					\$12,510.00

\$4,511

Additional Pay Item Notes :

\$130,027

\$2,272.07

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.037	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Excitation equipment for 12.5 MVA Generat	or Group	: D04			
Quantity	:	1.50 EA					
Daily Production	:	1.88 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$7,271.14 per EA	Probable Low	Cost Parameter	2.15625	\$9,271	\$6,180.47
Total Cost	:	\$10,907	Probable High	Cost Parameter	1.40625	\$13,633	\$9,088.92

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Hydraulic Crane (120tn)	Active	1.00	0.8	10	8.00	E	\$242.08	incl. in rate	incl. in rate	\$1,936.64
Welder	Active	1.00	0.8	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.72
Gas Welding Machine	Active	1.00	0.8	10	8.00	E	\$2.88	incl. in rate	incl. in rate	\$23.02
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$81.60	incl. in rate	incl. in rate	\$652.78

Labor Hours	48	TOTAL LABOR	\$2,941.49
Equipment Hours	32	TOTAL EQUIPMENT	\$3,825.58

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$147.07	\$147.07
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	2,500.00	LF	1.000	2,500.00	\$0.85	\$2,125.00

SUBCONTRACT COSTS											
Description	Quantity	Units	Notes /	Unit		Contract or Quote					
			Company	Price		Amount					
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum											
	1.00	ton	1.000	1.00	\$595.00	\$595.00					
Hauling cost to Yreka Transfer 40 Miles	2.00	Loads		\$400.00		\$800.00					

\$4.20E.00	TOTAL SUBCONTRACTS	

SUMMARY OF COSTS					
Labor Cost	\$2,941.49 Labor Burden @	0.0%	\$0.00		\$2,941.49
Material Cost	\$2,272.07 Material Tax @	7.75%	\$176.09		\$2,448.16
Equipment Cost	\$3,825.58 Equipment Tax @	7.75%	\$296.48		\$4,122.06
Subcontractors	\$1,395.00				\$1,395.00
DIRECT COST SUBTOTALS	\$10,434		\$473	DIRECT COST SUBTOTALS	\$10,907
Additional Pay Item Notes :					

Production based on 1 Forman, 1 Electrician, 1 Welder to cut to remove the electrical equipment and 1 laborer to haul. Equipment used 1 Loader and 1 Crane for disposal. Assumed 2 sections, weight 1000LBS.

TOTAL SUBCONTRACTS

\$148.02

\$1,395.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.038	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Surge protection equip. for 12.5 MVA Generator	Group	: D04			
Quantity	:	2.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,257.50 per EA	Probable Low	Cost Parameter	2.875	\$3,838	\$1,918.87
Total Cost	:	\$4,515	Probable High	Cost Parameter	1.75	\$5.869	\$2.934.75

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician	Active	2.00	0.8	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Ironworkers	Active	2.00	0.8	10	16.00	L	\$78.16	incl. in rate	incl. in rate	\$1,250.48
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
						-				
				Labor Hours	48				TOTAL LABOR	\$2,960.50
				Equipment Hours	0			1	OTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$148.02	\$148.02
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	0.00	LF	1.000	0.00	\$0.85	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Hauling cost to Yreka Transfer 40 Miles	1.00 2.00	ton Loads	1.000	1.00 \$400.00	\$595.00	\$595.00 \$800.00

SUMMARY OF COSTS						
Labor Cost	\$2,960.50	Labor Burden @	0.0%	\$0.00		\$2,960.5
Material Cost	\$148.02	Material Tax @	7.75%	\$11.47		\$159.8
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.0
Subcontractors	\$1,395.00					\$1,395.0
DIRECT COST SUBTOTALS	\$4,504			\$11	DIRECT COST SUBTOTALS	\$4,5
Additional Pay Item Notes :					_	

Assumption for Crew R3: 1 Forman, 1 Electrician, 1 Ironworker and 1 welder to cut rods, to remove the electrical equipment and 1 laborer to haul in the truck.

PAY ITEM INFORMATION
PAY ITEM NUMBER Project Group KRRP - Copco 1 Description Quantity Daily Production : D04 2.50 EA per 0.8 \$1,936.75 per EA 10 hour shift Project # : 2
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter EA per 2.75 Total Cost \$3,486 Unit Price Per EA \$1,743.08 Work Days Days Unit Price Total Cost \$3,874 Probable High Cost Parameter 2.125 \$4,455 \$2,227.26

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.
oader, FE Rubber Tire (3.5cy)	Active	2.00	0.8	10	16.00	E	\$63.11	incl. in rate	incl. in rate	\$1,009.
Equipment Operator (light)	Active	1.00	0.8	10	8.00	L	\$69.19	incl. in rate	incl. in rate	\$553.
				Labor Hours	40				TOTAL LABOR	\$2,263.
				Equipment Hours	16			-	TOTAL EQUIPMENT	\$1,009

MATERIAL COSTS												
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost						
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$113.18	\$113.18						

 SUBCONTRACT COSTS

 Description
 Quantity
 Units
 Notes / Notes / Price
 Contract or Quote

 Loads
 Price
 Amount

 Hauling cost to Yreka Transfer 40 Miles
 1.00
 Loads
 \$400.00
 \$400.00

TOTAL SUBCONTRACTS \$400.00

\$113.18

TOTAL MATERIAL

\$2,263.54 Labor Bu	Burden @	0.0%	\$0.00		\$2,263.5			
\$113.18 Material	al Tax @	7.75%	\$8.77		\$121.9			
\$1,009.76 Equipme	nent Tax @	7.75%	\$78.26		\$1,088.02			
\$400.00	<u>-</u>				\$400.00			
\$3,786			\$87	DIRECT COST SUBTOTALS	\$3,874			
Assumption for Crew R3: 1 Forman, 1 Electrician, 1 Ironworker and 1 welder to cut rods, to remove the electrical equipment and 1 laborer to haul in the truck.								
	\$113.18 Materia \$1,009.76 Equipr \$400.00	\$3,786	\$113.18 Material Tax @ 7.75% \$1,009.76 Equipment Tax @ 7.75% \$400.00 \$3,786	\$113.18 Material Tax @ 7.75% \$8.77 \$1,009.76 Equipment Tax @ 7.75% \$78.26 \$400.00 \$3,786 \$87	\$113.18 Material Tax @ 7.75% \$8.77 \$1,009.76 Equipment Tax @ 7.75% \$78.26 \$400.00 \$3,786 \$87 DIRECT COST SUBTOTALS			

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL SUBCONTRACTS

\$10,379.34

\$3,825.58

\$995.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.040	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Generator Switchgear, 5kV-includes unit breakers	Group	: D04			
Quantity	:	1.00 EA	_				
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$16,055.58 per EA	Probable Low Co	ost Parameter	1.375	\$14,450	\$14,450.02
Total Cost	:	\$16,056	Probable High C	ost Parameter	1.0625	\$18,464	\$18,463.92

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	3.00	0.8	10	24.00	L	\$55.80	incl. in rate	incl. in rate	\$1,339.27
Electrician	Active	12.00	0.8	10	96.00	L	\$55.80	incl. in rate	incl. in rate	\$5,357.09
Laborer	Active	6.00	0.8	10	48.00	L	\$51.07	incl. in rate	incl. in rate	\$2,451.50
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Hydraulic Crane (120tn)	Active	1.00	0.8	10	8.00	E	\$242.08	incl. in rate	incl. in rate	\$1,936.64
Welder	Active	1.00	0.8	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.72
Gas Welding Machine	Active	1.00	0.8	10	8.00	E	\$2.88	incl. in rate	incl. in rate	\$23.02
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$81.60	incl. in rate	incl. in rate	\$652.78

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$518.97	\$518.97
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	0.00	LF	1.000	0.00	\$0.85	\$0.00

184

Labor Hours

Equipment Hour

					TOTAL MATERIAL	\$518.97
					•	
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Hauling cost to Yreka Transfer 40 Miles	1.00 1.00	ton Loads	1.000	1.00 \$400.00	\$595.00	\$595.00 \$400.00

SUMMARY OF COSTS						
Labor Cost	\$10,379.34	Labor Burden @	0.0%	\$0.00		\$10,379.34
Material Cost	\$518.97	Material Tax @	7.75%	\$40.22		\$559.19
Equipment Cost	\$3,825.58	Equipment Tax @	7.75%	\$296.48		\$4,122.06
Subcontractors	\$995.00					\$995.00
DIRECT COST SUBTOTALS	\$15,719	-		\$337	DIRECT COST SUBTOTALS	\$16,056
Additional Pay Item Notes :					·	

Used 3 Crews (2 sections each weight around 800 LBS per crew) formed of 1 Forman, 3 Electrician, 2 laborer to haul with the crane in the truck. Assumed containing hazardous waste that will be disposed at 34 miles away from the construction site to Yreka Transfer Recycling. In normal circumstances, decontaminated residual components could be accepted at landfill sites but Polychlorinated biphenyl, otherwise known as PCB, is a synthetic chemical that is widely used for industrial and commercial use as dielectric fluid in transformers and capacitors because of its high resistance to decomposition, low electrical conductivity, low flammability and high heat capacity. Transformer repair, reconditioning and retro-filling facilities are the major industry sectors that contributes to the spread of PCB contamination. Types of PCB Wastes.
PCB wastes are discarded materials that contain PCB or have been contaminated with PCBs and that are without any commercial, industrial, or economic use. For the purpose of this Code of Practice, PCBs wastes are classified as follows: Liquid PCB wastes o PCB-based heat transfer among hydraulic fluids Metallic solid wastes
o PCB-based heat transfer and hydraulic fluids Metallic solid wastes
o PCB equipment such as capacitors, transformers, suitch peace, circuit breakers, heat transfer systems, etc.
o Contaminated components removed from electrical equipment such as windings;
o PCB-contaminated components removed from electrical equipment such as windings;
o PCB-contaminated containers and equipment such as metal drums, tanks, pumps, metal filters, etc.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.041	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Station Service Switchgear, 600 volt - (5 sections)	Group	: D05			
Quantity	:	1.00 EA	 '				
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$9,001.85 per EA	Probable Low C	ost Parameter	1.375	\$8,102	\$8,101.67
Total Cost	:	\$9,002	Probable High C	Cost Parameter	1.0625	\$10,352	\$10,352.13

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	3.00	8.0	10	24.00	L	\$55.80	incl. in rate	incl. in rate	\$1,339.27
Electrician	Active	6.00	8.0	10	48.00	L	\$55.80	incl. in rate	incl. in rate	\$2,678.54
Laborer	Active	4.00	8.0	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Loader, FE Rubber Tire (8.6cy)	Active	1.00	8.0	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Equipment Operator (medium)	Active	1.00	8.0	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Welder	Active	1.00	8.0	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.72
Gas Welding Machine	Active	1.00	8.0	10	8.00	Е	\$2.88	incl. in rate	incl. in rate	\$23.02
				Labor Hours	112			•	TOTAL LABOR	\$6,230.84
				Equipment Hours	24			1	OTAL EQUIPMENT	\$1,888.94

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$311.54	\$311.54

TOTAL MATERIAL \$311.54 SUBCONTRACT COSTS Quantity Units Company Price Amount Hauling cost to Yreka Transfer 40 Miles 1.00 \$400.00 \$400.00 TOTAL SUBCONTRACTS \$400.00 SUMMARY OF COSTS \$6,230.84 Labor Burden @ \$311.54 Material Tax @ \$1,888.94 Equipment Tax @ \$0.00 \$24.14 \$146.39 Labor Cost Material Cost \$6,230.84 \$335.69 Equipment Cost Subcontractors \$2,035,33 \$400.00 \$400.00 DIRECT COST SUBTOTALS \$8,831 \$171 DIRECT COST SUBTOTALS \$9,002 al Pay Item Notes Used 3 Crews (2 sections each, weight around 800Lbs per crew) formed of 1 Forman, 2 Electrician, 1 welder to cut, 2 laborer to haul with the loader in the truck. Assumed containing hazardous waste that will be disposed. Calculated 34 miles from Copco 1 to Yreka Transfer Recycling.

\$95.90

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.042	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Unit and plant control switchboard	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$4,364.24 per EA	Probable Low (Cost Parameter	1.375	\$3,928	\$3,927.81
Total Cost	:	\$4,364	Probable High	Cost Parameter	1.0625	\$5,019	\$5,018.87

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Electrician	Active	2.00	8.0	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
				Labor Hours	32				TOTAL LABOR	\$1,917.96
				Equipment Hours	8			Т	OTAL EQUIPMENT	\$1,803.20

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$95.90	\$95.90

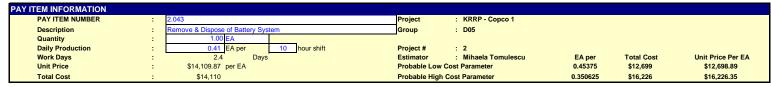
SUBCONTRACT COSTS				
Description	Quantity U	Jnits Notes /	Unit	Contract or Quote
		Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00 Lo	oads	\$400.00	\$400.00

<u> </u>	
TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS						
Labor Cost	\$1,917.96	Labor Burden @	0.0%	\$0.00		\$1,917.96
Material Cost	\$95.90	Material Tax @	7.75%	\$7.43		\$103.33
Equipment Cost	\$1,803.20	Equipment Tax @	7.75%	\$139.75		\$1,942.95
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$4,217	_		\$147	DIRECT COST SUBTOTALS	\$4,364
Additional Pay Item Notes :						

Assumed 1 day of work to dispose unit and plant control switchboard with R3 electrical crew and laborers for hauling with the loader in the truck.

\$686.43



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.4	10	24.00	L	\$58.87	incl. in rate	incl. in rate	\$1,412.93
Electrician	Active	1.00	2.4	10	24.00	L	\$55.80	incl. in rate	incl. in rate	\$1,339.27
Equipment Operator (light)	Active	1.00	2.4	10	24.00	L	\$69.19	incl. in rate	incl. in rate	\$1,660.56
Loader, FE Rubber Tire (8.6cy)	Active	1.00	2.4	10	24.00	E	\$225.40	incl. in rate	incl. in rate	\$5,409.60
Laborer	Active	2.00	2.4	10	48.00	L	\$51.07	incl. in rate	incl. in rate	\$2,451.50
Welder	Active	1.00	2.4	10	24.00	E	\$7.84	incl. in rate	incl. in rate	\$188.16
Gas Welding Machine	Active	1.00	2.4	10	24.00	Е	\$2.88	incl. in rate	incl. in rate	\$69.05
				Labor Hours	120				TOTAL LABOR	\$6,864.26
				Equipment Hours	72			1	OTAL EQUIPMENT	\$5,666.81

MATERIAL COSTS						
Description	Item	Order Unit	onversion ctor / Waste	Order	Order Price	Material Cost
	Quantity	Unit	ctor / waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$686.43	\$686.43

 SUBCONTRACT COSTS

 Description
 Quantity
 Units
 Notes / Company
 Unit
 Contract or Quote

 Louding cost to Yreka Transfer 40 Miles
 1.00
 Loads
 \$400.00
 \$400.00

TOTAL SUBCONTRACTS \$400.00

SUMMARY OF COSTS abor Cost \$6,864.26 Labor Burden @ \$6,864.26 \$0.00 Material Cost \$686.43 Material Tax @ \$739.62 Equipment Cost \$5,666.81 Equipment Tax @ \$439.18 \$6,105.99 Subcontractors \$400.00 \$400.00 DIRECT COST SUBTOTALS DIRECT COST SUBTOTALS \$14.110 \$13,617 \$492 Additional Pay Item Notes :

Assuming 3 days of work disposing around 60 batteries, racks and supports. Using Crews E-19 for metals demolition, E-12 and E-25 for cutting steel and A-3H for equipment disposal, B-34A for hauling.

\$1,073.05

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.044	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Raceways, Conduit and Cable	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.63 EA per 10 hour shift	Project #	: 2			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$12,595.81 per EA	Probable Low C	ost Parameter	0.6875	\$11,336	\$11,336.23
Total Cost	:	\$12,596	Probable High (Cost Parameter	0.53125	\$14,485	\$14,485.18

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Electrician	Active	2.00	1.6	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Laborer	Active	4.00	1.6	10	64.00	L	\$51.07	incl. in rate	incl. in rate	\$3,268.67
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.6	10	16.00	E	\$225.40	incl. in rate	incl. in rate	\$3,606.40
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
				Labor Hours	128				TOTAL LABOR	\$7,153.70
				Zuber Heure						*.,

Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
1.00	LS	1.000	1.00	\$1,073.05	\$1,073.05
	Quantity	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit	Contract or Quote					
			Company	Price	Amount					
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads		\$400.00	\$400.00					

					TOTAL SUBCONTRACTS	\$400.00
SUMMARY OF COSTS						
Labor Cost	\$7,153.70	Labor Burden @	0.0%	\$0.00		\$7,153.70
Material Cost	\$1,073.05	Material Tax @	7.75%	\$83.16		\$1,156.22
Equipment Cost	\$3,606.40	Equipment Tax @	7.75%	\$279.50		\$3,885.90
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$12,233	•		\$363	DIRECT COST SUBTOTALS	\$12,596
Additional Pay Item Notes :						

Assumption for removal of control power cable, conduit (2000 LF) and cable tray (300 LF) - using R3 electrical crew and laborers for hauling with the loader.

TOTAL SUBCONTRACTS

\$400.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.045	Project : KRRP - Co	ррсо 1		
Description	:	Remove & Dispose of Misc. power & control boards	Group : D05			
Quantity	:	1.00 EA				
Daily Production	:	1.25 EA per 10 hour shift	Project # : 2			
Work Days	:	0.8 Days	Estimator : Mihaela To	omulescu EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,030.08 per EA	Probable Low Cost Parameter	1.375	\$4,527	\$4,527.08
Total Cost	:	\$5,030	Probable High Cost Parameter	1.0625	\$5,785	\$5,784.60

Description Active Inc. Days Hours Hours Rate Cost Rate Cost Cos	CREW COSTS										
Electrician	Description						L/E				
Laborer Active 2.00 0.8 10 16.00 L \$51.07 incl. in rate incl. in rate \$817.17 Loader, FE Rubber Tire (8.6cy) Active 1.00 0.8 10 8.00 E \$225.40 incl. in rate incl. in rate \$1,803.20 Equipment Operator (medium) Active 1.00 0.8 10 8.00 L \$72.34 incl. in rate incl. in rate \$578.69	Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Loader, FE Rubber Tire (8.6cy)	Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Equipment Operator (medium) Active 1.00 0.8 10 8.00 L \$72.34 incl. in rate incl. in rate \$578.69 \$578.69 Labor Hours 40 TOTAL LABOR \$2,313.26	Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Labor Hours 40 TOTAL LABOR \$2,313.26	Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	Е	\$225.40	incl. in rate	incl. in rate	\$1,803.20
	Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
							•				
Equipment Hours 8 TOTAL EQUIPMENT \$1,803.20					Labor Hours	40				TOTAL LABOR	\$2,313.26
					Equipment Hours	8			1	TOTAL EQUIPMENT	\$1,803.20

MATERIAL COSTS											
Item	Order	Conversion	Order	Order	Material						
Quantity	Unit	Factor / Waste	Quantity	Price	Cost						
1.00	LS	1.000	1.00	\$346.99	\$346.99						
	Quantity	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price						

					TOTAL MATERIAL	\$346.99
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads		\$400.00		\$400.00

SUMMARY OF COSTS								
Labor Cost	\$2,313.26	Labor Burden @	0.0%	\$0.00		\$2,313.:		
Material Cost	\$346.99	Material Tax @	7.75%	\$26.89		\$373.8		
Equipment Cost	\$1,803.20	Equipment Tax @	7.75%	\$139.75		\$1,942.9		
Subcontractors	\$400.00		•			\$400.0		
DIRECT COST SUBTOTALS \$4,863					DIRECT COST SUBTOTALS	\$5,03		
Additional Pay Item Notes:								
Assumption for removal of 3' x 2' x 9" boards - 10 each using R3 electrical crew and laborers for hauling with the loader.								

2.045

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.046	Project : F	KRRP - Copco 1			
		Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 5000kVA					
Description	:		Group : [005			
Quantity	:	3.00 EA					
Daily Production	:	0.60 EA per 10 hour shift	Project # : 2	2			
Work Days	:	5.0 Days	Estimator : N	Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$32,681.62 per EA	Probable Low Cost Pa	arameter	0.66	\$88,240	\$29,413.46
Total Cost	:	\$98,045	Probable High Cost P	arameter	0.51	\$112,752	\$37,583.86

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	3.00	5.0	10	150.00	L	\$55.80	incl. in rate	incl. in rate	\$8,370.45
Electrician	Active	3.00	5.0	10	150.00	L	\$55.80	incl. in rate	incl. in rate	\$8,370.45
Laborer	Active	6.00	5.0	10	300.00	L	\$51.07	incl. in rate	incl. in rate	\$15,321.90
Hydraulic Excavator (6.0cy)	Active	1.00	5.0	10	50.00	E	\$324.12	incl. in rate	incl. in rate	\$16,206.00
Crawler Crane (130tn)	Active	1.00	5.0	10	50.00	E	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Truck, Utility, with Man-Basket	Active	3.00	5.0	10	150.00	E	\$31.90	incl. in rate	incl. in rate	\$4,785.00
					700				TOTAL ADOD	
				Labor Hours					TOTAL LABOR	
				Equipment Hours	250			Т	OTAL EQUIPMENT	\$34,136.5

MATERIAL COSTS										
Description	Item	Order	Conversion	Order	Order	Material				
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost				
Consumables 5% labor	1.00	LS	1.000	1.00	\$1,987.98	\$1,987.98				

TOTAL MATERIAL	\$1,987.98

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads		\$400.0	0		\$400.00
Remove oil from oil-filled step-up transformer (allowance for oil containers, filters, etc)	1 E.	A	1.000	1.00	\$13,000.00		\$13,000.00
Forklift crew, all-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity, weekly use	1 w	eek	1.000	1.00	\$5,961.23		\$5,961.23
						TOTAL SUBCONTRACTS	\$19,361.23

SUMMARY OF COSTS						
Labor Cost	\$39,759.50	Labor Burden @	0.0%	\$0.00		\$39,759.50
Material Cost	\$1,987.98	Material Tax @	7.75%	\$154.07		\$2,142.04
Equipment Cost	\$34,136.50	Equipment Tax @	7.75%	\$2,645.58		\$36,782.08
Subcontractors	\$19,361.23					\$19,361.23
DIRECT COST SUBTOTALS	\$95,245	-		\$2,800	DIRECT COST SUBTOTALS	\$98,045

Weight and dimensions of the transformers have particular importance so transport vehicles must be adequate. A considerable proportion of the weight is due to the oil, so the direct consequence is that the big transformers have to be transported empty. During transport the transformers are filled either by dry air or nitrogen. Because of transportation, the auxiliaries have to be removed. For this reason the collaboration with all the people involved in the project is essential. AECOM best assumption for a 5000 kVA, 23007/2000 volt transformer removal- - 3 crew R3 formed of 1 Foreman, 1 Electricians, 1 Utility man-bracket truck, 1 crane for disposal of each transformer in the truck and 2 laborer's to remove the auxiliaries and the pad (1 excavator).

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.047	Project	: KRRP - Copco 1			
		Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase,					
Description	:	4165kVA	Group	: D05			
Quantity	:	3.00 EA					
Daily Production	:	0.60 EA per 10 hour shift	Project #	: 2			
Work Days	:	5.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$32,681.62 per EA	Probable Low C	Cost Parameter	0.66	\$88,240	\$29,413.46
Total Cost		\$09.045	Probable High (Cost Baramotor	0.51	\$112.752	\$27 502 06

Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Active	3.00	5.0	10	150.00	L	\$55.80	incl. in rate	incl. in rate	\$8,370.45
Active	3.00	5.0	10	150.00	L	\$55.80	incl. in rate	incl. in rate	\$8,370.45
Active	6.00	5.0	10	300.00	L	\$51.07	incl. in rate	incl. in rate	\$15,321.90
Active	1.00	5.0	10	50.00	E	\$324.12	incl. in rate	incl. in rate	\$16,206.00
Active	1.00	5.0	10	50.00	E	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Active	3.00	5.0	10	150.00	Е	\$31.90	incl. in rate	incl. in rate	\$4,785.00
	Active	Idle crew Active 3.00 Active 3.00 Active 6.00 Active 1.00 Active 1.00 Active 1.00 Active 1.00	Idle crew Worked Active 3.00 5.0 Active 3.00 5.0 Active 6.00 5.0 Active 1.00 5.0 Active 1.00 5.0 Active 1.00 5.0 Active 1.00 5.0	Idle crew Worked /day Active 3.00 5.0 10 Active 3.00 5.0 10 Active 6.00 5.0 10 Active 1.00 5.0 10	Idle crew Worked /day Hours Active 3.00 5.0 10 150.00 Active 3.00 5.0 10 150.00 Active 6.00 5.0 10 300.00 Active 1.00 5.0 10 50.00 Active 1.00 5.0 10 50.00 Active 1.00 5.0 10 50.00 Active 1.00 5.0 10 50.00	Idle crew Worked /day Hours Active 3.00 5.0 10 150.00 L Active 3.00 5.0 10 150.00 L Active 6.00 5.0 10 300.00 L Active 1.00 5.0 10 50.00 E Active 1.00 5.0 10 50.00 E Active 1.00 5.0 10 50.00 L Active 1.00 5.0 10 50.00 L	Idle crew Worked /day Hours Rate Active 3.00 5.0 10 150.00 L \$55.80 Active 3.00 5.0 10 150.00 L \$55.80 Active 6.00 5.0 10 300.00 L \$51.07 Active 1.00 5.0 10 50.00 E \$324.12 Active 1.00 5.0 10 50.00 E \$262.91 Active 1.00 5.0 10 50.00 L \$72.34 Active 1.00 5.0 10 50.00 L \$81.60	Idle crew Worked /day Hours Rate Cost Active 3.00 5.0 10 150.00 L \$55.80 incl. in rate Active 3.00 5.0 10 150.00 L \$55.80 incl. in rate Active 6.00 5.0 10 300.00 L \$51.07 incl. in rate Active 1.00 5.0 10 50.00 E \$324.12 incl. in rate Active 1.00 5.0 10 50.00 E \$262.91 incl. in rate Active 1.00 5.0 10 50.00 L \$72.34 incl. in rate Active 1.00 5.0 10 50.00 L \$81.60 incl. in rate	Idle crew Worked /day Hours Rate Cost Rate Active 3.00 5.0 10 150.00 L \$55.80 incl. in rate incl. in rate Active 3.00 5.0 10 150.00 L \$55.80 incl. in rate incl. in rate Active 6.00 5.0 10 300.00 L \$51.07 incl. in rate incl. in rate

Labor Hours	700	TOTAL LABOR	\$39,759.50
Equipment Hours	250	TOTAL EQUIPMENT	\$34,136.50

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor	1.00	LS	1.000	1.00	\$1,987.98	\$1,987.98

TOTAL MATERIAL	\$1,987.98

SUBCONTRACT COSTS						
Description	Quantity Units	Notes / Company	Unit Price			Contract or Quote Amount
Hauling cost to Yreka Transfer 40 Miles	1.00 Loads		\$400.00			\$400.00
Remove oil from oil-filled step-up transformer (allowance for oil containers, filters, etc)	1 EA	1.000	1.00	\$13,000.00		\$13,000.00
Forklift crew, all-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity, weekly use	1 week	1.000	1.00	\$5,961.23		\$5,961.23
					TOTAL SUBCONTRACTS	\$19,361.23

SUMMARY OF COSTS						
Labor Cost	\$39,759.50 Labor Burden	@	0.0%	\$0.00		\$39,759.50
Material Cost	\$1,987.98 Material Tax 6	@	7.75%	\$154.07		\$2,142.04
Equipment Cost	\$34,136.50 Equipment Ta	ax @	7.75%	\$2,645.58		\$36,782.08
Subcontractors	\$19,361.23					\$19,361.23
DIRECT COST SUBTOTALS	\$95,245			\$2,800	DIRECT COST SUBTOTALS	\$98,045
Additional Pay Item Notes :						

Weight and dimensions of the transformers have particular importance so transport vehicles must be adequate. A considerable proportion of the weight is due to the oil, so the direct consequence is that the big transformers have to be transported empty. During transport the transformers are filled either by dry air or nitrogen. Because of transportation, the auxiliaries have to be removed. For this reason the collaboration with all the people involved in the project is essential. AECOM best assumption for a 4165 kVA, 2300/T2000 volt transformer removal- 3 crew R3 formed of 1 Foreman, 1 Electricians, 1 Utility man-bracket truck, 1 crane for disposal of each transformer in the truck and 2 laborer's to remove the auxiliaries and the pad (1 excevator).

DIRECT COST SUBTOTALS

\$2,965

PAY ITEM COST DETAIL WORKSHEET

DIRECT COST SUBTOTALS

Additional Pay Item Notes :

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.048	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Seven 40-Ton Travelling Crane motors - hoist	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,965.11 per EA	Probable Low	Cost Parameter	2.75	\$2,669	\$2,668.60
Total Cost	:	\$2,965	Probable High	Cost Parameter	2.125	\$3,410	\$3,409.88

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.4	10	4.00	E	\$117.28	incl. in rate	incl. in rate	\$469.12
Hydraulic Crane (80tn)	Active	1.00	0.4	10	4.00	E	\$197.66	incl. in rate	incl. in rate	\$790.64
Laborer	Active	1.00	0.4	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.29
Equipment Operator (crane)	Active	1.00	0.4	10	4.00	L	\$81.60	incl. in rate	incl. in rate	\$326.39
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$75.72	incl. in rate	incl. in rate	\$302.90
Steelworker	Active	1.00	0.4	10	4.00	L	\$78.10	incl. in rate	incl. in rate	\$312.40
				Labor Hours	16				TOTAL LABOR	\$1,145.98
				Equipment Hours	8				OTAL EQUIPMENT	\$1,259.76

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$57.30	\$57.3
Consumables 676 labor (saw blades, uniii bits, etc)	1.00	20	1.000	1.00	\$57.50	

TOTAL MATERIAL \$57.30 SUBCONTRACT COSTS

Description Company Price \$400.00 Amount \$400.00 \$0.00 \$0.00 Hauling cost to Yreka Transfer 40 Miles Loads TOTAL SUBCONTRACTS \$400.00 SUMMARY OF COSTS \$0.00 \$4.44 \$97.63 \$1,145.98 \$61.74 \$1,357.39 \$400.00 Labor Cost Material Cost \$1,145.98 Labor Burden @ \$57.30 Material Tax @ \$1,259.76 Equipment Tax @ \$400.00 Equipment Cost Subcontractors

\$102

Assumed removal of hoist, hoist trolley, gantry: 1 Steelworker and 1 Laborers to load the overhead crane motors in the truck using the crane.

\$2,863

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.049	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 40-Ton Travelling Crane control equipment	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	1.88 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.5 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,931.23 per EA	Probable Low	Cost Parameter	2.0625	\$2,638	\$2,638.11
Total Cost	:	\$2,931	Probable High	Cost Parameter	1.59375	\$3,371	\$3,370.92

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.5	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.73
Electrician	Active	1.00	0.5	10	5.00	L	\$55.80	incl. in rate	incl. in rate	\$279.02
Hydraulic Crane (35tn)	Active	2.00	0.5	10	10.00	E	\$117.77	incl. in rate	incl. in rate	\$1,177.70
Equipment Operator (crane)	Active	1.00	0.5	10	5.00	L	\$81.60	incl. in rate	incl. in rate	\$407.99
				Labor Hours	20				TOTAL LABOR	\$1,197.74
										\$1,177.70

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
·	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$59.89	\$59.89

TOTAL MATERIAL \$59.89

Description	Quantity	Units	Notes /		Unit		Contract or Quote
			Company		Price		Amount
lauling cost to Yreka Transfer 40 Miles	1.00	Loads			\$400.00		\$400.00
							\$0.00
						TOTAL SUBCONTRACTS	\$400.00
						•	
SUMMARY OF COSTS							
abor Cost	\$1,197.74 L	abor Burden @	0.0%	\$0.00			\$1,197.74
Material Cost	\$59.89 N	Material Tax @	7.75%	\$4.64			\$64.53
quipment Cost	\$1,177.70 E	quipment Tax @	7.75%	\$91.27			\$1,268.97
Subcontractors	\$400.00		•				\$400.00
DIRECT COST SUBTOTALS	\$2,835			\$96		DIRECT COST SUBTOTALS	\$2,931
Additional Pay Item Notes :						_	
Additional Pay Item Notes :							

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.050	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 40-Ton Travelling Crane Festoon Cable	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,394.27 per EA	Probable Low Co	ost Parameter	2.75	\$1,255	\$1,254.84
Total Cost	:	\$1,394	Probable High C	ost Parameter	2	\$1,673	\$1,673.13

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.44
Equipment Operator (light)	Active	1.00	0.4	10	4.00	L	\$69.19	incl. in rate	incl. in rate	\$276.76
				Labor Hours	12				TOTAL LABOR	\$685.34
				Equipment Hours	4			1	TOTAL EQUIPMENT	\$252.44

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$34.27	\$34.27

						TOTAL MATERIAL	\$34.27
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quote
			Company		Price		Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads			\$400.00		\$400.00
							\$0.00
							\$0.00
						TOTAL SUBCONTRACTS	\$400.00
						•	
SUMMARY OF COSTS							
Labor Cost	\$685.34 L	abor Burden @	0.0%	\$0.00			\$685.34
Material Cost	\$34.27	Material Tax @	7.75%	\$2.66			\$36.92
Equipment Cost		Equipment Tax @	7.75%	\$19.56			\$272.00
Subcontractors	\$400.00		•	<u> </u>			\$400.00
							·
DIRECT COST SUBTOTALS	\$1,372			\$22		DIRECT COST SUBTOTALS	\$1,394
Additional Pay Item Notes :							
			<u> </u>				
Assumed 200 LF of cable: 2 Laborer	e will load in the truck with	the loader the overhead cra	ne cable				

Assumed 200 LF of cable: 2 Laborers will load in the truck with the loader the overhead crane cable

\$9.19

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.051	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Four 15-Ton Overhead Crane Motors - hoist	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	10.00 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$682.46 per EA	Probable Low	Cost Parameter	11	\$614	\$614.22
Total Cost	:	\$682	Probable High	Cost Parameter	8	\$819	\$818.95

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Crane (17tn)	Active	1.00	0.1	10	1.00	Е	\$82.43	incl. in rate	incl. in rate	\$82.43
Laborer	Active	2.00	0.1	10	2.00	L	\$51.07	incl. in rate	incl. in rate	\$102.15
Equipment Operator (crane)	Active	1.00	0.1	10	1.00	L	\$81.60	incl. in rate	incl. in rate	\$81.60
						-				
				Labor Hours	3				TOTAL LABOR	\$183.74
				Equipment Hours	1			1	OTAL EQUIPMENT	\$82.43

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$9.19	\$9.19

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Amount

Hauling cost to Yreka Transfer 40 Miles 1.00 Loads \$400.00

TOTAL SUBCONTRACTS \$400.00

 SUMMARY OF COSTS

 Labor Cost
 \$183.74
 Labor Burden @
 0.0%
 \$0.00
 \$183.74

 Material Cost
 \$9.19
 Material Tax @
 7.75%
 \$0.71
 \$9.90

 Equipment Cost
 \$82.43
 \$400.00
 \$6.39
 \$6.39
 \$88.83

 Subcontractors
 \$400.00
 \$400.00
 \$0.00
 \$7.75%
 \$6.39
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Assumed removal of hoist, hoist trolley, gantry: 2 Laborers to load the overhead crane motors in the truck using the crane.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.052	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 15-Ton Overhead Crane control equipment	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	3.75 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.3 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$899.38 per EA	Probable Low	Cost Parameter	4.125	\$809	\$809.44
Total Cost		\$899	Probable High	Cost Parameter	3.1875	\$1.034	\$1.034.28

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.3	10	6.00	L	\$51.07	incl. in rate	incl. in rate	\$306.44
Electrician	Active	1.00	0.3	10	3.00	L	\$55.80	incl. in rate	incl. in rate	\$167.41
				Labor Hours	9				TOTAL LABOR	\$473.85
				Equipment Hours	0			1	TOTAL EQUIPMENT	\$0.00

\$23.6

						TOTAL MATERIAL	\$23.6
							
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quote
			Company		Price		Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads			\$400.00		\$400.
						TOTAL SUBCONTRACTS	\$400
						TOTAL SUBCONTRACTS	\$400.
UMMARY OF COSTS							
abor Cost	\$473.85	Labor Burden @	0.0%	\$0.00			\$473
laterial Cost		Material Tax @	7.75%				\$25
quipment Cost		Equipment Tax @	7.75%				\$0.
Subcontractors	\$400.00						\$400
DIRECT COST SUBTOTALS	\$898			\$2		DIRECT COST SUBTOTALS	\$8
Additional Pay Item Notes :	4000			V-			-

Assumed 1 cubicle: 1 Laborers and 1 Electrician. Using the same truck, loader, crane as the ones used to load at the end of the day the overhead crane cable and motors.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.053	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 15-Ton Overhead Crane Festoon Cable	Group	: D11			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,407.53 per EA	Probable Low	Cost Parameter	2.75	\$1,267	\$1,266.78
Total Cost		\$1.408	Probable High	Cost Parameter	2.125	\$1.619	\$1.618.66

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.44
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.34	incl. in rate	incl. in rate	\$289.34
				Labor Hours	12				TOTAL LABOR	\$697.93
				Equipment Hours	4			1	OTAL EQUIPMENT	\$252.44

			Equipment no	Durs 4		TOTAL EQUIPMENT	
ATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
·	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
nsumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00		\$34.90	
						TOTAL MATERIAL	
BCONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quo
Description	Quantity	Office	Company		Price		Amount
auling cost to Yreka Transfer 40 Miles	1.00	Loads	Company		\$400.00		, unoun
• • • • • • • • • • • • • • • • • • • •							
						TOTAL SUBCONTRACTS	•
						TOTAL SUBCONTRACTS	,
MMARY OF COSTS						TOTAL SUBCONTRACTS	•
	\$697.93	Labor Burden @		.0% \$0.00		TOTAL SUBCONTRACTS	
oor Cost		Labor Burden @ Material Tax @		.0% \$0.00 75% \$2.70		TOTAL SUBCONTRACTS	
oor Cost terial Cost	\$34.90		7.			TOTAL SUBCONTRACTS	
JMMARY OF COSTS or Cost terial Cost uipment Cost boontractors	\$34.90	Material Tax @	7.	75% \$2.70		TOTAL SUBCONTRACTS	(
oor Cost terial Cost uipment Cost	\$34.90 \$252.44	Material Tax @	7.	75% \$2.70		TOTAL SUBCONTRACTS DIRECT COST SUBTOTALS	5

TOTAL SUBCONTRACTS

\$34.560.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.053a	Project	: KRRP - Copco 1			
Description	:	Remove petroleum products from mechanical equipment	Group	: D09			
Quantity	:	10,500.00 GAL					
Daily Production	:	5,000.00 GAL per 10 hour shift	Project #	: 2			
Work Days	:	2.1 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$3.63 per GAL	Probable Low	Cost Parameter	5500	\$34,311	\$3.27
Total Cost	:	\$38,124	Probable High	Cost Parameter	4250	\$43,842	\$4.18

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.1	10	21.00	L	\$58.87	incl. in rate	incl. in rate	\$1,236.31
Laborer	Active	2.00	2.1	10	42.00	L	\$51.07	incl. in rate	incl. in rate	\$2,145.07
						I				
				Labor Hours	63				TOTAL LABOR	\$3,381.38
				Equipment Hours	0				OTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (filters, pads, etc)	1.00	LS	1.000	1.00	\$169.07	\$169.07

					TOTAL WATERIAL	\$109.07
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000						
gallons, minimum charge, 4 hours, 2 compartment	128.00	hour	RSM Means 028120101260	\$270.00		\$34,560.00
gallorio, milimitani orialigo, i riodio, 2 comparanoni	120.00	11001	11011 Modilo 020120101200	ψ210.00		φο 1,000.00

SUMMARY OF COSTS						
Labor Cost	\$3,381.38	Labor Burden @	0.0%	\$0.00		\$3,381.38
Material Cost	\$169.07	Material Tax @	7.75%	\$13.10		\$182.17
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$34,560.00					\$34,560.00
DIRECT COST SUBTOTALS	£20.110			612	DIDECT COST SUBTOTALS	\$29.424

Petroleum-based products, ranging from fuel oil and hydraulic fluid to lubricating greases and oils, are found throughout every type of power generating plant or system. Lubrication supports bearings and moving parts in all sorts of equipment: pumps, conveyors, leeders, scrubbers, cranes, turbines, and more. A good oil/water separation system will result in a flow of concentrated waste oil to a collection area and a flow of oil-free water ready for secondary processing or discharge. Once an oil layer has been separated from free water, it must be removed for recycling or disposal. Many plants use one or more of these oil emoval methods, but each has costly limitations:

1. Absorbert materials. Absorbert materials are treated processes of the materials are ready for secondary processing or discharge. Once an oil layer has been separated and very efficient in terms of oil pickup. Yet, their use on large volumes of waste oil results in multiple, recurring costs that can make them impractical as an everyday solution:

1. the costs of used-media collection, disposal, or re-processing/recycling.

2. Manually operated "slotted pipes." Many separators feature a "slotted pipe," a pipe located near the top of the vessel that has a horizontal opening. Oil is removed by turning the horizontal opening downward until it meets the floating oil layer, which drains through the pipe to a collection receptacle. These pipes work well on thick layers of oil, but cannot drain off a sheen of oil without draining off a large amount of water as well.

AECOM assumed the best is Vacuum truck removal method. Used a crew formed of 1 Forman, 5 Laborers to takeout the perfortedium waste, 1 Electrician to unplug the power and to assure the temporary power at the construction site. Vacuum-equipped tank trucks are used to remove waste oil from collection points at plants so that it can be transported to recycling or disposal locations. If the waste oil has been thoroughly separated, highly concentrated, and stored in an appropriate receptacle,

Additional Pay Item Notes :

TOTAL SUBCONTRACTS

\$400.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 1 Remove & Dispose of 69kV circuit breakers, oil filled, PCB
2.00 EA
2.50 EA 10 hour shift
0.8 Days
\$1,965.57 per EA : D05 Description Group Quantity
Daily Production
Work Days
Unit Price Project # Estimator Project # : 2
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter EA per 2.75 Total Cost \$3,538 Unit Price Per EA \$1,769.02 \$3,931 \$2,162.13 Total Cost Probable High Cost Parameter 2.25 \$4,324

Labor / Equipment
Cost
\$470.98
\$446.42
\$942.16
\$652.78
\$817.17

L				
I	Labor Hours	40	TOTAL LABOR	\$2,387.35
L	Equipment Hours	8	TOTAL EQUIPMENT	\$942.16

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$119.37	\$119.37

TOTAL MATERIAL	\$119.37

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads		\$400.00	\$400.00

SUMMARY OF COSTS					
Labor Cost	\$2,387.35 Labor Burden @	0.0%	\$0.00		\$2,387.3
Material Cost	\$119.37 Material Tax @	7.75%	\$9.25		\$128.6
Equipment Cost	\$942.16 Equipment Tax @	7.75%	\$73.02		\$1,015.1
Subcontractors	\$400.00	<u>'</u>			\$400.0
DIRECT COST SUBTOTALS	\$3,849		\$82	DIRECT COST SUBTOTALS	\$3,93
Additional Pay Item Notes :				-	

Production is based off of RSMs using Crew formed of 1 Forman, 1 Electrician, 1 Crane. Considered 1 laborer to help loading circuit breakers from the switchyard in the truck for saving it in the designated place.

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	2.055		Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 69kV discon	nect switches, group-operated	Group	: D05			
Quantity	:	2.00 EA						
Daily Production	:	2.50 EA per	10 hour shift	Project #	: 2			
Work Days	:	0.8 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,965.57 per EA		Probable Low	Cost Parameter	2.75	\$3,538	\$1,769.02
Total Cost		\$3,931		Probable High	Cost Parameter	2.25	\$4,324	\$2,162.13

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman (out)	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Hydraulic Crane (35tn)	Active	1.00	0.8	10	8.00	E	\$117.77	incl. in rate	incl. in rate	\$942.16
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$81.60	incl. in rate	incl. in rate	\$652.78
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
				Labor Hours	40				TOTAL LABOR	\$2,387.35
				Equipment Hours	8			т	OTAL EQUIPMENT	\$942.16

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$119.37	\$119.37

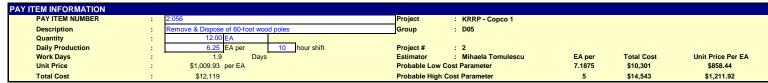
TOTAL MATERIAL \$119.37

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads		\$400.00	\$400.00

TOTAL SUBCONTRACTS

SUMMARY OF COSTS						
Labor Cost	\$2,387.35	Labor Burden @	0.0%	\$0.00		\$2,387.35
Material Cost	\$119.37	Material Tax @	7.75%	\$9.25		\$128.62
Equipment Cost	\$942.16	Equipment Tax @	7.75%	\$73.02		\$1,015.18
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$3,849	•		\$82	DIRECT COST SUBTOTALS	\$3,931
Additional Pay Item Notes :						

Production is based off of RSMs using Crew formed of 1 Forman, 1 Electrician,1Crane. Considered 1 laborer to help loading circuit breakers from the switchyard in the truck for saving it in the designated place.



Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.9	10	19.00	L	\$58.87	incl. in rate	incl. in rate	\$1,118.57
Electrician	Active	1.00	1.9	10	19.00	L	\$55.80	incl. in rate	incl. in rate	\$1,060.26
Hydraulic Crane (17tn)	Active	1.00	1.9	10	19.00	E	\$82.43	incl. in rate	incl. in rate	\$1,566.17
Equipment Operator (medium)	Active	1.00	1.9	10	19.00	L	\$72.34	incl. in rate	incl. in rate	\$1,374.38
Laborer	Active	2.00	1.9	10	38.00	L	\$51.07	incl. in rate	incl. in rate	\$1,940.77
Vibratory Hammer & Extractor	Active	1.00	1.9	10	19.00	E	\$94.14	incl. in rate	incl. in rate	\$1,788.66
Truck, Utility, with Man-Basket	Active	1.00	1.9	10	19.00	E	\$31.90	incl. in rate	incl. in rate	\$606.10

				Equipment Hours	57		TOTAL EQUIPMENT	\$3,960.93
1								
	MATERIAL COSTS							
	Description	Item	Order	Conversion	Order	Order		Material
		Quantity	Unit	Factor / Waste	Quantity	Price		Cost
	Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$274.70		\$274.70

12.00

\$4.74

Labor Hours

1.000

Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade

12.00

CY

TOTAL MATERIAL \$331.58

\$5,493.98

\$56.88

\$2,000.00

TOTAL LABOR

TOTAL SUBCONTRACTS

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling cost to Yreka Transfer 40 Miles	5.00	Loads		\$400.00	\$2,000.00

SUMMARY OF COSTS					
Labor Cost	\$5,493.98 Labor Burden @	0.0%	\$0.00		\$5,493.98
Material Cost	\$331.58 Material Tax @	7.75%	\$25.70		\$357.28
Equipment Cost	\$3,960.93 Equipment Tax @	7.75%	\$306.97		\$4,267.90
Subcontractors	\$2,000.00				\$2,000.00
DIRECT COST SUBTOTALS	\$11,786		\$333	DIRECT COST SUBTOTALS	\$12,119

DIRECT COST SUBTOTALS Additional Pay Item Notes :

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician, 1 Crane and 1 man-basket truck to help untie the line. Considered 2 laborer and 1 Vibratory Hammer for demolish the pole foundation helping placing poles in a designated place and loading them in the truck for disposal. This process includes filling in pole locations with gravel, clean fill and topsoil.

\$140.01

Hauling cost to Yreka Transfer 40 Miles

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.057	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 30-foot wood cross arms	Group	: D05			
Quantity	:	24.00 EA	_				
Daily Production	:	20.00 EA per 10 hour shift	Project #	: 2			
Work Days	:	1.2 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$250.71 per EA	Probable Low Co	ost Parameter	23	\$5,114	\$213.10
Total Cost	:	\$6,017	Probable High C	ost Parameter	16	\$7,220	\$300.85

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.2	10	12.00	L	\$58.87	incl. in rate	incl. in rate	\$706.46
Laborer	Active	2.00	1.2	10	24.00	L	\$51.07	incl. in rate	incl. in rate	\$1,225.75
Hydraulic Crane (17tn)	Active	1.00	1.2	10	12.00	E	\$82.43	incl. in rate	incl. in rate	\$989.16
Equipment Operator (medium)	Active	1.00	1.2	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.03
				Labor Hours	48				TOTAL LABOR	\$2,800.25
				Equipment Hours	12			1	OTAL EQUIPMENT	\$989.16

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$140.01	\$140.01

SUBCONTRACT COSTS

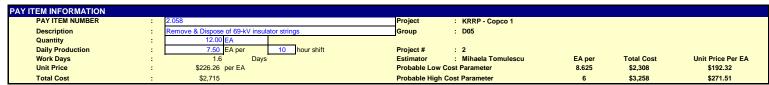
Description Contract or Quote Amount \$2,000.00 Notes / Company Unit Price \$400.00 Quantity

				TOTAL SUBCONTRACTS	\$2,000.00
SUMMARY OF COSTS					
Labor Cost	\$2,800.25 Labor Burden @	0.0%	\$0.00		\$2,800.25
Material Cost	\$140.01 Material Tax @	7.75%	\$10.85		\$150.86
Equipment Cost	\$989.16 Equipment Tax @	7.75%	\$76.66		\$1,065.82
Subcontractors	\$2,000.00				\$2,000.00
DIRECT COST SUBTOTALS	\$5,929		\$88	DIRECT COST SUBTOTALS	\$6,017
Additional Pay Item Notes :				•	

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician,1 Crane and 1 truck to dispose the cross arms.

Loads

\$128.81



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
				Labor Hours	48				TOTAL LABOR	\$2,576.29
				Equipment Hours	0			Т	OTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$128.81	\$128.81
1						· ·
						!

Quantity Units	Notes /	Unit	Contract or Quote
	Company	Price	Amount
		T	DTAL SUBCONTRACTS \$0.0
		TO TO	TAL SUBCONTRACTS \$0.0
\$2,576.29 Labor Burden @	0.0% \$0.0	0	\$2,576.2
\$128.81 Material Tax @			\$138.8
	@ 7.75% \$0.0	0	\$0.0
\$0.00			\$0.0
\$2,705	\$1	0 DIRE	CT COST SUBTOTALS \$2,719
	\$2,576.29 Labor Burden @ \$128.81 Material Tax @ \$0.00 Equipment Tax	\$2,576.29 Labor Burden @ 0.0% \$0.00 \$128.81 Material Tax @ 7.75% \$3.9 \$0.00 \$0.00	Company Price

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL MATERIAL

\$11,181.12

\$14,101.72

\$706.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.059	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Transmission Line No. 3	Group	: D05			
Quantity	:	1.66 MILE	_				
Daily Production	:	0.63 MILE per 10 hour shift	Project #	: 2			
Work Days	:	2.7 Days	Estimator	: Mihaela Tomulescu	MILE per	Total Cost	Unit Price Per MILE
Unit Price	:	\$21,636.41 per MILE	Probable Low C	ost Parameter	0.71875	\$30,529	\$18,390.95
Total Cost	:	\$35,916	Probable High C	Cost Parameter	0.46875	\$44,896	\$27,045.51

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.7	10	26.60	L	\$55.80	incl. in rate	incl. in rate	\$1,484.3
Electrician	Active	2.00	2.7	10	53.20	L	\$55.80	incl. in rate	incl. in rate	\$2,968.72
Truck, Utility, with Man-Basket	Active	2.00	2.7	10	53.20	E	\$31.90	incl. in rate	incl. in rate	\$1,697.08
Laborer	Active	2.00	2.7	10	53.20	L	\$51.07	incl. in rate	incl. in rate	\$2,717.08
Hydraulic Excavator (2.5cy)	Active	1.00	2.7	10	26.60	E	\$205.40	incl. in rate	incl. in rate	\$5,463.64
Hydraulic Crane (80tn)	Active	1.00	2.7	10	26.60	E	\$197.66	incl. in rate	incl. in rate	\$5,257.76
Equipment Operator (crane)	Active	1.00	2.7	10	26.60	L	\$81.60	incl. in rate	incl. in rate	\$2,170.5
Equipment Operator (light)	Active	1.00	2.7	10	26.60	L	\$69.19	incl. in rate	incl. in rate	\$1,840.45
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.7	10	26.60	Е	\$63.28	incl. in rate	incl. in rate	\$1,683.25

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$559.06	\$559.06
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	31.00	CY	1.000	31.00	\$4.74	\$146.94

Labor Hour

Equipment Hou

186 2

133

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Amount

Rent trailer with cable pulling rig, for high voltage line work - Rent per day 2.66 days \$3,000.00 \$7,980.00

 line work - Rent per day
 2.66
 days
 \$3,000.00
 \$7,980.00

 Hauling cost to Yreka Transfer 40 Miles
 2.00
 Loads
 1 mile per load
 \$400.00
 \$800.00

SUMMARY OF COSTS \$11,181.12 Labor Burden @ \$11,181.12 Material Cost \$706.00 Material Tax @ \$54.7 \$760.7 \$15,194.61 \$1,092.88 Equipment Cost Equipment Tax @ Subcontractors \$8,780.00 \$8,780.00 DIRECT COST SUBTOTALS DIRECT COST SUBTOTALS \$35,916 \$34,769 \$1,148 Additional Pay Item Notes

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Exavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission structures are 80 for est tall. There are several different kinds of transmission structures are toxicuruse are constructed of wood. They can be single-circulated, carrying one set of transmission in or double-circulated with two sets of lines. Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 1.66 miles of overhead transmission we will have approximately 31 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly engled concrete base. The base may be buried to or more feet below the ground surface. The diameter of the pole and the depth the base is buried depends on the condition of the soils and the voltage of the line. Assumed the structures are disposed to Yreka recycling, 36 miles away. This estimate is made as the best AECOM assumption, as actual pricing would occur during the detailed engineering and construction bid process.

TOTAL SUBCONTRACTS

\$570.91

\$7,190.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.060	Project : KRRP - Copco 1			
Description	:	Remove & Dispose of Transmission Line No. 15	Group : D05			
Quantity	:	1.33 MILE				
Daily Production	:	0.63 MILE per 10 hour shift	Project # : 2			
Work Days	:	2.1 Days	Estimator : Mihaela Tomulescu	MILE per	Total Cost	Unit Price Per MILE
Unit Price	:	\$21,748.55 per MILE	Probable Low Cost Parameter	0.71875	\$24,587	\$18,486.26
Total Cost	:	\$28,926	Probable High Cost Parameter	0.46875	\$36.157	\$27.185.68

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.1	10	21.30	L	\$55.80	incl. in rate	incl. in rate	\$1,188.60
Electrician	Active	2.00	2.1	10	42.60	L	\$55.80	incl. in rate	incl. in rate	\$2,377.21
Truck, Utility, with Man-Basket	Active	2.00	2.1	10	42.60	E	\$31.90	incl. in rate	incl. in rate	\$1,358.94
Laborer	Active	2.00	2.1	10	42.60	L	\$51.07	incl. in rate	incl. in rate	\$2,175.71
Hydraulic Excavator (2.5cy)	Active	1.00	2.1	10	21.30	E	\$205.40	incl. in rate	incl. in rate	\$4,375.02
Hydraulic Crane (80tn)	Active	1.00	2.1	10	21.30	E	\$197.66	incl. in rate	incl. in rate	\$4,210.16
Equipment Operator (crane)	Active	1.00	2.1	10	21.30	L	\$81.60	incl. in rate	incl. in rate	\$1,738.04
Equipment Operator (light)	Active	1.00	2.1	10	21.30	L	\$69.19	incl. in rate	incl. in rate	\$1,473.75
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.1	10	21.30	Е	\$63.28	incl. in rate	incl. in rate	\$1,347.86

Labor Hours	149.1	TOTAL LABOR	\$8,953.31
Equipment Hours	106.5	TOTAL EQUIPMENT	\$11,291.98

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$447.67	\$447.67
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	26.00	CY	1.000	26.00	\$4.74	\$123.24

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high voltage					
line work - Rent per day	2.13	days		\$3,000.00	\$6,390.00
Hauling cost to Yreka Transfer 40 Miles	2.00	Loads	1 mile per load	\$400.00	\$800.00

SUMMARY OF COSTS						
Labor Cost	\$8,953.31	Labor Burden @	0.0%	\$0.00		\$8,953.31
Material Cost	\$570.91	Material Tax @	7.75%	\$44.25		\$615.15
Equipment Cost	\$11,291.98	Equipment Tax @	7.75%	\$875.13		\$12,167.11
Subcontractors	\$7,190.00		-			\$7,190.00
DIRECT COST SUBTOTALS	\$28,006	-		\$919	DIRECT COST SUBTOTALS	\$28,926
Additional Pay Item Notes :					•	

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo :2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission line poles or structures are constructed of wood. They can be single-pole dor multi-poled. They can be single-circuited, carrying one set of transmission line poles or double-circuited with two sets of lines. Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 1.33 miles of overhead transmission we will have approximately 26 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or gus wires may be required. Poles with guy wires impaired. An unch larger area. Angle structures are usually more than double the diameter of other steel poles. They are made of steel, usually five to sk feet in diameter, and have a large concrete base. The base may be buried ten or more feet below the ground surface. The diameter of the pole and the depth the base is buried depends on the condition of the soils and the voltage of the line. Assumed the structures are disposed to Yreka recycling, 36 miles away. This estimate is m

\$146.36

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION KRRP - Copco 1 temove & Dispose of Transmission Line No. 26-1 : D05 Description Group 10 hour shift Daily Production 0.63 MILE per Project # Work Days Days Estimator Mihaela Tomulescu MILE per **Total Cost** Unit Price Per MILE \$28,438.33 per MILE 0.71875 **Unit Price** Probable Low Cost Parameter \$1.692 \$24,172,58 **Total Cost** \$1,991 Probable High Cost Parameter 0.46875 \$2,488 \$35,547.91

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.1	10	1.10	L	\$55.80	incl. in rate	incl. in rate	\$61.3
Electrician	Active	2.00	0.1	10	2.20	L	\$55.80	incl. in rate	incl. in rate	\$122.7
Truck, Utility, with Man-Basket	Active	2.00	0.1	10	2.20	Е	\$31.90	incl. in rate	incl. in rate	\$70.18
Laborer	Active	2.00	0.1	10	2.20	L	\$51.07	incl. in rate	incl. in rate	\$112.30
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.10	Е	\$205.40	incl. in rate	incl. in rate	\$225.9
Hydraulic Crane (80tn)	Active	1.00	0.1	10	1.10	Е	\$197.66	incl. in rate	incl. in rate	\$217.43
Equipment Operator (crane)	Active	1.00	0.1	10	1.10	L	\$81.60	incl. in rate	incl. in rate	\$89.70
Equipment Operator (light)	Active	1.00	0.1	10	1.10	L	\$69.19	incl. in rate	incl. in rate	\$76.1
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	2.00	0.1	10	2.20	Е	\$36.81	incl. in rate	incl. in rate	\$80.9

Labor Hou	s 7.7	TOTAL LABOR	\$462.38
Equipment Hou	s 6.6	TOTAL EQUIPMENT	\$594.53

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$23.12	\$23.12
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	26.00	CY	1.000	26.00	\$4.74	\$123.24

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high voltage	0.11	dave		\$3,000,00	\$330.00

SUMMARY OF COSTS						
Labor Cost	\$462.38	Labor Burden @	0.0%	\$0.00		\$462.38
Material Cost	\$146.36	Material Tax @	7.75%	\$11.34		\$157.70
Equipment Cost	\$594.53	Equipment Tax @	7.75%	\$46.08		\$640.60
Subcontractors	\$730.00					\$730.00
DIRECT COST SUBTOTALS	\$1,933			\$57	DIRECT COST SUBTOTALS	\$1,991
Additional Pay Item Notes :						

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission structures are poles or structures are 60 feet tall. There are several different kinds of transmission structures are transmission instructures. Transmission structures are transmission instructures are substations of transmission instructures. Transmission structures are unable poles or structures or a be single-circulated, carrying one set of transmission instructures are unable poles or structures or a be single-circulated, carrying one set of transmission instructures. Transmission structures are unable poles or substations or a beautiful pole. They can be single-circulated, are not be single-poled or multipoled. They can be single-circulated with two sets of lines. Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 0.07 miles of overhead transmission we will have approximately 2 structures. In a reas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or pole to the required. Poles with gow wires may be required. Pol

TOTAL SUBCONTRACTS

\$146.36

\$730.00

PAY ITEM COST DETAIL WORKSHEET

Additional Pay Item Notes :

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.062	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of Transmission Line No. 26-2	Group	: D05			
Quantity	:	0.07 MILE					
Daily Production	:	0.63 MILE per 10 hour shift	Project #	: 2			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	MILE per	Total Cost	Unit Price Per MILE
Unit Price	:	\$28,438.33 per MILE	Probable Low C	ost Parameter	0.71875	\$1,692	\$24,172.58
Total Cost	:	\$1,991	Probable High (Cost Parameter	0.46875	\$2,488	\$35.547.91

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.1	10	1.10	L	\$55.80	incl. in rate	incl. in rate	\$61.38
Electrician	Active	2.00	0.1	10	2.20	L	\$55.80	incl. in rate	incl. in rate	\$122.77
Truck, Utility, with Man-Basket	Active	2.00	0.1	10	2.20	E	\$31.90	incl. in rate	incl. in rate	\$70.18
Laborer	Active	2.00	0.1	10	2.20	L	\$51.07	incl. in rate	incl. in rate	\$112.36
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.10	E	\$205.40	incl. in rate	incl. in rate	\$225.94
Hydraulic Crane (80tn)	Active	1.00	0.1	10	1.10	E	\$197.66	incl. in rate	incl. in rate	\$217.43
Equipment Operator (crane)	Active	1.00	0.1	10	1.10	L	\$81.60	incl. in rate	incl. in rate	\$89.76
Equipment Operator (light)	Active	1.00	0.1	10	1.10	L	\$69.19	incl. in rate	incl. in rate	\$76.11
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	2.00	0.1	10	2.20	E	\$36.81	incl. in rate	incl. in rate	\$80.98

Labor Hours	7.7	TOTAL LABOR	\$462.38
Equipment Hours	6.6	TOTAL EQUIPMENT	\$594.53

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$23.12	\$23.12
F.E. loader, 1-1/2 C.Y., remove and stockpile on	26.00	CY	1.000	26.00	\$4.74	\$123.24

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high voltage					
line work - Rent per day	0.11	days		\$3,000.00	\$330.00
Hauling cost to Yreka Transfer 40 Miles	1.00	Loads	1 mile per load	\$400.00	\$400.00

UMMARY OF COSTS					
Labor Cost	\$462.38 L	abor Burden @	0.0%	\$0.00	
Material Cost	\$146.36 N	Material Tax @	7.75%	\$11.34	
Equipment Cost	\$594.53 E	Equipment Tax @	7.75%	\$46.08	
Subcontractors	\$730.00				
DIRECT COST SUBTOTALS	\$1,933			\$57	DIRECT COST SUBTOTALS

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission line poles or structures are constructures are constructures are constructures are constructures are proferred. They can be single-poled or multi-poled. They can be single-circuited, carrying one set of transmission inter double-circuited with two sets of lines. Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 0.07 miles of overhead transmission we will have approximately 2 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or gold by e required. Poles with guy wires may be required. Poles with guy wires may be required. Poles with guy wires may always and have a large concrete base. The base may be buried ten or more feet below the ground surface. The diameter of the pole and the depth the base is buried depends on the condition of the soils and the voltage of the line. Assumed the structures are disposed to Yreka recycling, 36 miles away. This estimate is made as the best AECOM assumption, as act

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.063	Project	: KRRP - Copco 1			
Description	:	Remove gate house #1 from top of dam	Group	: D11			
Quantity	:	720.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 2			
Work Days	:	0.6 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$15.23 per SF	Probable Low	Cost Parameter	1293.75	\$9,320	\$12.94
Total Cost	:	\$10,965	Probable High	Cost Parameter	843.75	\$13,706	\$19.04

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.23
Laborer	Active	4.00	0.6	10	24.00	L	\$51.07	incl. in rate	incl. in rate	\$1,225.75
Equipment Operator (medium)	Active	2.00	0.6	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.03
Hydraulic Excavator (5.0cy)	Active	1.00	0.6	10	6.00	E	\$276.50	incl. in rate	incl. in rate	\$1,659.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.6	10	6.00	E	\$63.11	incl. in rate	incl. in rate	\$378.66

Labor Hours	42	TOTAL LABOR	\$2,447.02
Equipment Hours	12	TOTAL EQUIPMENT	\$2,037.66

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

				TOTAL MATERIAL	\$0.00
SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount

 Dump Fee Conversion (SFXH*.33/27)
 106 CY
 Company
 Free
 Free
 All Conversion (SFXH*.33/27)
 Same of the conversion (SFXH*.33/27)
 106 CY
 Same of the conversion (SFXH*.33/27)
 Same of the conversion (SFX

			TOTAL SUBCONTRACTS	\$6,322.00
SUMMARY OF COSTS				
Labor Cost Material Cost Equipment Cost Subcontractors	\$2,447.02 Labor Burden @ \$0.00 Material Tax @ \$2,037.66 Equipment Tax @	0.0% 7.75% \$0.00 7.75% \$157.92		\$2,447.02 \$0.00 \$2,195.58 \$6,322.00
DIRECT COST SUBTOTALS Additional Pay Item Notes:	\$10,807	\$158	DIRECT COST SUBTOTALS	

\$0.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.064	Project	: KRRP - Copco 1			
Description	:	Remove gate house #2 from top of dam	Group	: D11			
Quantity	: [690.00 SF					
Daily Production	: [1,125.00 SF per 10 hour shift	Project #	: 2			
Work Days	: -	0.6 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$15.68 per SF	Probable Low	Cost Parameter	1293.75	\$9,194	\$13.32
Total Cost	:	\$10,817	Probable High	Cost Parameter	843.75	\$13,521	\$19.60

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
abor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.23
aborer	Active	4.00	0.6	10	24.00	L	\$51.07	incl. in rate	incl. in rate	\$1,225.75
quipment Operator (medium)	Active	2.00	0.6	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.03
ydraulic Excavator (5.0cy)	Active	1.00	0.6	10	6.00	E	\$276.50	incl. in rate	incl. in rate	\$1,659.00
pader, FE Rubber Tire (3.5cy)	Active	1.00	0.6	10	6.00	E	\$63.11	incl. in rate	incl. in rate	\$378.66

Labor Hours	42	TOTAL LABOR	\$2,447.02
Equipment Hours	12	TOTAL EQUIPMENT	\$2,037.66

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Dump Fee Coversion (SFXH*.33/27)	101 CY			
Conversion CY to Tons (2 tons per CY)	51.00 tons	Klamath County LandFill	\$74.00	\$3,774.00
Hauling cost to Yreka Transfer 40 Miles	6.00 Loads	18 CY per load	\$400.00	\$2,400.00

					TOTAL SUBCONTRACTS	\$6,174.00
SUMMARY OF COSTS						
	00.447.00	B + 0	0.00/			00.447.00
Labor Cost	\$2,447.02 Labo		0.0%			\$2,447.02
Material Cost	\$0.00 Mate	erial Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$2,037.66 Equi	ipment Tax @	7.75%	\$157.92		\$2,195.58
Subcontractors	\$6,174.00	•	•			\$6,174.00
DIRECT COST SUBTOTALS	\$10,659			\$158	DIRECT COST SUBTOTALS	\$10,817
Additional Pay Item Notes :					·	

\$5,206.83

PAY ITEM COST DETAIL WORKSHEET

MATERIAL COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.065	Project	: KRRP - Copco 1			
		Remove Concrete Items associated with 10 ft. di					
Description	:	Penstocks, reinf. Concrete	Group	: D07			
Quantity	:	1,050.00 cy					
Daily Production	:	128.00 cy per 10 hour shift	t Project #	: 2			
Work Days	:	8.2 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$90.80 per cy	Probable Low	Cost Parameter	147.2	\$81,037	\$77.18
Total Cost		\$05.337	Probable High	Cost Parameter	108.8	\$109.638	\$104.42

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.2	10	82.00	L	\$58.87	incl. in rate	incl. in rate	\$4,827.50
Laborer	Active	3.00	8.2	10	246.00	L	\$51.07	incl. in rate	incl. in rate	\$12,563.96
Equipment Operator (medium)	Active	2.00	8.2	10	164.00	L	\$72.34	incl. in rate	incl. in rate	\$11,863.10
Truck Driver (heavy)	Active	1.00	8.2	10	81.55	L	\$66.92	incl. in rate	incl. in rate	\$5,457.65
Air Compressor 600 cfm	Active	1.00	8.2	10	82.00	E	\$21.74	incl. in rate	incl. in rate	\$1,782.59
Air Tool, Chipping Hammer	Active	1.00	8.2	10	82.00	E	\$2.23	incl. in rate	incl. in rate	\$182.86
Acetylene Torches	Active	1.00	8.2	10	82.00	E	\$0.44	incl. in rate	incl. in rate	\$36.08
Hydraulic Excavator (2.5cy)	Active	1.00	8.2	10	82.00	E	\$205.40	incl. in rate	incl. in rate	\$16,842.80
Loader, FE Rubber Tire (3.5cy)	Active	1.00	8.2	10	82.00	E	\$63.11	incl. in rate	incl. in rate	\$5,175.02
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	8.2	10	81.55	E	\$57.41	incl. in rate	incl. in rate	\$4,681.79
Cobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	8.2	10	82.00	Е	\$89.29	incl. in rate	incl. in rate	\$7,321.78
						1				
				Labor Hours	574				TOTAL LABOR	\$34,712.22
			Eq	uipment Hours	574				TOTAL EQUIPMENT	\$36,022.92

Description	item	Oraer	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (15% labor)	1.00	LS	1.000	1.00	\$5,206.83	\$5,206.83

Description	Quantity U	Inits No	tes / Unit		Contract or Quote
		Cor	npany Price		Amount
Concrete Saw Cutting	1 AL	Allo	wance \$15,000.00		\$15,000.00
Hauling cost to Yreka Transfer 40 Miles	3.00 Lo	oads 100 lb	s per CY \$400.00		\$1,200.00
				_	
				TOTAL SUBCONTRACTS	\$16,200.00

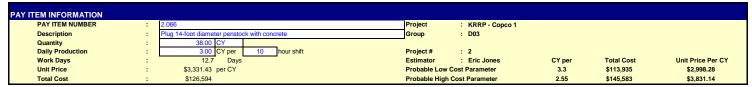
SUMMARY OF COSTS				
Labor Cost	\$34,712.22 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.		\$34,712.22
Material Cost	\$5,206.83 Material Tax @	7.75% \$403.53		\$5,610.36
Equipment Cost	\$36,022.92 Equipment Tax @	7.75% \$2,791.78		\$38,814.69
Subcontractors	\$16,200.00			\$16,200.00
DIRECT COST SUBTOTALS	\$92,142	\$3,195	DIRECT COST SUBTOTALS	\$95,337
Additional Pay Item Notes :				

2.065 Remove Concrete Items associated with 10 ft. diam. Penstocks, reinf. Concrete Details ligh Cost Factors Low Cost Factors Bad Weather Gas Price Increase Unforeseen Contaminated Mats/ Access Issues No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issue CY Per Hour Demolished Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) Overall Production 32 Haul Notes Excavator Loading Production per shift 1,050.00 CY per Hour 20.57 Swell Factor 0.60 CY Bucket Size 2.50 8.23 Haul Vehicle 60% Capacity (2 tons per CY) 7.20 # of Excavators 1.00 1.00 CY per Hour (2.5 CY Bucket) 20.57 # of Haul Vehicles Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) 5.00 CY Per Hour Ideal Production Per 8 Hour Shift Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) 3.00 Efficient Compared to Ideal Production 22% Haul Speed (Loaded MPH) 5.00 Inefficiencies Compared to Ideal Production 78% Return Speed (Unloaded MPH) 10.00 Haul Distance (Miles) 0.50 Shift Length (Hours) 10.00 Cycle Time Load Time (Load Time Minutes / 60mins) Breaker Production 0.08 Hydraulic Hammer CY per Hour Haul Time (Haul Distance / Haul Speed) 0.10 # of Hammers 1.00 12.8 Dump Time (Dump Time Minutes / 60 Mins) 0.05 CY per Hour Dump I IIMe (Dump Time Minutes / 60 Mins) Return Time (Heal Distance / Return Speed) Hours Per Cycle Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles (Bulk CY/ (Heal Vehicle Cap X of Heal Vehicles) Total Number of Heal Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Rumber of Cycles / Total Number of Haul Hours) Number of Haul Days 12.8 32 40% 0.05 CY per Hour Back Che 0.28 32CY per HR per 8hr s 0.28 32CY per HR per 8hr shift (Ideal prod) 80% Efficient Compared to Ideal Production 0.35 Inefficiencies Compared to Ideal Production 233 81.55 2.86 8.155

Other Notes
This paylitem is to remove the concrete items associated with the penstock. The efficiency of the operations has been reduced to account for access issues. It is expected that majoriy of concrete will be process during the demolition process and the steel will be divided with a magnet attachment on a concrete crusher. I operator will operate crusher and I operator will operate excavator loading trucks.

\$33,562.94

TOTAL MATERIAL



Carpenters Active 2.00 12.7 10 254.00 L \$85.49 incl. in rate incl. in ra	Cost \$10,857.48 \$21,714.97 \$19,694.91 \$10,362.95
Carpenters Active 2.00 12.7 10 254.00 L \$85.49 incl. in rate incl. in ra	\$21,714.97 \$19,694.91
Carpenters, Journeyman Active 2.00 12.7 10 254.00 L \$77.54 incl. in rate incl. in rate Equipment Operator (crane) Active 2.00 6.4 10 127.00 L \$81.60 incl. in rate incl. in rate	\$19,694.91
Equipment Operator (crane) Active 2.00 6.4 10 127.00 L \$81.60 incl. in rate incl. in rate	
	\$10,362.95
Equipment Operator (light) Active 2.00 2.0 10 40.00 L \$60.19 inclining inclining	
Equipment Operator (ngm) Active 2.00 2.00 10 10. In rate	\$2,767.60
Hydraulic Crane (80tn) Active 1.00 6.4 10 63.50 E \$197.66 incl. in rate incl. in rate	\$12,551.41
Conc Pump (small) Active 1.00 2.0 10 20.00 E \$121.58 incl. in rate incl. in rate	\$2,431.60
Steelworker Active 2.00 5.0 10 100.00 L \$78.16 incl. in rate incl. in rate	\$7,815.50
Welder, Portable Active 1.00 12.7 10 127.00 E \$7.84 incl. in rate incl. in rate	\$995.36

Labor Hour	902	TOTAL LABOR	\$73,213.40
Equipment Hour	210.5	TOTAL EQUIPMENT	\$15,978.37

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
Concrete	38.00	CY	1.100	41.80	\$159.23	\$6,655.81
Reinforcement (At 90lbs per CY)	1.71	Ton	1.100	1.88	\$1,000.00	\$1,881.00
Formwork Allowance (20% of Labor)	1.00	LS	1.100	1.10	\$14,642.68	\$16,106.95
Consumables (10% of Equip & Labor)	1.00	LS	1.000	1.00	\$8,919.18	\$8,919.18

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Amount

TOTAL SUBCONTRACTS \$0.00

\$73,213.40 L	_abor Burden @	0.0%			\$73,213.40
\$33,562.94	Material Tax @	7.75%	\$2,601.13		\$36,164.07
\$15,978.37	Equipment Tax @	7.75%	\$1,238.32		\$17,216.70
\$0.00					\$0.00
\$122,755			\$3,839	DIRECT COST SUBTOTALS	\$126,594
	\$33,562.94 \$15,978.37 \$0.00	<u> </u>	\$33,562.94 Material Tax @ 7.75% \$15,978.37 Equipment Tax @ 7.75% \$0.00	\$33,562.94 Material Tax @ 7.75% \$2,601.13 \$15,978.37 Equipment Tax @ 7.75% \$1,238.32	\$33,562.94 Material Tax @ 7.75% \$2,601.13 \$15,978.37 Equipment Tax @ 7.75% \$1,238.32

8 man crew will construct plug in the dry rough 5 days of construction to plug each side for a total of 10 days. Expect 6* pump will be needed day and night entire duration to control water during construction of plugs.

2.066 Plug 14-foot diameter penstock with concrete Details High Cost Factors Low Cost Factors 0% Bad Weather No Bad Weather Gas Price Increase Unforeseen Contaminated Mats/ Access Issues 5% 10% Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues 5% 5%

Production Per Hour	Hours	Overall Production	
	0.3	8	2.4
		10	3

Production & Sequence Notes

Froduction & Sequence Notes

The Plug is expected to be formed in two sections. The inner section will be formed and braced off of the tunnel walls. After the inner form (set form) is installed the face form will be built similar to the set form by bracing off of the tunnel walls. To ensure consolidation a high slump small aggregate mix will be used and concrete vibrators will have access through the Bat opening block out at the top. One 5 man crew will be used to construct the formwork, place the concrete, and strip the form work. One crew of 3 rodbusters will be used to tie and brace reinforcement. Expected duration is 5 days to form the plug, 2 days to pour the plug, 2 days to strip the plug. Crane will be used 1/2 of time to support crew by flying material close to plug location. A small pump will be used to install concrete. Please note the production is adjusted to account for the duration as listed above.

Other Notes

TOTAL SUBCONTRACTS

\$0.00

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	2.067	Project : KRRP - Copco 1			
Description	:	Remove & Dispose of 8 screens	Group : D03			
Quantity	:	18,000.00 LBS				
Daily Production	:	22,500.00 LBS per 10 hour shift	Project # : 2			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.11 per LBS	Probable Low Cost Parameter	24750	\$17,904	\$0.99
Total Cost	:	\$19,893	Probable High Cost Parameter	18000	\$23,872	\$1.33

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	4.00	0.8	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Crawler Crane (270tn)	Active	2.00	0.8	10	16.00	E	\$454.10	incl. in rate	incl. in rate	\$7,265.60
Equipment Operator (medium)	Active	2.00	0.8	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Welder	Active	2.00	0.8	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.44
Gas Welding Machine	Active	2.00	0.8	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Steelworker	Active	6.00	0.8	10	48.00	L	\$78.10	incl. in rate	incl. in rate	\$3,748.80
Truck, Flatbed (4x4, 10,000 gvw)	Active	4.00	0.8	10	32.00	E	\$27.09	incl. in rate	incl. in rate	\$866.88
Truck Driver (heavy)	Active	4.00	0.8	10	32.00	L	\$75.72	incl. in rate	incl. in rate	\$2,423.17

Labor Hours	144	TOTAL LABOR	\$9,881.08
Equipment Hours	80	TOTAL EQUIPMENT	\$8,303.95

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
1	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$988.11	\$988.11

	TOTAL MATERIAL	\$988.11
SURCONTRACT COSTS		

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount

SUMMARY OF COSTS					
Labor Cost	\$9,881.08 Labor Burden @	0.0%	\$0.00		\$9,881.08
Material Cost	\$988.11 Material Tax @	7.75%	\$76.58		\$1,064.69
Equipment Cost	\$8,303.95 Equipment Tax	@ 7.75%	\$643.56		\$8,947.51
Subcontractors	\$0.00				\$0.00
DIRECT COST SUBTOTALS	\$19,173		\$720	DIRECT COST SUBTOTALS	\$19,893
Additional Pay Item Notes :					

Production based on crew 1 Forman, 2 Steelworkers and 1 Welder to cut and attach hooks to the gate for disposal, 4 Laborers to rigging wire rope slings, 1 Electrician to provide power for tools, 1 Truck for 2 screens. Assuming 1 day of work.

\$2,013.19

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.068	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 8 Water Gates	Group	: D03			
Quantity	:	18,000.00 LBS					
Daily Production	:	22,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.03 per LBS	Probable Low 0	Cost Parameter	24750	\$16,649	\$0.92
Total Cost	:	\$18,499	Probable High (Cost Parameter	18000	\$22,198	\$1.23

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	4.00	8.0	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Crawler Crane (270tn)	Active	2.00	8.0	10	16.00	E	\$454.10	incl. in rate	incl. in rate	\$7,265.60
Equipment Operator (medium)	Active	2.00	8.0	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Welder	Active	2.00	0.8	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.44
Gas Welding Machine	Active	2.00	8.0	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Steelworker	Active	2.00	0.8	10	16.00	L	\$78.10	incl. in rate	incl. in rate	\$1,249.60
Truck, Flatbed (4x4, 10,000 gvw)	Active	4.00	0.8	10	32.00	E	\$27.09	incl. in rate	incl. in rate	\$866.88
Truck Driver (heavy)	Active	4.00	0.8	10	32.00	L	\$75.72	incl. in rate	incl. in rate	\$2,423.17

Labor Hours	112	TOTAL LABOR	\$7,381.88
Equipment Hours	80	TOTAL EQUIPMENT	\$8,303.95

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$738.19	\$738.19
Selective demolition, torch cutting, steel, 1" thick plate (assumption)	1,500.00	LF	1.000	1,500.00	\$0.85	\$1,275.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Drice	Amount

TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$7,381.88 Labor	or Burden @	0.0%	\$0.00		\$7,381.88
Material Cost	\$2,013.19 Mater	erial Tax @	7.75%	\$156.02		\$2,169.21
Equipment Cost	\$8,303.95 Equip	ipment Tax @	7.75%	\$643.56		\$8,947.51
Subcontractors	\$0.00	_				\$0.00
DIRECT COST SUBTOTALS	\$17,699			\$800	DIRECT COST SUBTOTALS	\$18,499
Additional Pay Item Notes :						

Production based on crew 1 Forman, 2 Steelworkers and 1 Welder to cut and attach hooks to the gate for disposal, 4 Laborers to rigging wire rope slings, 1 Electrician to provide power for tools, 1 Truck for 2 gates. Assuming 1 day of work.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.069	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 3 - 30" Dia. x 25' stand pipes	Group	: D03			
Quantity	:	6,000.00 LBS	='				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.83 per LBS	Probable Low Co	ost Parameter	8250	\$4,469	\$0.74
Total Cost	:	\$4,966	Probable High C	ost Parameter	6000	\$5,959	\$0.99

#in Crew Worke 1.00 0.8 2.00 0.8 1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8 Constant of the constant			L/E E L L L	Hourly Rate \$117.77 \$51.07 \$65.82 \$27.09 \$88.87 \$81.60 \$78.10	Hrly oper. Cost incl. in rate	Burden Rate incl. in rate ord. in rate incl. in rate ord. in rate incl. in rate	\$0.99 Labor / Equipment Cost \$94 \$81 \$52 \$21 \$47 \$65 \$1,24 \$3,71 \$1,15
crew Worke 1.00 0.8 2.00 0.8 1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8	Labor Hour	8.00 16.00 8.00 8.00 8.00 8.00 16.00	E L L E L	Rate \$117.77 \$51.07 \$65.82 \$27.09 \$58.87 \$81.60 \$78.10	Cost incl. in rate	Rate incl. in rate TOTAL LABOR	Cost \$94 \$81 \$52 \$21 \$47 \$65 \$1,24
crew Worke 1.00 0.8 2.00 0.8 1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8	Labor Hour	8.00 16.00 8.00 8.00 8.00 8.00 16.00	E L L E L	Rate \$117.77 \$51.07 \$65.82 \$27.09 \$58.87 \$81.60 \$78.10	Cost incl. in rate	Rate incl. in rate TOTAL LABOR	Cost \$94 \$81 \$52 \$21 \$47 \$65 \$1,24
2.00 0.8 1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8	10 10 10 10 10 10 10 Labor Hour	16.00 8.00 8.00 8.00 8.00 16.00	L L E L	\$51.07 \$65.82 \$27.09 \$58.87 \$81.60 \$78.10	incl. in rate	incl. in rate	\$81 \$52 \$21 \$47 \$65 \$1,24
1.00 0.8 1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8	10 10 10 10 10 Labor Hour Equipment Hour	8.00 8.00 8.00 8.00 16.00	L E L	\$65.82 \$27.09 \$58.87 \$81.60 \$78.10	incl. in rate	incl. in rate	\$52 \$21 \$47 \$65 \$1,24
1.00 0.8 1.00 0.8 1.00 0.8 2.00 0.8	10 10 10 10 Labor Hour Equipment Hour	8.00 8.00 8.00 16.00	E L L	\$27.09 \$58.87 \$81.60 \$78.10	incl. in rate incl. in rate incl. in rate incl. in rate	incl. in rate TOTAL LABOR	\$21 \$47 \$65 \$1,24 \$3,71 \$1,15
1.00 0.8 1.00 0.8 2.00 0.8	10 10 10 Labor Hour Equipment Hour	8.00 8.00 16.00	L L	\$58.87 \$81.60 \$78.10	incl. in rate incl. in rate incl. in rate	incl. in rate incl. in rate incl. in rate incl. in rate	\$47 \$65 \$1,24 \$3,71 \$1,15
1.00 0.8 2.00 0.8	10 10 Labor Hour Equipment Hour	8.00 16.00	L	\$81.60 \$78.10	incl. in rate incl. in rate	incl. in rate incl. in rate	\$65 \$1,24 \$3,71 \$1,15
2.00 0.8	10 Labor Hour Equipment Hour	16.00		\$78.10	incl. in rate	incl. in rate	\$1,24 \$3,71 \$1,15
2.00 0.8	10 Labor Hour Equipment Hour	rs 56 rs 16		\$78.10		incl. in rate	\$1,24 \$3,71 \$1,15
Order	Equipment Hour	rs 16		Order	Ţ		\$1,15
Order	Equipment Hour	rs 16		Order	Т		\$1,15
Order		_		Order	Т	OTAL EQUIPMENT	
Order	Conversion	Order		Order			Material
Order	Conversion	Order		Order			Material
						TOTAL MATERIAL	\$
Units	Notes /		Unit				Contract or Quote
	Company		Price				Amount
					ТОТАІ	SUBCONTRACTS	\$
Labor Burden @	0.09	% \$0.0	0				\$3,71
Material Tax @	7.75%	% \$0.0	0				
Equipment Tax @							\$1,24
J							(
						-	
		\$9	0		DIRECT	COST SUBTOTALS	
		\$9	0		DIRECT	COST SUBTOTALS	
	to load the pipe in the truck.	\$9	0		DIRECT	COST SUBTOTALS	\$4
P	Material Tax @	Material Tax @ 7.75	Material Tax @ 7.75% \$0.0	Material Tax @ 7.75% \$0.00	Material Tax @ 7.75% \$0.00	Labor Burden @ 0.0% \$0.00 Material Tax @ 7.75% \$0.00	Material Tax @ 7.75% \$0.00

\$17,944.73

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.071	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 10' Dia. penstock pipe	Group	: D03			
Quantity	:	270,000.00 LBS	_				
Daily Production	:	30,300.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	8.9 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.05 per LBS	Probable Low Co	ost Parameter	34845	\$240,353	\$0.89
Total Cost	:	\$282,769	Probable High Co	ost Parameter	22725	\$353,461	\$1.31

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	8.9	10	89.00	L	\$58.87	incl. in rate	incl. in rate	\$5,239.61
Laborer	Active	4.00	8.9	10	356.00	L	\$51.07	incl. in rate	incl. in rate	\$18,181.99
Steelworker	Active	2.00	8.9	10	178.00	L	\$78.10	incl. in rate	incl. in rate	\$13,901.80
Equipment Operator (crane)	Active	2.00	8.9	10	178.00	L	\$81.60	incl. in rate	incl. in rate	\$14,524.44
Equipment Operator (medium)	Active	2.00	8.9	10	178.00	L	\$72.34	incl. in rate	incl. in rate	\$12,875.81
Crawler Crane (90tn)	Active	1.00	8.9	10	89.00	E	\$211.22	incl. in rate	incl. in rate	\$18,798.58
Crawler Crane (270tn)	Active	1.00	8.9	10	89.00	E	\$454.10	incl. in rate	incl. in rate	\$40,414.90
Loader, FE Rubber Tire (5.25cy)	Active	1.00	8.9	10	89.00	E	\$76.00	incl. in rate	incl. in rate	\$6,764.00
Hydraulic Excavator (5.0cy)	Active	1.00	8.9	10	89.00	Е	\$276.50	incl. in rate	incl. in rate	\$24,608.50
Boomlift (JLG 60')	Active	2.00	8.9	10	178.00	E	\$52.87	incl. in rate	incl. in rate	\$9,410.86
Acetylene Torches	Active	4.00	8.9	10	356.00	Е	\$0.47	incl. in rate	incl. in rate	\$167.32
Air Compressor 600 cfm	Active	2.00	8.9	10	178.00	Е	\$21.74	incl. in rate	incl. in rate	\$3,869.72
Generator, Small Generator, 10 - 15 kW	Active	2.00	8.9	10	178.00	Е	\$7.04	incl. in rate	incl. in rate	\$1,253.12
Hepa Vac System	Active	4.00	8.9	10	356.00	Е	\$0.47	incl. in rate	incl. in rate	\$167.32
				Labor Hours	979				TOTAL LABOR	\$64,723.65
				Equipment Hours	1602			т	OTAL EQUIPMENT	\$105,454.32

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (saw blades, drill bits, orch gas, etc)	1.00	LS	1.000	1.00	\$12,944.73	\$12,944.7
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Access Allowance at Klamath River	1	AL		\$50.00	\$50.00
Hazardous waste cleanup/pickup/disposal, solid	40.50			Acc 00	\$0.000 F0
pickup, bulk material, maximum (10% of total)	13.50	ton		\$595.00	\$8,032.50
Hauling Disposal Cost	45.00	Loads	20 tons a load	\$600.00	\$27,000.00
Shoring Allowance	1	AL		\$50,000.00	\$50,000.00
				TOTAL SUI	SCONTRACTS \$85,082.50

SUMMARY OF COSTS					
Labor Cost	\$64,723.65 Labor Burden	@ 0.0%	\$0.00		\$64,723.65
Material Cost	\$17,944.73 Material Tax @	7.75%	\$1,390.72		\$19,335.45
Equipment Cost	\$105,454.32 Equipment Tax	¢ @ 7.75%	\$8,172.71		\$113,627.03
Subcontractors	\$85,082.50	' <u>'</u>			\$85,082.50
DIRECT COST SUBTOTALS	\$273,205		\$9,563	DIRECT COST SUBTOTALS	\$282,769
Additional Pay Item Notes :					

This pay item is to demolish penstock and haul off site. This activity is expected to be 60% efficient to account for prepping sections of the pipe for cutting due to coating, staff breaks, equipment maintenance, temp shoring, equipment repositioning, haul road adjustment, and ect. Currently we are expecting to have 14 each 20K lb loads of penstock. Each pipe length is expected to be roughly 21' long. A 90 ton crawler crane will be rigged to the 21' long cut pipe and once cut it will track near loading location. 130 ton crawler crane will be used as a support crane / hold crane for the adjacent pipe section. A shoring allowance has been added for potential sag areas depending where the penstock is cut. Hauling is expected to cost more than typical disposal hauling due to the access restrictions and potential hauling permits.

		2.071 Remove & Dispose of 10' Dia. penstock pipe	
		Details Details	
High Cost Factors		Low Cost Factors	
Bad Weather	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	15%	No Unforeseen Contaminated Mats/ Access Issues	5%
	25%		15%

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
5,000	.00	8	60%	24000
5,050	.00	10	60%	30300

Total Lbs	270,000.00	
Assumed Pipe Thickness is 3/4" thick	0.75	
10' diameter pipe		
lbs per ft Total LF	957	20000 20.89864159
Total LF	282.13	
Each Piece at 20k length	21	
Number of pieces	14.00	

\$17,217.50

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.070	Project	: KRRP - Copco 1			
Description	:	Remove & Dispose of 14' Dia. penstock pipe	Group	: D03			
Quantity	:	256,000.00 LBS	 '				
Daily Production	:	30,300.00 LBS per 10 hour shift	Project #	: 2			
Work Days	:	8.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.38 per LBS	Probable Low C	ost Parameter	34845	\$300,219	\$1.17
Total Cost	:	\$353,199	Probable High C	ost Parameter	24240	\$423,839	\$1.66

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.4	10	84.00	L	\$58.87	incl. in rate	incl. in rate	\$4,945.25
Laborer	Active	4.00	8.4	10	336.00	L	\$51.07	incl. in rate	incl. in rate	\$17,160.5
Steelworker	Active	2.00	8.4	10	168.00	L	\$78.10	incl. in rate	incl. in rate	\$13,120.80
Equipment Operator (crane)	Active	2.00	8.4	10	168.00	L	\$81.60	incl. in rate	incl. in rate	\$13,708.46
Equipment Operator (medium)	Active	2.00	8.4	10	168.00	L	\$72.34	incl. in rate	incl. in rate	\$12,152.45
Crawler Crane (90tn)	Active	1.00	8.4	10	84.00	E	\$211.22	incl. in rate	incl. in rate	\$17,742.48
Crawler Crane (270tn)	Active	1.00	8.4	10	84.00	E	\$454.10	incl. in rate	incl. in rate	\$38,144.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	8.4	10	84.00	E	\$76.00	incl. in rate	incl. in rate	\$6,384.00
Hydraulic Excavator (5.0cy)	Active	1.00	8.4	10	84.00	E	\$276.50	incl. in rate	incl. in rate	\$23,226.00
Boomlift (JLG 60')	Active	2.00	8.4	10	168.00	E	\$52.87	incl. in rate	incl. in rate	\$9,410.86
Acetylene Torches	Active	4.00	8.4	10	336.00	E	\$0.47	incl. in rate	incl. in rate	\$167.32
Air Compressor 600 cfm	Active	2.00	8.4	10	168.00	E	\$21.74	incl. in rate	incl. in rate	\$3,869.72
Generator, Small Generator, 10 - 15 kW	Active	2.00	8.4	10	168.00	E	\$7.04	incl. in rate	incl. in rate	\$1,253.12
Hepa Vac System	Active	4.00	8.4	10	336.00	Е	\$0.47	incl. in rate	incl. in rate	\$167.32
				Labor Hours	924			•	TOTAL LABOR	\$61,087.49
				Equipment Hours	1512				TOTAL EQUIPMENT	\$100,365.22

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$12,217.50	\$12,217.50
HEPA Vac Systems For Grinders Handheld Grinders	4.00 4.00	EA EA	1.000 1.000	4.00 4.00	\$1,000.00 \$250.00	\$4,000.00 \$1,000.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Access Allowance at Klamath River	1	AL		\$100,000.00	\$100,000.00
Hazardous waste cleanup/pickup/disposal, solid					
pickup, bulk material, maximum (10% of total)					
	12.80	ton		\$595.00	\$7,616.00
Hauling Disposal Cost	13.00	Loads	20 tons a load	\$600.00	\$7,800.00
Shoring Allowance	1	AL		\$50,000.00	\$50,000.00
					TOTAL SUBCONTRACTS \$165,416,00

SUMMARY OF COSTS					
Labor Cost	\$61,087.49 Labor Burden @	0.0%	\$0.00		\$61,087
Material Cost	\$17,217.50 Material Tax @	7.75%	\$1,334.36		\$18,551
Equipment Cost	\$100,365.22 Equipment Tax @	7.75%	\$7,778.30		\$108,143
Subcontractors	\$165,416.00				\$165,416
DIRECT COST SUBTOTALS	\$344,086		\$9,113	DIRECT COST SUBTOTALS	\$353,1
Additional Pay Item Notes :					

This pay item is to demolish penstock and haul off site. This activity is expected to be 60% efficient to account for prepping sections of the pipe for cutting due to coating, staff breaks, equipment maintenance, temp shoring, equipment repositioning, haul road adjustment, and ect. Currently we are expecting to have 13 each 20K ib loads of penstock. Each pipe length is expected to be roughly 21' long. A 90 ton crawler crane will be rigged to the 21' long cut pipe and once cut it will track near loading location. 130 ton crawler crane will be used as a support crane/ hold crane for the adjacent pipe section. A shoring allowance has been added for potential sag areas depending where the penstock is cut. Hauling is expected to cost more than typical disposal hauling due to the access restrictions and potential hauling permits.

		2.070 Remove & Dispose of 14' Dia. penstock pipe Details	
High Cost Factors		Low Cost Factors	
Bad Weather	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Issues	5%
	20%		15%

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
5,00	00.00	8	60%	24000
5,05	50.00	10	60%	30300

Total Lbs	256,000.00		
Assumed Pipe 1	sickness is 3/4" thick 0.75		
14' diameter pip			
lbs per ft Total LF	1350	20000	15
Total LF	190.00		
Each Piece at 3	length 15		
Number of piece	13.00		

AY ITEM INFORMATION												
PAY ITEM NUMBER	:	2.081	Project	: KRRP - Copco 1								
Description	:	Site work - Clear and Grub Disposal Area	Group	: D12								
Quantity	:	4.00 AC										
Daily Production	:	2.00 AC per 10 hour shift	Project #	: 2								
Work Days	:	2.0 Days	Estimator	: Eric Jones	AC per	Total Cost	Unit Price Per AC					
Unit Price	:	\$5,226.11 per AC	Probable Low	Cost Parameter	2.3	\$17,769	\$4,442.19					
Total Cost	:	\$20,904	Probable High	Cost Parameter	1.6	\$25,085	\$6,271.33					

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
2000. ip.io.i	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	4.00	2.0	10	80.00	L	\$51.07	incl. in rate	incl. in rate	\$4,085.84
Equipment Operator (medium)	Active	2.00	2.0	10	40.00	L	\$72.34	incl. in rate	incl. in rate	\$2,893.44
Truck Driver (heavy)	Active	2.00	2.0	10	40.00	L	\$66.92	incl. in rate	incl. in rate	\$2,676.96
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	2.0	10	40.00	E	\$57.41	incl. in rate	incl. in rate	\$2,296.40
Hydraulic Excavator (5.0cy)	Active	1.00	2.0	10	20.00	E	\$276.50	incl. in rate	incl. in rate	\$5,530.00
Chipper 600HP up to 22" diameter	Active	3.00	2.0	10	60.00		\$57.91			\$3,474.60
unipper occurr up to 22 citatricter	Active	3.00	2.0	10	60.00		ф37.91			\$5,474.00
				Labor Hours	180				TOTAL LABOR	\$10,833.68
				Equipment Hours	80				TOTAL EQUIPMENT	\$9,346.40

	Order	Conversion	Order	Order		Material
Quantity	Unit	Factor / Waste	Quantity	Price		Cost
					TOTAL MATERIAL	\$0.0
		otion Item Order Quantity Unit				

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$10,833.68 L	Labor Burden @	0.0%			\$10,833.68
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$9,346.40	Equipment Tax @	7.75%	\$724.35		\$10,070.75
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$20,180			\$724	DIRECT COST SUBTOTALS	\$20,904
Additional Pay Item Notes :						

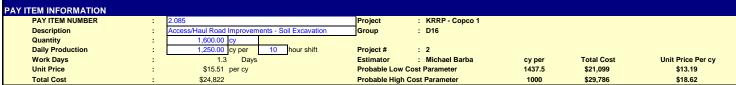
PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.082	Project :	KRRP - Copco 1			
Description	:	Sitework - Concrete Processing and Soil Cover for Disposal Area	Group :	D12			
Quantity	:	12,000.00 cy					
Daily Production	:	700.00 cy per 10 hour shift	Project # :	2			
Work Days	:	17.1 Days	Estimator :	Michael Barba	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$17.19 per cy	Probable Low Cost F	Parameter	770	\$185,694	\$15.47
Total Cost	:	\$206,327	Probable High Cost I	Parameter	630	\$226,960	\$18.91

Description : Quantity : Daily Production :	Sitework - Concre 12,000.00 700.00	су		Cover for Disposal Area hour shift	Group	: D12 : 2				
Daily Production : Work Days : Unit Price : Total Cost :	17.	per cy		nour Stillt	Project # Estimator Probable Low (Probable High	: Micha Cost Param		cy per 770 630	Total Cost \$185,694 \$226,960	Unit Price Per cy \$15.47 \$18.91
REW COSTS Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	17.1	10	171.00	E	\$205.40	incl. in rate	incl. in rate	\$35,123
abor Foreman	Active	1.00	17.1	10	171.00	L	\$58.87	incl. in rate	incl. in rate	\$10,067
aborer	Active	3.00	17.1	10	513.00	L	\$51.07	incl. in rate	incl. in rate	\$26,200
quipment Operator (medium)	Active	4.00	17.1	10	684.00	L	\$72.34	incl. in rate	incl. in rate	\$49,477
Oozer (235hp)(CATD7)	Active	1.00	17.1	10	171.00	Е	\$171.07	incl. in rate	incl. in rate	\$29,252
Grader, 180hp, 13' blade	Active	1.00	17.1	10	171.00	E	\$84.69	incl. in rate	incl. in rate	\$14,481
Ferex Track Crusher	Active	1.00	17.1	10	171.00	E	\$103.99	incl. in rate	incl. in rate	\$17,781
obelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	17.1	10	171.00	E	\$89.29	incl. in rate	incl. in rate	\$15,268
				Labor Hours					TOTAL LABOR	\$85,74 \$111,90
ATERIAL COSTS										
Description	Item Quantity	Order Unit		Conversion Factor / Waste	Order Quantity		Order Price			Material Cost
									TOTAL MATERIAL	\$0
	Quantity	Unite		Notes /		Unit				Contract or Quote
Description	Quantity	Ulits				Price				Amount
SUBCONTRACT COSTS Description	Quantity	Units		Notes / Company		Unit Price			TOTAL MATERIAL	
								то	TAL SUBCONTRACTS	
										•
JMMARY OF COSTS										
abor Cost laterial Cost	\$85,745.39	Labor Bu Material		0.0% 7.75%						\$85,745 \$1
quipment Cost	\$111,908.67		nt Tax @	7.75%						\$120,58°
ubcontractors	\$0.00			7.70%	\$0,01 E.0E					\$
ECT COST SUBTOTALS ditional Pay Item Notes :	\$197,654				\$8,673	3		DIRE	CT COST SUBTOTALS	\$206
Please see details sheet										

2.082 Sitework - Concrete Processing and Soil Cover for Disposal Area Details High Cost Factors Low Cost Factors 0% 10% 0% No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Gas Price Increase Unforeseen Contaminated Mats/ Access Issues

Production Per Hour		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Etc.)	Overall Production	
	100 8		70%	560
	10		70%	700
Track Crusher Production		Excavator Loading Production per shift		
CY per Hour	70.00	CY per Hour		70.00
Lbs per Hour (4050lbs per CF)	283,500.00	CY Bucket Size		2.50
Tons per Hour	142	Buckets Per Hour		28
# of Crushers	1.00	# of Excavators		1.00
Tons per hour	142	CY per Hour		70
Tons Per Hour Ideal Production Per 8 Hour Shift	300	Ideal Production		95
Efficient Compared to Ideal Production	47%	Efficient Compared to Ideal Production		74%
Inefficiencies Compared to Ideal Production	53%	Inefficiencies Compared to Ideal Production		26%
		Excavator Crusher Production		
		Hydraulic Hammer CY per Hour		70
		# of Hammers		1.00
		CY per Hour		70
		CY per Hour Back Check		70
		Ideal Production		150
		Efficient Compared to Ideal Production		47%
		Inefficiencies Compared to Ideal Production		53%

Other Notes
This estimate is to account for extra processing of the demolished concrete related to Copco 1 and spreading soil over disposal area. The estimate Estimate currently reflects using three pieces of equipment to support operation; a Kobelco excavator with a CP100 crusher/Magnet attachment, a Terex Track Crusher with a magnetic over belt, rebar deflector, and a rip stop belt, and a 2.5CY excavator. The Kobelco with the CP100 crusher will break concrete into manageable pieces for the 5CY excavator to load into the Crusher. The CP100 crusher will have a magnet attachment to remove any lose reinforcement. The crusher production is expected to drive the operations duration and the overall operation is expected to be 70% efficient to account for equipment maintenance, staff breaks, equipment repositioning, etc.. Reinforcement haul off has been accounted for in the other concrete demolition items. The soil cover material is expected to come from stripping the topsoil at the disposal area. The soil cover operation will be completed using a dozer and a grader.



					. obabio ingn	Cost Parar	iletei	1000	\$29,786	\$18.62
REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
ozer (310hp)(CATD8)	Active	2.00	1.3	10	26.00	Е	\$195.72	incl. in rate	incl. in rate	\$5,0
lydraulic Excavator (5.0cy)	Active	1.00	1.3	10	13.00	E	\$276.50	incl. in rate	incl. in rate	\$3,5
oader, FE Rubber Tire (5.25cy)	Active	2.00	1.3	10	26.00	E	\$76.00	incl. in rate	incl. in rate	\$1,9
ruck, Off-Road, Articulated Rear, 20cy	Active	2.00	1.3	10	26.00	E	\$117.28	incl. in rate	incl. in rate	\$3,0
quipment Operator (medium)	Active	4.00	1.3	10	52.00	L	\$72.34	incl. in rate	incl. in rate	\$3,7
quipment Operator (light)	Active	1.00	1.3	10	13.00	L	\$69.19	incl. in rate	incl. in rate	\$8
ruck Driver (heavy)	Active	2.00	1.3	10	26.00	L	\$75.72	incl. in rate	incl. in rate	\$1,9
aborer	Active	4.00	1.3	10	52.00	L	\$51.07	incl. in rate	incl. in rate	\$2,6
abor Foreman	Active	1.00	1.3	10	13.00	L	\$58.87	incl. in rate	incl. in rate	\$7
				Labor Hours	156	T			TOTAL LABOR	\$10,0
				Labor Hours Equipment Hours	156 91				TOTAL LABOR TOTAL EQUIPMENT	
ATERIAL COSTS										
ATERIAL COSTS Description	ltem	Order					Order			\$10,0 \$13,7 Material

					TOTAL MATERIAL	
SCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
			Сотрану			741104111
					TOTAL SUBCONTRACTS	

SUMMARY OF COSTS						
Labor Cost	\$10,050.90	Labor Burden @	0.0%	\$0.00		\$10,050.9
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$13,708.50	Equipment Tax @	7.75%	\$1,062.41		\$14,770.9
Subcontractors	\$0.00					\$0.0
DIRECT COST SUBTOTALS	\$23,759			\$1,062	DIRECT COST SUBTOTALS	\$24,82
Additional Pay Item Notes :						

This estimate is to improve existing and new haul roads to provide access to Copco1. This is mainly for grading/ creating dirt haul roads.

PAY ITEM COST DETAIL WORKSHEET 2.089 Mallard Cove - Concrete total

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.089	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - Concrete total	Group	: D16			
Quantity	:	106.00 CY					
Daily Production	:	53.00 CY per 10 hour shift	Project #	: 2			
Work Days	:	2.0 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$161.12 per CY	Probable Low	Cost Parameter	60.95	\$14,517	\$136.96
Total Cost	:	\$17,079	Probable High	Cost Parameter	45.05	\$19,641	\$185.29

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	2.0	10	20.00	Е	\$276.50	incl. in rate	incl. in rate	\$5,530.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.0
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	2.0	10	20.00	Е	\$57.41	incl. in rate	incl. in rate	\$1,148.2
Lhadendia Janeat Baratan Attacharent (2), 41, ft lls	Active	1.00	2.0	10	20.00	Е	\$36.81	incl. in rate	incl. in rate	\$736.2
Hydraulic Impact Breaker Attachment (3k-4k ft-lb) Truck Driver (heavy)	Active	1.00	2.0	10	20.00	L	\$66.92	incl. in rate	incl. in rate	\$1,338.4
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.4
Laborer	Active	2.00	2.0	10	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.9
Equipment Operator (medium)	Active	2.00	2.0	10	40.00	L	\$72.34	incl. in rate	incl. in rate	\$2,893.4
		·		Labor Hours	120				TOTAL LABOR	\$7,452.2

0				Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost

Equipment Hours

TOTAL EQUIPMENT

TOTAL MATERIAL

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	20.00

SUMMARY OF COSTS						
Labor Cost	\$7,452.28	Labor Burden @	0.0%			\$7,452.28
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$8,934.40	Equipment Tax @	7.75%	\$692.42		\$9,626.82
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$16,387			\$692	DIRECT COST SUBTOTALS	\$17,079
Additional Pay Item Notes :						

Excavator with breaker will be used to break up concrete and loader will be used to load the haul truck. The duration is a total of two days to account for mobilizing the demo equipment.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.090	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - 25'x5' Dock made of composite decking and po	ly floats Group	: D16			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,145.85 per EA	Probable Low	Cost Parameter	2.875	\$1,824	\$1,823.97
Total Cost	:	\$2.146	Probable High	Cost Parameter	2.125	\$2.468	\$2.467.72

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Crane (50tn)	Active	1.00	0.4	10	4.00	Е	\$136.20	incl. in rate	incl. in rate	\$544.80
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.4	10	4.00	Е	\$16.99	incl. in rate	incl. in rate	\$67.96
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$66.92	incl. in rate	incl. in rate	\$267.70
Equipment Operator (crane)	Active	1.00	0.4	10	4.00	L	\$81.60	incl. in rate	incl. in rate	\$326.39
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.4	10	4.00	E	\$57.41	incl. in rate	incl. in rate	\$229.64
				Labor Hours	20				TOTAL LABOR	\$1,238.16
				Equipment Hours	12				TOTAL EQUIPMENT	\$842.40

ERIAL COSTS Description	Item	Order	Conversion	Order	Order	Materia	
Description							
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
						TOTAL MATERIAL	,

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$1,238.16	Labor Burden @	0.0%			\$1,238.1
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$842.40	Equipment Tax @	7.75%	\$65.29		\$907.6
Subcontractors	\$0.00		•	-		\$0.0
RECT COST SUBTOTALS	\$2,081			\$65	DIRECT COST SUBTOTALS	\$2,14
dditional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER		2.091	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - 20'x5' Gangway w/ aluminum grate and railings	Group	: D16			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	: '	0.4 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,986.96 per EA	Probable Low	Cost Parameter	2.875	\$1,689	\$1,688.91
Total Cost	:	\$1,987	Probable High	n Cost Parameter	2.125	\$2,285	\$2,285.00

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Crane (50tn)	Active	1.00	0.4	10	4.00	E	\$136.20	incl. in rate	incl. in rate	\$544.80
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.4	10	4.00	E	\$32.06	incl. in rate	incl. in rate	\$128.24
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.4	10	4.00	E	\$16.99	incl. in rate	incl. in rate	\$67.96
Equipment Operator (light)	Active	1.00	0.4	10	4.00	L	\$69.19	incl. in rate	incl. in rate	\$276.76
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$66.92	incl. in rate	incl. in rate	\$267.70
				Labor Hours	20				TOTAL LABOR	\$1,188.53
				Equipment Hours	12				TOTAL EQUIPMENT	\$741.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$1,188.53	Labor Burden @	0.0%			\$1,188.53
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$741.00	Equipment Tax @	7.75%	\$57.43		\$798.43
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$1,930			\$57	DIRECT COST SUBTOTALS	\$1,987
Additional Pay Item Notes :						

This based on crane already being near location of the dock, 1 50ton crane to lift gangway and place on truck, 1 flat bed truck hauling all day to dispose of material, 2 laborers will be used to disassemble the gangway and rig gangway to crane, Foreman with truck will oversee operation.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.092	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - Signs to be removed and hauled away	Group	: D16			
Quantity	:	6.00 EA					
Daily Production	:	30.00 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.2 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$114.00 per EA	Probable Low	Cost Parameter	33	\$616	\$102.60
Total Cost	:	\$684	Probable High	Cost Parameter	27	\$752	\$125.40

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.2	10	2.00	Е	\$76.00	incl. in rate	incl. in rate	\$152.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.2	10	2.00	E	\$16.99	incl. in rate	incl. in rate	\$33.98
Equipment Operator (medium)	Active	1.00	0.2	10	2.00	L	\$72.34	incl. in rate	incl. in rate	\$144.67
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$58.87	incl. in rate	incl. in rate	\$117.74
Laborer	Active	2.00	0.2	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.29
Welder, Portable	Active	1.00	0.2	10	2.00	E	\$7.84	incl. in rate	incl. in rate	\$15.68
				Labor Hours	8				TOTAL LABOR	\$466.71
				Equipment Hours	6				TOTAL EQUIPMENT	\$201.66

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	** **
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$466.71	Labor Burden @	0.0%			\$466.71
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$201.66	Equipment Tax @	7.75%	\$15.63		\$217.28
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$668	-		\$16	DIRECT COST SUBTOTALS	\$684
Additional Pay Item Notes :						

Based on a 4 man crew removing signs with loader, material is expected to be loaded on either the gangway truck or the dock truck for disposal. This operation is expected to happen with the pay item 93.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.093	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - Wood plank tables to be removed and hauled away	Group	: D16			
Quantity	:	8.00 EA					
Daily Production	:	40.00 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.2 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$83.39 per EA	Probable Low (Cost Parameter	44	\$600	\$75.05
Total Cost		\$667	Probable High	Cost Parameter	36	\$734	\$91.73

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.2	10	2.00	E	\$76.00	incl. in rate	incl. in rate	\$152.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.2	10	2.00	E	\$16.99	incl. in rate	incl. in rate	\$33.98
Equipment Operator (medium)	Active	1.00	0.2	10	2.00	L	\$72.34	incl. in rate	incl. in rate	\$144.67
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$58.87	incl. in rate	incl. in rate	\$117.74
Laborer	Active	2.00	0.2	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.29
				Labor Hours	8				TOTAL LABOR	\$466.71
				Equipment Hours	4				TOTAL EQUIPMENT	\$185.98

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$466.71	Labor Burden @	0.0%			\$466.71
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$185.98	Equipment Tax @	7.75%	\$14.41		\$200.39
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$653	•		\$14	DIRECT COST SUBTOTALS	\$667
Additional Pay Item Notes :						

4 man crew will remove tables and load them on to either truck hauling dock or gangway. This activity will occur with pay item 92.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.094	Project	: KRRP - Copco 1			
Description	:	Mallard Cove - Parking area to be regraded	Group	: D16			
Quantity	:	2.50 AC					
Daily Production	:	1.25 AC per 10 hour shift	Project #	: 2			
Work Days	:	2.0 Days	Estimator	: Eric Jones	AC per	Total Cost	Unit Price Per AC
Unit Price	:	\$5,058.76 per AC	Probable Low Co	ost Parameter	1.375	\$11,382	\$4,552.88
Total Cost	:	\$12,647	Probable High C	ost Parameter	1.0625	\$14,544	\$5,817.57

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	3.00	2.0	10	60.00	L	\$51.07	incl. in rate	incl. in rate	\$3,064.38
Equipment Operator (medium)	Active	2.00	2.0	10	40.00	L	\$72.34	incl. in rate	incl. in rate	\$2,893.44
Dozer (235hp)(CATD7)	Active	1.00	2.0	10	20.00	E	\$171.07	incl. in rate	incl. in rate	\$3,421.40
Grader, 180hp, 13' blade	Active	1.00	2.0	10	20.00	E	\$84.69	incl. in rate	incl. in rate	\$1,693.80
				-		1			Г	
				Labor Hours	120				TOTAL LABOR	\$7,135.26
				Equipment Hours	40				TOTAL EQUIPMENT	\$5,115.20

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	** **
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.0

SUMMARY OF COSTS					
Labor Cost	\$7,135.26	Labor Burden @	0.0%		
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00	
Equipment Cost	\$5,115.20	Equipment Tax @	7.75%	\$396.43	
Subcontractors	\$0.00		-		
DIRECT COST SUBTOTALS	\$12,250	•		\$396	DIRECT COST SUBTOTALS
Additional Pay Item Notes :					

Production is based off of 12 man crew finishing .5 acres a shift, dozers will be regrading area, grader will be used to fine grade, tractors will be used to rip material for seeding, seed sprayers will use Idaho Fescue seed, water truck will continuously water area for 2 weeks.

2.095 Copco Cove - Concrete Total

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	1.7	10	17.00	Е	\$276.50	incl. in rate	incl. in rate	\$4,700.50
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.7	10	17.00	E	\$76.00	incl. in rate	incl. in rate	\$1,292.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	1.7	10	17.00	E	\$57.41	incl. in rate	incl. in rate	\$975.97
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	1.7	10	17.00	E	\$36.81	incl. in rate	incl. in rate	\$625.77
Truck Driver (heavy)	Active	1.00	1.7	10	17.00	L	\$66.92	incl. in rate	incl. in rate	\$1,137.71
Labor Foreman	Active	1.00	1.7	10	17.00	L	\$58.87	incl. in rate	incl. in rate	\$1,000.82
Laborer	Active	2.00	1.7	10	34.00	L	\$51.07	incl. in rate	incl. in rate	\$1,736.48
Equipment Operator (medium)	Active	2.00	1.7	10	34.00	L	\$72.34	incl. in rate	incl. in rate	\$2,459.42
				Labor Hours	102	1			TOTAL LABOR	\$6,334.4
				Equipment Hours	68				TOTAL EQUIPMENT	\$7,594.2

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	£0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$6,334.44	Labor Burden @	0.0%			\$6,334.4
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.
Equipment Cost	\$7,594.24	Equipment Tax @	7.75%	\$588.55		\$8,182.
Subcontractors	\$0.00					\$0.
IRECT COST SUBTOTALS	\$13,929			\$589	DIRECT COST SUBTOTALS	\$14,5
dditional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.096	Project	: KRRP - Copco 1			
Description	:	Copco Cove - Dock abutment railing made of 2.5" dia. steel pipe	Group	: D16			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,327.49 per EA	Probable Low	Cost Parameter	2.75	\$1,195	\$1,194.74
Total Cost	:	\$1,327	Probable High	Cost Parameter	2.25	\$1,460	\$1,460.24

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	1.00	0.4	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.29
Steelworker	Active	1.00	0.4	10	4.00	L	\$78.10	incl. in rate	incl. in rate	\$312.40
Truck Driver (light)	Active	1.00	0.4	10	4.00	L	\$65.82	incl. in rate	incl. in rate	\$263.30
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.4	10	4.00	E	\$117.28	incl. in rate	incl. in rate	\$469.12
				Labor Hours	12				TOTAL LABOR	\$779.99
				Equipment Hours	4				TOTAL EQUIPMENT	\$469.12
MATERIAL COSTS										
Description	Item	Order		Conversion	Order		Order			Material

			101				
MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$39.00		\$39.00
						TOTAL MATERIAL	\$39.0
_			<u>. </u>	•		·	

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount

SUMMARY OF COSTS						
Labor Cost	\$779.99	Labor Burden @	0.0%	\$0.00		\$779.99
Material Cost	\$39.00	Material Tax @	7.75%	\$3.02		\$42.02
Equipment Cost	\$469.12	Equipment Tax @	7.75%	\$36.36		\$505.48
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$1,288	_'		\$39	DIRECT COST SUBTOTALS	\$1,327
Additional Pay Item Notes :					-	
Assumed 1/2 day of work done by 1 Steelman	n to cut and 1 Laborer to loa	ad in the truck				

Assumed 1/2 day of work done by 1 Steelman to cut and 1 Laborer to load in the truck.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.097	Project	: KRRP - Copco 1			
Description	:	Copco Cove - Signs to be removed and hauled away	Group	: D16			
Quantity	:	6.00 EA					
Daily Production	:	15.00 EA per 10 hour shift	Project #	: 2			
Work Days	: '	0.4 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$290.01 per EA	Probable Low C	ost Parameter	16.5	\$1,566	\$261.01
Total Cost	:	\$1,740	Probable High C	ost Parameter	13.5	\$1,914	\$319.01

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
				/day						
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.4	10	4.00	Е	\$76.00	incl. in rate	incl. in rate	\$304.0
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.4	10	4.00	Е	\$32.06	incl. in rate	incl. in rate	\$128.24
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$66.92	incl. in rate	incl. in rate	\$267.70
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.4	10	4.00	E	\$16.99	incl. in rate	incl. in rate	\$67.96
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.34	incl. in rate	incl. in rate	\$289.34
				Labor Hours Equipment Hours	20				TOTAL LABOR	\$1,201.1 \$500.2

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit		Contract or Quote				
			Company	Price		Amount				
					TOTAL SUBCONTRACTS	\$0.00				

\$1,201.11	Labor Burden @	0.0%			\$1,201.11
\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
\$500.20	Equipment Tax @	7.75%	\$38.77		\$538.97
\$0.00	,				\$0.00
\$1,701			\$39	DIRECT COST SUBTOTALS	\$1,740
	\$0.00 \$500.20 \$0.00		\$0.00 Material Tax @ 7.75% \$500.20 Equipment Tax @ 7.75%	\$0.00 Material Tax @ 7.75% \$0.00 \$500.20 Equipment Tax @ 7.75% \$38.77	\$0.00 Material Tax @

Based on a 4 man crew removing signs with loader, extra time accounts for getting equipment to area, flatbed truck is expected to be used whole day to dispose material.

MATERIAL COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.098	Project	: KRRP - Copco 1			
Description	:	Copco Cove - Wood plank tables to be removed and hauled away	Group	: D16			
Quantity	:	2.00 EA					
Daily Production	:	30.00 EA per 10 hour shift	Project #	: 2			
Work Days	:	0.1 Days	Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$166.78 per EA	Probable Low	Cost Parameter	33	\$300	\$150.10
Total Cost	:	\$334	Probable High	Cost Parameter	27	\$367	\$183.45

CREW COSTS						. /=				
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.1	10	1.00	E	\$76.00	incl. in rate	incl. in rate	\$76.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.1	10	1.00	E	\$16.99	incl. in rate	incl. in rate	\$16.99
Equipment Operator (medium)	Active	1.00	0.1	10	1.00	L	\$72.34	incl. in rate	incl. in rate	\$72.34
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate	\$58.87
Laborer	Active	2.00	0.1	10	2.00	L	\$51.07	incl. in rate	incl. in rate	\$102.15
				Labor Hours	4				TOTAL LABOR	\$233.35
				Equipment Hours					TOTAL EQUIPMENT	\$92.9
				Equipment Hours					TOTAL EQUIPMENT	\$92.9

Description	Item	Order	Conversion	Order	Order		Material
Description							
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
		EA				
		EA				
i					TOTAL SUBCONTRACTS	\$0.0

SUMMARY OF COSTS						
Labor Cost	\$233.35	Labor Burden @	0.0%			\$233.3
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$92.99	Equipment Tax @	7.75%	\$7.21		\$100.2
Subcontractors	\$0.00					\$0.0
DIRECT COST SUBTOTALS	\$326			\$7	DIRECT COST SUBTOTALS	\$3
Additional Pay Item Notes :						

Base don four man crew taking 2 hours to remove and load tables. Tables to be loaded on same flatbed truck from pay item 97.

PAY ITEM COST DETAIL WORKSHEET 2.099 Copco Cove - Regrade

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.099	Project	: KRRP - Copco 1			
Description	:	Copco Cove - Regrade	Group	: D16			
Quantity	:	2.30 AC					
Daily Production	:	1.25 AC per 10 hour shift	Project #	: 2			
Work Days	:	1.8 Days	Estimator	: Eric Jones	AC per	Total Cost	Unit Price Per AC
Unit Price	:	\$5,368.26 per AC	Probable Low 0	Cost Parameter	1.375	\$11,112	\$4,831.44
Total Cost	:	\$12,347	Probable High	Cost Parameter	1.0625	\$14,199	\$6,173.50

Truck, On-Highway Dump (6x4, 12cy) Ad Grader, 180hp, 13' blade Ac Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn) Ac Truck, Pickup (4x4, 3/4tn) Ac	1.00 ctive	1.8 1.8	10 10 10	18.00 18.00 18.00	E E	\$82.58 \$57.41	incl. in rate	incl. in rate	\$1,486.44 \$1,033.38
Grader, 180hp, 13' blade Ac Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn) Ac Truck, Pickup (4x4, 3/4tn) Ac	ctive 1.00 ctive 1.00	1.8	10			\$57.41	incl. in rate	incl. in rate	\$1,033.38
Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn) Ac Truck, Pickup (4x4, 3/4tn) Ac	ctive 1.00			18.00	_				Ψ1,000.00
Truck, Pickup (4x4, 3/4tn)		1.8			E	\$84.69	incl. in rate	incl. in rate	\$1,524.42
	-6 4.00		10	18.00	E	\$76.79	incl. in rate	incl. in rate	\$1,382.22
	ctive 1.00	1.8	10	18.00	E	\$16.99	incl. in rate	incl. in rate	\$305.82
Truck Driver (heavy)	ctive 1.00	1.8	10	18.00	L	\$66.92	incl. in rate	incl. in rate	\$1,204.63
Labor Foreman (out)	ctive 1.00	1.8	10	18.00	L	\$58.87	incl. in rate	incl. in rate	\$1,059.70
Equipment Operator (medium)	ctive 3.00	1.8	10	54.00	L	\$72.34	incl. in rate	incl. in rate	\$3,906.14

Labor Hours	90	TOTAL LABOR	\$6,170.47
Equipment Hours	90	TOTAL EQUIPMENT	\$5,732.28
MATERIAL COSTS			

WATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
				•			
						TOTAL MATERIAL	\$0.00
						TOTAL WATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$6,170.47	Labor Burden @	0.0%			\$6,170.47
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$5,732.28	Equipment Tax @	7.75%	\$444.25		\$6,176.53
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$11,903	<u>-</u> '		\$444	DIRECT COST SUBTOTALS	\$12,347
Additional Pay Item Notes :						

Production is based off of 12 man crew finishing .5 acres a shift, dozers will be regrading area, grader will be used to fine grade, tractors will be used to rip material for seeding, seed sprayers will use Idaho Fescue seed, water truck will continuously water area for 2 weeks.

TOTAL SUBCONTRACTS

\$228,612.82

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	2.100	Project	: KRRP - Copco 1			
Description	:	Diversion Tunnel Lining (Reinforced Shotcrete)	Group	: D02			
Quantity	:	1.00 LS					
Daily Production	:	0.41 LS per 10 hour shift	Project #	: 2			
Work Days	:	7.0 Days	Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$228,612.82 per LS	Probable Lov	Cost Parameter	0.45375	\$205,752	\$205,751.54
Total Cost	:	\$228,613	Probable Hig	h Cost Parameter	0.350625	\$262,905	\$262,904.74

COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipmen
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
				Labor Hours	0				TOTAL LABOR	
				Equipment Hours	0				TOTAL EQUIPMENT	
						•				

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS											
Quantity	Units	Notes /	Unit	Contract or Quote							
		Company	Price	Amount							
1	LS	RSMs (569 CY @ \$401.78/CY)	\$228,612.82	\$228,612.82							
	Quantity 1		Company	Company Price							

SUMMARY OF COSTS			
Labor Cost	\$0.00 Labor Burden @	0.0%	
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00
Equipment Cost	\$0.00 Equipment Tax @	7.75%	\$0.00
Subcontractors	\$228,612.82	·	
DIRECT COST SUBTOTALS	\$228,613		\$0
Additional Pay Item Notes :			

Subcontract will reinforce and shotcrete diversion tunnels. This activity will be double shifted with two 10 hour shifts due to the California in water work restrictions.

PAY ITEM INFORMATION
PAY ITEM NUMBER Description Quantity Daily Production Group : D05 Project # : 2
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter 1.00 EA per 4.0 \$11,850.45 per EA Days EA per 1.15 Total Cost \$40,292 Unit Price Per EA \$10,072.88 Work Days Unit Price Probable High Cost Parameter \$15,405.58 **Total Cost** 0.7 \$61,622 \$47,402

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.0	10	40.00	L	\$58.87	incl. in rate	incl. in rate	\$2,354.8
Laborer	Active	1.00	4.0	10	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.9
Equipment Operator (crane)	Active	2.00	4.0	10	80.00	L	\$81.60	incl. in rate	incl. in rate	\$6,527.8
Equipment Operator (medium)	Active	1.00	4.0	10	40.00	L	\$72.34	incl. in rate	incl. in rate	\$2,893.
Electrician	Active	3.00	4.0	10	120.00	L	\$55.80	incl. in rate	incl. in rate	\$6,696.0
Steelworker	Active	1.00	4.0	10	40.00	L	\$78.10	incl. in rate	incl. in rate	\$3,124.0
Hydraulic Crane (80tn)	Active	2.00	4.0	10	80.00	E	\$197.66	incl. in rate	incl. in rate	\$15,812.8
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.0	10	40.00	E	\$76.00	incl. in rate	incl. in rate	\$3,040.0
Truck, Utility, with Man-Basket	Active	1.00	4.0	10	40.00	Е	\$31.90	incl. in rate	incl. in rate	\$1,276.
						_			_	
				Labor Hours	360				TOTAL LABOR	\$23,639
				Equipment Hours	160			Т	OTAL EQUIPMENT	\$20,128.
ATERIAL COSTS										
Description	Item	Order		Conversion Factor / Waste	Order Quantity		Order Price			Material Cost
	Quantity	Unit		Factor / waste	Quantity		FILLE			Cost

				TOTAL MATERIAL	\$1,181.97
211222122122					
SUBCONTRACT COSTS					
Description	Quantity Units				
		Company	Price		Amount
Hauling cost to landfill	4.00 Loads	18 CY per load	\$200.00		\$800.00
Description	Quantity Units	Notes / Company	Unit Price		Contract or Quote Amount

SUMMARY OF COSTS					
Labor Cost	\$23,639.44 Labor Burden @	0.0%	\$0.00		\$23,639.44
Material Cost	\$1,181.97 Material Tax @	7.75%	\$91.60		\$1,273.57
Equipment Cost	\$20,128.80 Equipment Tax @	7.75%	\$1,559.98		\$21,688.78
Subcontractors	\$800.00				\$800.00
DIRECT COST SUBTOTALS	\$45,750		\$1,652	DIRECT COST SUBTOTALS	\$47,402

Figuring it will take one day for each structure to be removed. Assuming that the structure will need to be cut into pieces for hauling. Hauling has being accounted for by an allowance line item.

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL SUBCONTRACTS

\$8,715.87

\$2,828.16

\$0.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.007	Project	: KRRP - Copco 1			
Description	:	Remove Power Circuit Breakers 69KV @Switchyard	Group	: D05			
Quantity	:	2.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 2			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$6,116.39 per EA	Probable Low C	ost Parameter	1.375	\$11,010	\$5,504.75
Total Cost	:	\$12,233	Probable High C	Cost Parameter	0.9375	\$15,291	\$7,645.49

Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Active	2.00	1.6	10	32.00	L	\$58.87	incl. in rate	incl. in rate	\$1,883.9
Active	2.00	1.6	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.7
Active	1.00	1.6	10	16.00	E	\$117.77	incl. in rate	incl. in rate	\$1,884.3
Active	1.00	1.6	10	16.00	L	\$81.60	incl. in rate	incl. in rate	\$1,305.5
Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.3
Active	1.00	1.6	10	16.00	E	\$27.09	incl. in rate	incl. in rate	\$433.44
Active	1.00	1.6	10	16.00	E	\$31.90	incl. in rate	incl. in rate	\$510.40
Active	2.00	1.6	10	32.00	L	\$65.82	incl. in rate	incl. in rate	\$2,106.3
	Active	Idle crew Active 2.00 Active 2.00 Active 1.00 Active 1.00 Active 2.00 Active 1.00 Active 1.00 Active 1.00	Idle crew Worked Active 2.00 1.6 Active 2.00 1.6 Active 1.00 1.6 Active 1.00 1.6 Active 2.00 1.6 Active 1.00 1.6 Active 1.00 1.6	Idle crew Worked /day Active 2.00 1.6 10 Active 2.00 1.6 10 Active 1.00 1.6 10 Active 1.00 1.6 10 Active 2.00 1.6 10 Active 1.00 1.6 10 Active 1.00 1.6 10	Idle crew Worked /day Hours Active 2.00 1.6 10 32.00 Active 2.00 1.6 10 32.00 Active 1.00 1.6 10 16.00 Active 1.00 1.6 10 16.00 Active 2.00 1.6 10 32.00 Active 1.00 1.6 10 16.00 Active 1.00 1.6 10 16.00	Idle crew Worked /day Hours Active 2.00 1.6 10 32.00 L Active 2.00 1.6 10 32.00 L Active 1.00 1.6 10 16.00 E Active 1.00 1.6 10 16.00 L Active 2.00 1.6 10 32.00 L Active 1.00 1.6 10 16.00 E Active 1.00 1.6 10 16.00 E	Idle crew Worked /day Hours Rate Active 2.00 1.6 10 32.00 L \$58.87 Active 2.00 1.6 10 32.00 L \$55.80 Active 1.00 1.6 10 16.00 E \$117.77 Active 1.00 1.6 10 16.00 L \$81.60 Active 2.00 1.6 10 32.00 L \$51.07 Active 1.00 1.6 10 16.00 E \$27.09 Active 1.00 1.6 10 16.00 E \$31.90	Idle crew Worked /day Hours Rate Cost Active 2.00 1.6 10 32.00 L \$58.87 incl. in rate Active 2.00 1.6 10 32.00 L \$55.80 incl. in rate Active 1.00 1.6 10 16.00 E \$117.77 incl. in rate Active 1.00 1.6 10 16.00 L \$81.60 incl. in rate Active 2.00 1.6 10 32.00 L \$51.07 incl. in rate Active 1.00 1.6 10 16.00 E \$27.09 incl. in rate Active 1.00 1.6 10 16.00 E \$31.90 incl. in rate	Idle crew Worked /day Hours Rate Cost Rate Active 2.00 1.6 10 32.00 L \$58.87 incl. in rate incl. in rate Active 2.00 1.6 10 32.00 L \$55.80 incl. in rate incl. in rate Active 1.00 1.6 10 16.00 E \$117.77 incl. in rate incl. in rate Active 1.00 1.6 10 16.00 L \$81.60 incl. in rate incl. in rate Active 2.00 1.6 10 32.00 L \$51.07 incl. in rate incl. in rate Active 1.00 1.6 10 16.00 E \$27.09 incl. in rate incl. in rate Active 1.00 1.6 10 16.00 E \$31.90 incl. in rate incl. in rate

MATERIAL COSTS										
Description	Item	Order	Conversion	Order	Order	Material				
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost				
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$435.79	\$435.79				

144

Labor Hours

Equipment Hours

TOTAL MATERIAL \$435.79

SUBCONTRACT COSTS											
Description	Quantity	Units	Notes /	Unit	Contract or Quote						
			Company	Price	Amount						

SUMMARY OF COSTS						
Labor Cost	\$8,715.87	Labor Burden @	0.0%	\$0.00		\$8,715
Material Cost	\$435.79	Material Tax @	7.75%	\$33.77		\$469
Equipment Cost	\$2,828.16	Equipment Tax @	7.75%	\$219.18		\$3,047
Subcontractors	\$0.00		-			\$0
DIRECT COST SUBTOTALS	\$11,980	-		\$253	DIRECT COST SUBTOTALS	\$12,2

Production is based off of RSMs using Crew formed of 1 Forman, 1 Electrician,1Crane. Considered 1 laborer to help loading circuit breakers in the truck for saving it in the designated place. 1 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

PAY ITE	EM INFORMATION								
	PAY ITEM NUMBER		5.008		Project	: KRRP - Copco 1			
	Description	:	Remove Disconnect Switches @S	witchyard	Group	: D05			
	Quantity	:	4.00 EA						
	Daily Production	:	1.25 EA per	10 hour shift	Project #	: 2			
,	Work Days	:	3.2 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
	Unit Price	:	\$8,710.21 per EA		Probable Low	Cost Parameter	1.375	\$31,357	\$7,839.19
-	Total Cost	:	\$34,841		Probable High	Cost Parameter	0.9375	\$43,551	\$10,887.76

Work Days : Unit Price :	3.2 \$8,710.21	Day per EA	S		Estimator Probable Low C		a Tomulescu ter	EA per 1.375	Total Cost \$31,357	Unit Price Per EA \$7,839.19
Total Cost :	\$34,841				Probable High C			0.9375	\$43,551	\$10,887.76
DEW COSTS										
REW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
_abor Foreman	Active	1.00	3.2	10	32.00	L	\$58.87	incl. in rate	incl. in rate	\$1,88
Electrician	Active	2.00	3.2	10	64.00	L	\$55.80	incl. in rate	incl. in rate	\$3,57
Hydraulic Excavator (6.0cy)	Active	1.00	3.2	10	32.00	E	\$324.12	incl. in rate	incl. in rate	\$10,3
Equipment Operator (medium)	Active	1.00	3.2	10	32.00	L	\$72.34	incl. in rate	incl. in rate	\$2,3
aborer	Active	2.00	3.2	10	64.00	L	\$51.07	incl. in rate	incl. in rate	\$3,2
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	3.2	10	32.00	E	\$27.09	incl. in rate	incl. in rate	\$8
ruck, Utility, with Man-Basket	Active	2.00	3.2	10	64.00	E	\$31.90	incl. in rate	incl. in rate	\$2,0
Fruck Driver (light)	Active	2.00	3.2	10	64.00	L	\$65.82	incl. in rate	incl. in rate	\$4,2
Fruck Driver (heavy)	Active	1.00	3.2	10	32.00	L	\$75.72	incl. in rate	incl. in rate	\$2,4
				_		_				
				Labor Hours	288				TOTAL LABOR	\$17,6
				Labor Hours Equipment Hours	288 128			т	TOTAL LABOR	
ATERIAL COSTS								T		
	Item	Order		Equipment Hours	128		Order	Т		\$13,2
Description	Item Quantity	Order Unit		Equipment Hours Conversion Factor / Waste	128 Order Quantity		Order Price			\$13,2 Material Cost
Description				Equipment Hours Conversion	128 Order					\$13,2 Material Cost
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	128 Order Quantity		Price	.19		\$13,2 Material Cost \$2,6
Description nsumables 15% labor (saw blades, drill bits, etc)	Quantity	Unit		Equipment Hours Conversion Factor / Waste	128 Order Quantity		Price \$2,651	.19	OTAL EQUIPMENT	\$13,2 Material Cost \$2,6
Description onsumables 15% labor (saw blades, drill bits, etc)	Quantity	Unit		Equipment Hours Conversion Factor / Waste 1.000	128 Order Quantity	Unit	Price \$2,651	.19	OTAL EQUIPMENT	\$13,2 Material Cost \$2,6
Description onsumables 15% labor (saw blades, drill bits, etc) JBCONTRACT COSTS	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	128 Order Quantity	Unit	Price \$2,651	.19	OTAL EQUIPMENT	\$13,2 Material Cost \$2,6
Description nsumables 15% labor (saw blades, drill bits, etc) JBCONTRACT COSTS	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	128 Order Quantity		Price \$2,651	.19	OTAL EQUIPMENT	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount
Description onsumables 15% labor (saw blades, drill bits, etc) UBCONTRACT COSTS Description	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	128 Order Quantity		Price \$2,651	.19	TOTAL MATERIAL	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount
Description Onsumables 15% labor (saw blades, drill bits, etc) UBCONTRACT COSTS Description UMMARY OF COSTS	Quantity 1.00 Quantity	Unit LS Units	1 0	Conversion Factor / Waste 1.000 Notes / Company	Order Quantity 1.00		Price \$2,651	.19	TOTAL MATERIAL	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount
Description Onsumables 15% labor (saw blades, drill bits, etc) UBCONTRACT COSTS Description UMMARY OF COSTS bor Cost	Quantity 1.00	Unit LS Units		Equipment Hours Conversion Factor / Waste 1.000	128 Order Quantity		Price \$2,651	.19	TOTAL MATERIAL	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount
Description onsumables 15% labor (saw blades, drill bits, etc) JBCONTRACT COSTS Description JMMARY OF COSTS bor Cost atterial Cost July Property July	Quantity 1.00 Quantity \$17,674.62 \$2,651.19 \$3,280.32	Unit LS Units	@	Equipment Hours Conversion Factor / Waste 1.000 Notes / Company	Order Quantity 1.00		Price \$2,651	.19	TOTAL MATERIAL	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount \$17,6 \$2,8 \$2,8
Description onsumables 15% labor (saw blades, drill bits, etc) JBCONTRACT COSTS Description JMMARY OF COSTS bor Cost atterial Cost July Property July	Quantity 1.00 Quantity Quantity \$17,674.62 \$2,651.19	Unit LS Units	@	Conversion Factor / Waste 1.000 Notes / Company	128 Order Quantity 1.00 \$0.00 \$205.47		Price \$2,651	.19	TOTAL MATERIAL	\$13,2 Material Cost \$2,6 \$2,6 Contract or Quote Amount \$17,6 \$2,8 \$2,8
onsumables 15% labor (saw blades, drill bits, etc)	Quantity 1.00 Quantity \$17,674.62 \$2,651.19 \$3,280.32	Unit LS Units	@	Conversion Factor / Waste 1.000 Notes / Company	128 Order Quantity 1.00 \$0.00 \$205.47		Price \$2,651	TOTAL	TOTAL MATERIAL	Cost \$2,65

TOTAL SUBCONTRACTS

\$1,301.22

\$12,000.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.009	Project	: KRRP - Copco 1			
Description	:	Remove all associated auxiliary equipment @Switchyard (Allowance)	Group	: D05			
Quantity	:	1.00 LS					
Daily Production	:	1.25 LS per 10 hour shift	Project #	: 2			
Work Days	:	3.0 Days	Estimator	: Mihaela Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$53,473.36 per LS	Probable Low	Cost Parameter	1.375	\$48,126	\$48,126.02
Total Cost	:	\$53,473	Probable High	Cost Parameter	0.9375	\$66,842	\$66,841.70

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.0	10	30.00	L	\$58.87	incl. in rate	incl. in rate	\$1,766.10
Electrician	Active	4.00	3.0	10	120.00	L	\$55.80	incl. in rate	incl. in rate	\$6,696.36
Hydraulic Excavator (2.5cy)	Active	1.00	3.0	10	30.00	E	\$205.40	incl. in rate	incl. in rate	\$6,162.00
Equipment Operator (medium)	Active	1.00	3.0	10	30.00	L	\$72.34	incl. in rate	incl. in rate	\$2,170.08
Truck, Utility, with Man-Basket	Active	1.00	3.0	10	30.00	E	\$31.90	incl. in rate	incl. in rate	\$957.00
Hydraulic Crane (17tn)	Active	1.00	3.0	10	30.00	E	\$82.43	incl. in rate	incl. in rate	\$2,472.90
Laborer	Active	4.00	3.0	10	120.00	L	\$51.07	incl. in rate	incl. in rate	\$6,128.76
Truck Driver (heavy)	Active	3.00	3.0	10	90.00	L	\$75.72	incl. in rate	incl. in rate	\$6,815.16
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	3.0	10	60.00	E	\$57.41	incl. in rate	incl. in rate	\$3,444.60
Equipment Operator (crane)	Active	1.00	3.0	10	30.00	L	\$81.60	incl. in rate	incl. in rate	\$2,447.94
				Labor Hours	420				TOTAL LABOR	\$26,024.46
				Equipment Hours	150			-	TOTAL EQUIPMENT	\$13,036.50

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
	Quantity	Onit	racion / waste	Quantity	riice	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,301.22	\$1,301.22

Quantity	Units	Notes /	Unit		Contract or Quote
		Company	Price	9	Amount
1.00	days		4.00	\$3,000.00	\$12,000.00
	•	·	Company	. Company Price	Company Price

SUMMARY OF COSTS						
Labor Cost	\$26,024.46	Labor Burden @	0.0%	\$0.00		\$26,024.46
Material Cost	\$1,301.22	Material Tax @	7.75%	\$100.84		\$1,402.07
Equipment Cost	\$13,036.50	Equipment Tax @	7.75%	\$1,010.33		\$14,046.83
Subcontractors	\$12,000.00					\$12,000.00
DIRECT COST SUBTOTALS Additional Pay Item Notes :	\$52,362			\$1,111	DIRECT COST SUBTOTALS	\$53,473

Production is based off of RSMs using Crew formed of 1 Forman, 4 Electrician, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck., 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations, 1 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	5.010	Project : KRRP - Copco 1			
Description	:	(6 Poles)	Group : D05			
Quantity	:	6.00 EA				
Daily Production	:	3.75 EA per 10 hour shift	Project # : 2			
Work Days	:	1.6 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,306.79 per EA	Probable Low Cost Parameter	4.125	\$17,857	\$2,976.11
Total Cost	:	\$19,841	Probable High Cost Parameter	2.8125	\$24,801	\$4,133.48

Description Item Order Conversion Order Order	Active 1.00 1.6 10 Active 2.00 1.6 10 Active 1.00 1.6 10 Active 3.00 1.6 10	16.00 32.00 16.00	L L	\$51.07	incl. in rate		\$941.9
Equipment Operator (crane)	Active 2.00 1.6 10 Active 1.00 1.6 10 Active 3.00 1.6 10	32.00 16.00	L			incl. in rate	
Equipment Operator (medium) Active 1.00 1.6 10 16.00 L \$72.34 incl. in rate incl. in rate Electrician Active 3.00 1.6 10 48.00 L \$55.80 incl. in rate incl. in rate Steelworker Active 1.00 1.6 10 16.00 L \$78.10 incl. in rate incl. in rate Hydraulic Crane (80m) Active 2.00 1.6 10 32.00 E \$197.66 incl. in rate incl. in rate Loader, FE Rubber Tire (5.25cy) Active 1.00 1.6 10 16.00 E \$76.00 incl. in rate incl. in rate Truck, Utility, with Man-Basket Active 1.00 1.6 10 16.00 E \$31.90 incl. in rate incl. in rate Labor Hours Equipment Hours Labor Hours Equipment Hours Description Item Order Conversion Order Order Order Order Order Order Order	Active 1.00 1.6 10 Active 3.00 1.6 10	16.00		\$81.60	inal in rata		\$817.1
Electrician	Active 3.00 1.6 10		L		IIICI. III Tale	incl. in rate	\$2,611.1
Stelworker		48.00		\$72.34	incl. in rate	incl. in rate	\$1,157.3
Hydraulic Crane (80tn)	Active 1.00 1.6 10		L	\$55.80	incl. in rate	incl. in rate	\$2,678.5
Labor Hours Equipment Hours Description Let Marker Marke		16.00	L	\$78.10	incl. in rate	incl. in rate	\$1,249.6
Truck, Utility, with Man-Basket Active 1.00 1.6 10 16.00 E \$31.90 incl. in rate incl. in rate Labor Hours Equipment Hours 64 TOTAL LABOR TOTAL EQUIPMENT Description Item Order Conversion Order Order	Active 2.00 1.6 10	32.00	E	\$197.66	incl. in rate	incl. in rate	\$6,325.12
Labor Hours 144 TOTAL LABOR Equipment Hours 64 TOTAL EQUIPMENT MATERIAL COSTS Description Item Order Conversion Order Order	Active 1.00 1.6 10	16.00	E	\$76.00	incl. in rate	incl. in rate	\$1,216.0
Labor Hours 144 TOTAL LABOR Equipment Hours 64 TOTAL EQUIPMENT MATERIAL COSTS Description Item Order Conversion Order Order	Active 1.00 1.6 10	16.00	Е	\$31.90	incl. in rate	incl. in rate	\$510.4
Equipment Hours 64 TOTAL EQUIPMENT MATERIAL COSTS Description Item Order Conversion Order Order							
MATERIAL COSTS Description Item Order Conversion Order Order	Labor H	lours 144				TOTAL LABOR	\$9,455.7
Description Item Order Conversion Order Order	Equipment H	lours 64			Т	OTAL EQUIPMENT	\$8,051.5
Description Item Order Conversion Order Order							
	Hom Order Conversion	Order		Ordor			Material
Quantity Unit Factor / Waste Quantity Price	Quantity Unit Factor / Waste	Quantity		Price			Cost
Consumables 5% labor (saw blades, drill bits, etc) 1.00 LS 1.000 1.00 \$472.79	1.00 LS 1.000	1.00	0	\$472	.79		\$472.7

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$47 2.79		\$472.79
						TOTAL MATERIAL	\$472.79

SUBCONTRACT COSTS				
Description	Quantity Units	Notes / Company	Unit Price	Contract or Quote Amount
	0.00 / /			
Hauling cost to landfill	6.00 Loads	18 CY per load	\$200.00	\$1,200.00
				TOTAL CURCONTRACTO

SUMMARY OF COSTS					
Labor Cost	\$9,455.78 Labor Burden @	0.0%	\$0.00		\$9,455.78
Material Cost	\$472.79 Material Tax @	7.75%	\$36.64		\$509.43
Equipment Cost	\$8,051.52 Equipment Tax @	7.75%	\$623.99		\$8,675.51
Subcontractors	\$1,200.00				\$1,200.00
DIRECT COST SUBTOTALS	\$19,180		\$661	DIRECT COST SUBTOTALS	\$19,841
Additional Pay Item Notes :					
-					

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	5.011	Project : KRRP	- Copco 1		
Description	:	Diversion Dam	Group : D05			
Quantity	:	8.00 EA				
Daily Production	:	2.50 EA per 10 hour shift	Project # : 2			
Work Days	:	3.2 Days	Estimator : Mihae	la Tomulescu EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,794.89 per EA	Probable Low Cost Parame	eter 2.75	\$12,923	\$1,615.40
Total Cost	:	\$14,359	Probable High Cost Param	eter 1.875	\$17.949	\$2.243.61

Total Cost :	\$14,359	er EA			Probable Low 0	Cost Paramet	ter	2.75	\$12,923	\$1,615.40
	ψ,σσσ				Probable High	Cost Parame	ter	1.875	\$17,949	\$2,243.61
REW COSTS										
Description Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.2	10	32.00	L	\$58.87	incl. in rate	incl. in rate	\$1,88
Electrician	Active	1.00	3.2	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,78
Hydraulic Crane (17tn)	Active	1.00	3.2	10	32.00	E	\$82.43	incl. in rate	incl. in rate	\$2,63
Equipment Operator (medium)	Active	1.00	3.2	10	32.00	L	\$72.34	incl. in rate	incl. in rate	\$2,3
Fruck Driver (heavy)	Active	1.00	3.2	10	32.00	L	\$75.72	incl. in rate	incl. in rate	\$2,4
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	3.2	10	32.00	Е	\$27.09	incl. in rate	incl. in rate	\$8
Laborer	Active	1.00	3.2	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,6
				Labor Hours					TOTAL LABOR	
				Labor Hours Equipment Hours				1	TOTAL LABOR	
IATERIAL COSTS								1		
IATERIAL COSTS Description	ltem	Order		Equipment Hours	64		Order	1		\$10,0 \$3,5
ATERIAL COSTS Description	Item Quantity	Order Unit					Order Price	1		
Description				Equipment Hours Conversion	64 Order					\$3,5
	Quantity	Unit		Equipment Hours Conversion Factor / Waste	64 Order Quantity		Price			\$3,5 Material Cost
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	64 Order Quantity		Price			\$3,5 Material Cost
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	64 Order Quantity		Price			\$3,5 Material Cost \$6
Description onsumables 5% labor (saw blades, drill bits, etc)	Quantity	Unit		Equipment Hours Conversion Factor / Waste	64 Order Quantity		Price		TOTAL EQUIPMENT	\$3,5 Material Cost
Description onsumables 5% labor (saw blades, drill bits, etc)	Quantity 1.00	Unit		Equipment Hours Conversion Factor / Waste	64 Order Quantity		Price \$502		TOTAL EQUIPMENT	\$3,5 Material Cost \$5
Description Insumables 5% labor (saw blades, drill bits, etc)	Quantity	Unit		Equipment Hours Conversion Factor / Waste 1.000	64 Order Quantity	Unit	Price \$502		TOTAL EQUIPMENT	Material Cost \$5
Description onsumables 5% labor (saw blades, drill bits, etc) UBCONTRACT COSTS	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	64 Order Quantity		Price \$502		TOTAL EQUIPMENT	\$3,5 Material Cost \$6
Description onsumables 5% labor (saw blades, drill bits, etc) UBCONTRACT COSTS	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	64 Order Quantity	Unit	Price \$502		TOTAL EQUIPMENT	Material Cost \$5
Description nsumables 5% labor (saw blades, drill bits, etc) JBCONTRACT COSTS	Quantity 1.00	Unit LS		Equipment Hours Conversion Factor / Waste 1.000	64 Order Quantity	Unit	Price \$502		TOTAL EQUIPMENT	\$3,5 Material Cost \$5 \$5 Contract or Quote

SUMMARY OF COSTS					
Labor Cost	\$10,041.86 Labor Burden @	0.0%	\$0.00		\$10,041.86
Material Cost	\$502.09 Material Tax @	7.75%	\$38.91		\$541.00
Equipment Cost	\$3,504.64 Equipment Tax @	7.75%	\$271.61		\$3,776.25
Subcontractors	\$0.00	-		'	\$0.00
DIRECT COST SUBTOTALS Additional Pay Item Notes:	\$14,049		\$311	DIRECT COST SUBTOTALS	\$14,359

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician,1 Crane). Considered one laborer for demolish the pole and helping placing poles in a designated place and loading it in the truck for disposal. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$8,786.62

\$3,066.56

\$472.51

\$0.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.012	Project : KRF	RP - Copco 1			
Description	:	Remove "Production Poles" in general area Copco#1	Group : D05				
Quantity	:	7.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project # : 2				
Work Days	:	2.8 Days	Estimator : Mih	aela Tomulescu E.	A per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,599.99 per EA	Probable Low Cost Para	meter 2	2.875	\$21,420	\$3,059.99
Total Cost	:	\$25,200	Probable High Cost Para	meter	1.75	\$32,760	\$4,679.99

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.8	10	28.00	L	\$58.87	incl. in rate	incl. in rate	\$1,648.42
Electrician	Active	1.00	2.8	10	28.00	L	\$55.80	incl. in rate	incl. in rate	\$1,562.4
Hydraulic Crane (17tn)	Active	1.00	2.8	10	28.00	E	\$82.43	incl. in rate	incl. in rate	\$2,308.04
Equipment Operator (medium)	Active	1.00	2.8	10	28.00	L	\$72.34	incl. in rate	incl. in rate	\$2,025.4
Laborer	Active	1.00	2.8	10	28.00	L	\$51.07	incl. in rate	incl. in rate	\$1,430.0
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	2.8	10	28.00	E	\$27.09	incl. in rate	incl. in rate	\$758.5
Truck Driver (heavy)	Active	1.00	2.8	10	28.00	L	\$75.72	incl. in rate	incl. in rate	\$2,120.2

MATERIAL COSTS									
Description	Item	Order	Conversion	Order	Order	Material			
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost			
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$439.33	\$439.33			
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on									
site, spread from pile to rough finish grade	7.00	CY	1.000	7.00	\$4.74	\$33.18			

140

Labor Hours

Equipment Hours

SUBCONTRACT COSTS									
Description	Quantity	Units	Notes /	Unit	Contract or Quote				
			Company	Price	Amount				

SUMMARY OF COSTS						
Labor Cost	\$8,786.62 La	abor Burden @	0.0%	\$0.00		\$8,786.62
Material Cost	\$472.51 Ma	laterial Tax @	7.75%	\$36.62		\$509.13
Equipment Cost	\$3,066.56 Eq	quipment Tax @	7.75%	\$237.66		\$3,304.22
Subcontractors	\$0.00 Su	ubcontractor MU @				\$12,599.97
DIRECT COST SUBTOTALS	\$12,326			\$274	DIRECT COST SUBTOTALS	\$25,200
Additional Pay Item Notes :						

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician,1 Crane). Considered one laborer for demolish the pole and helping placing poles in a designated place and loading them in the truck for disposal. This process includes filling in pole locations with gravel, clean fill and topsoil. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

TOTAL EQUIPMENT

TOTAL SUBCONTRACTS

\$2,957.04

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM IN	FORMATION							
PAY IT	EM NUMBER :	5.013		Project	: KRRP - Copco 1			
Descrip	otion :	Remove "Village Houses Distribution	ution Poles" near dam (assumed 10)	Group	: D05			
Quanti	ty :	10.00 EA						
Daily P	roduction :	3.75 EA per	10 hour shift	Project #	: 2			
Work D	ays :	2.7 Day	s	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Pr	ice :	\$2,433.31 per EA		Probable Low	Cost Parameter	4.3125	\$20,683	\$2,068.32
Total C	ost ·	\$24.333		Probable High	Cost Parameter	2 625	\$31 633	\$3 163 31

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.7	10	27.00	L	\$58.87	incl. in rate	incl. in rate	\$1,589.5
Electrician	Active	1.00	2.7	10	27.00	L	\$55.80	incl. in rate	incl. in rate	\$1,506.6
Hydraulic Crane (17tn)	Active	1.00	2.7	10	27.00	E	\$82.43	incl. in rate	incl. in rate	\$2,225.6
Equipment Operator (medium)	Active	1.00	2.7	10	27.00	L	\$72.34	incl. in rate	incl. in rate	\$1,953.0
Truck Driver (heavy)	Active	1.00	2.7	10	27.00	L	\$75.72	incl. in rate	incl. in rate	\$2,044.5
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	2.7	10	27.00	E	\$27.09	incl. in rate	incl. in rate	\$731.4
Laborer	Active	1.00	2.7	10	27.00	L	\$51.07	incl. in rate	incl. in rate	\$1,378.9
				_						
				Labor Hours	135				TOTAL LABOR	\$8.472.

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$423.64	\$423.64
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	10.00	CY	1.000	10.00	\$4.74	\$47.40

Equipment Hours

					TOTAL MATERIAL	\$471.04
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount

SUMMARY OF COSTS					
Labor Cost	\$8,472.82 Labor Burden @	0.0%	\$0.00		\$8,472.82
Material Cost	\$471.04 Material Tax @	7.75%	\$36.51		\$507.5
Equipment Cost	\$2,957.04 Equipment Tax @	7.75%	\$229.17		\$3,186.2
Subcontractors	\$0.00 Subcontractor MU @				\$12,166.57
DIRECT COST SUBTOTALS	\$11,901		\$266	DIRECT COST SUBTOTALS	\$24,33
Additional Pay Item Notes :					

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician,1 Crane). Considered one laborer for demolish the pole and helping placing poles in a designated place and loading them in the truck for disposal. This process includes filling in pole locations with gravel, clean fill and topsoil. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

TOTAL MATERIAL

\$6,052.06

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	5.014	Project : KRRP - Copco 1			
Description	:	Remove 69 KV Distribution line 1.6 miles (30 poles)	Group : D05			
Quantity	:	30.00 EA				
Daily Production	:	3.00 EA per 10 hour shift	Project # : 2			
Work Days	:	10.0 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$4,194.72 per EA	Probable Low Cost Parameter	3.45	\$106,965	\$3,565.51
Total Cost	:	\$125,842	Probable High Cost Parameter	2.1	\$163,594	\$5,453.14

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	10.0	10	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.2
Laborer	Active	1.00	10.0	10	100.00	L	\$51.07	incl. in rate	incl. in rate	\$5,107.3
Equipment Operator (crane)	Active	2.00	10.0	10	200.00	L	\$81.60	incl. in rate	incl. in rate	\$16,319.6
Equipment Operator (medium)	Active	1.00	10.0	10	100.00	L	\$72.34	incl. in rate	incl. in rate	\$7,233.6
Electrician	Active	3.00	10.0	10	300.00	L	\$55.80	incl. in rate	incl. in rate	\$16,740.9
Steelworker	Active	1.00	10.0	10	100.00	L	\$78.10	incl. in rate	incl. in rate	\$7,810.0
Hydraulic Crane (80tn)	Active	2.00	10.0	10	200.00	E	\$197.66	incl. in rate	incl. in rate	\$39,532.0
Loader, FE Rubber Tire (5.25cy)	Active	1.00	10.0	10	100.00	E	\$76.00	incl. in rate	incl. in rate	\$7,600.0
Truck, Utility, with Man-Basket	Active	1.00	10.0	10	100.00	E	\$31.90	incl. in rate	incl. in rate	\$3,190.0
				Labor Hours	900				TOTAL LABOR	\$59,098.0
				Equipment Hours	400			,	TOTAL EQUIPMENT	\$50,322.0

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$5,909.86	\$5,909.86
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	30.00	СҮ	1.000	30.00	\$4.74	\$142.20

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Hauling cost to landfill	30.00 Loads	18 CY per load	\$200.00		\$6,000.00
				TOTAL SUBCONTRACTS	\$6,000.00

SUMMARY OF COSTS						
Labor Cost	\$59,098.60	Labor Burden @	0.0%	\$0.00		\$59,098.60
Material Cost	\$6,052.06	Material Tax @	7.75%	\$469.03		\$6,521.09
Equipment Cost	\$50,322.00	Equipment Tax @	7.75%	\$3,899.96		\$54,221.96
Subcontractors	\$6,000.00					\$6,000.00
DIRECT COST SUBTOTALS	\$121,473	-		\$4,369	DIRECT COST SUBTOTALS	\$125,842
Additional Pay Item Notes :					-	

This process includes filling in pole locations with gravel, clean fill and topsoil. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard. Figuring crew will get three poles a day due to repositioning of equipment at each location. Loader will be used to do minor grading in the removal location for crane setup.

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	5.015			Project	: KRRP - Copco 1			
Description	:	distribution intact			Group	: D05			
Quantity	:	2.00 EA							
Daily Production	:	2.50 EA per	10 hour	r shift	Project #	: 2			
Work Days	:	0.8 Days			Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,521.03 per EA			Probable Low Co	st Parameter	2.875	\$4,286	\$2,142.88
Total Cost	:	\$5,042			Probable High Co	st Parameter	1.75	\$6,555	\$3,277.34

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	2.00	0.8	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Electrician	Active	4.00	0.8	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.8	10	8.00	E	\$16.99	incl. in rate	incl. in rate	\$135.92
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Truck, Utility, with Man-Basket	Active	2.00	0.8	10	16.00	E	\$31.90	incl. in rate	incl. in rate	\$510.40
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
				Labor Hours	72	1			TOTAL LABOR	\$4,123.50
				Equipment Hours	24			-	OTAL EQUIPMENT	\$646.32

MATERIAL COSTS								
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost	
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$206.18	<u></u>		\$206.18
						TOTAL MATERIAL		\$206.18

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit	Contract or Quote					
			Company	Price	Amount					

SUMMARY OF COSTS						
Labor Cost	\$4,123.50	Labor Burden @	0.0%	\$0.00		\$4,123.50
Material Cost	\$206.18	Material Tax @	7.75%	\$15.98		\$222.15
Equipment Cost	\$646.32	Equipment Tax @	7.75%	\$50.09		\$696.41
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$4,976	-		\$66	DIRECT COST SUBTOTALS	\$5,042
Additional Pay Item Notes :						

Production is based off of RSMs using Crew formed from 2 Forman and 4 Electrician, 2 Laborer, 2 utility truck access poles, string conductor, modify structure arms, provide guard structures., 2 Laborer to help ground side. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

TOTAL MATERIAL

\$1,370.75

\$400.00

PAY ITEM COST DETAIL WORKSHEET

lauling cost to landfill

2.00 Loads

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.016	Project	: KRRP - Copco 1			
Description	:	Remove Transmission conductors 1.3 miles Copco#1 to Copco#2	Group	: D05			
Quantity	:	6,864.00 LF					
Daily Production	:	1,000.00 LF per 10 hour shift	Project #	: 2			
Work Days	:	6.9 Days	Estimator	: Mihaela Tomulescu	LF per	Total Cost	Unit Price Per LF
Unit Price	:	\$5.14 per LF	Probable Low	Cost Parameter	1150	\$30,004	\$4.37
Total Cost	:	\$35,299	Probable High	Cost Parameter	700	\$45,888	\$6.69

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	2.00	6.9	10	138.00	L	\$58.87	incl. in rate	incl. in rate	\$8,124.34
Electrician	Active	2.00	6.9	10	138.00	L	\$55.80	incl. in rate	incl. in rate	\$7,700.81
Truck, Pickup (4x4, 3/4tn)	Active	1.00	6.9	10	69.00	E	\$16.99	incl. in rate	incl. in rate	\$1,172.31
Truck Driver (light)	Active	1.00	6.9	10	69.00	L	\$65.82	incl. in rate	incl. in rate	\$4,541.86
Truck, Utility, with Man-Basket	Active	2.00	6.9	10	138.00	E	\$31.90	incl. in rate	incl. in rate	\$4,402.20
Laborer	Active	2.00	6.9	10	138.00	L	\$51.07	incl. in rate	incl. in rate	\$7,048.07
				Labor Hours	483	1			TOTAL LABOR	\$27,415.0
				Equipment Hours	207				TOTAL EQUIPMENT	\$5,574.5

MATERIAL COSTS										
Description	Item	Order	Conversion	Order	Order	Material				
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost				
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,370.75	\$1,370.75				

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Contract or Quote Company Price Amount

1 mile of conductor per load.

TOTAL SUBCONTRACTS \$400.00

\$200.00

SUMMARY OF COSTS						
Labor Cost	\$27,415.08	Labor Burden @	0.0%	\$0.00		\$27,415.08
Material Cost	\$1,370.75	Material Tax @	7.75%	\$106.23		\$1,476.99
Equipment Cost	\$5,574.51	Equipment Tax @	7.75%	\$432.02		\$6,006.53
Subcontractors	\$400.00		•			\$400.00
DIRECT COST SUBTOTALS	\$34,760	•		\$538	DIRECT COST SUBTOTALS	\$35,299
Additional Pay Item Notes :						

Production is based off of RSMs using Crew formed from 2 Forman and 4 Electrician, 4 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, power plant and switchyard.

TOTAL MATERIAL

\$0.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.034	Project	: KRRP - Copco 1			
Description	:	Remove Maintenance Building, North & South Residence	Group	: D10			
Quantity	:	6,030.00 SF	_ '				
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 2			
Work Days	:	5.4 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.02 per SF	Probable Low C	ost Parameter	1293.75	\$71,881	\$11.92
Total Cost	:	\$84,565	Probable High C	ost Parameter	843.75	\$105,707	\$17.53

	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
idle	crew	vvorked	/day	nours		Rate	Cost	Rate	Cost
Active	1.00	5.4	10	54.00	L	\$58.87	incl. in rate	incl. in rate	\$3,179.09
Active	4.00	5.4	10	216.00	L	\$51.07	incl. in rate	incl. in rate	\$11,031.77
Active	2.00	5.4	10	108.00	L	\$72.34	incl. in rate	incl. in rate	\$7,812.29
Active	1.00	5.4	10	54.00	Е	\$276.50	incl. in rate	incl. in rate	\$14,931.00
Active	1.00	5.4	10	54.00	E	\$63.11	incl. in rate	incl. in rate	\$3,407.94
Active	1.00	5.4	10	54.00	E	\$63.11	incl. in rate	incl. in ra	te
	Active Active Active	Idle crew Active 1.00 Active 4.00 Active 2.00 Active 1.00	Idle crew Worked Active 1.00 5.4 Active 4.00 5.4 Active 2.00 5.4 Active 1.00 5.4	Idle Crew Worked /day Active 1.00 5.4 10 Active 4.00 5.4 10 Active 2.00 5.4 10 Active 1.00 5.4 10	Idle crew Worked /day Hours Active 1.00 5.4 10 54.00 Active 4.00 5.4 10 216.00 Active 2.00 5.4 10 108.00 Active 1.00 5.4 10 54.00	Idle crew Worked /day Hours Active 1.00 5.4 10 54.00 L Active 4.00 5.4 10 216.00 L Active 2.00 5.4 10 108.00 L Active 1.00 5.4 10 54.00 E	Idle crew Worked /day Hours Rate Active 1.00 5.4 10 54.00 L \$58.87 Active 4.00 5.4 10 216.00 L \$51.07 Active 2.00 5.4 10 108.00 L \$72.34 Active 1.00 5.4 10 54.00 E \$276.50	Idle crew Worked /day Hours Rate Cost Active 1.00 5.4 10 54.00 L \$58.87 incl. in rate Active 4.00 5.4 10 216.00 L \$51.07 incl. in rate Active 2.00 5.4 10 108.00 L \$72.34 incl. in rate Active 1.00 5.4 10 54.00 E \$276.50 incl. in rate	Idle crew Worked /day Hours Rate Cost Rate Active 1.00 5.4 10 54.00 L \$58.87 incl. in rate incl. in rate Active 4.00 5.4 10 216.00 L \$51.07 incl. in rate incl. in rate Active 2.00 5.4 10 108.00 L \$72.34 incl. in rate incl. in rate Active 1.00 5.4 10 54.00 E \$276.50 incl. in rate incl. in rate

L				
I	Labor Hours	378	TOTAL LABOR	\$22,023.14
	Equipment Hours	108	TOTAL EQUIPMENT	\$18,338.94

TERIAL COSTS					
Description		Order Conversion	Order	Order	Material
	Quantity	Unit Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS					
Description	Quantity	Units Notes	/ Unit		Contract or Quote
		Compa	ny Price		Amount
Dump Fee Conversion (SFXH*.33/27)	884 (CY			\$0.00
Conversion CY to Tons (2 tons per CY)	443.00 t	ons Klamath Coun	y Landfill \$74.00		\$32,782.00
Hauling cost to landfill	50.00 L	_oads 18 CY per	load \$200.00		\$10,000.00
					\$0.00
				TOTAL SUBCONTRACTS	\$42,782.00

\$22,023.14 L	abor Burden @	0.0%			\$22,023.14
\$0.00 N	Material Tax @	7.75%	\$0.00		\$0.00
\$18,338.94 E	Equipment Tax @	7.75%	\$1,421.27		\$19,760.21
\$42,782.00	•				\$42,782.00
\$83,144			\$1,421	DIRECT COST SUBTOTALS	\$84,565
nolition of structure	es, Disposal, and demobilize	zation.			
	\$0.00 \$18,338.94 \$42,782.00 \$83,144	\$83,144	\$0.00 Material Tax @ 7.75% \$18,338.94 Equipment Tax @ 7.75%	\$0.00 Material Tax @ 7.75% \$0.00 \$18,338.94 Equipment Tax @ 7.75% \$1,421.27 \$42,782.00 \$83,144	\$0.00 Material Tax @ 7.75% \$0.00

COPCO 2 DAM REMOVAL

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.001	Project	: KRRP - Copco 2	2		
Description	:	Right Side Coffer Dam- Furnish & Unload Materia	Group	: D02			
Quantity	:	20.00 LD	·				
Daily Production	:	20.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	1.0 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$2,009.34 per LD	Probable Low Cost Parameter		23	\$34,159	\$1,707.94
Total Cost		\$40.407	Droboble High Coat Decemptor		46	640.224	62 444 20

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	1.00	1.0	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.73
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Equipment Operator (crane)	Active	1.00	1.0	10	10.00	L	\$81.60	incl. in rate	incl. in rate	\$815.98
Crawler Crane (130tn)	Active	1.00	1.0	10	10.00	E	\$262.91	incl. in rate	incl. in rate	\$2,629.10
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.0	10	10.00	Ε	\$76.00	incl. in rate	incl. in rate	\$760.00
Dia Désa	Anthre	0.00	40	40	00.00		ф т о го			04.574.00
Pile Driver	Active	2.00	1.0	10	20.00	L	\$78.56			\$1,571.20
				Labor Hours	60				TOTAL LABOR	\$4,209.99
			Equi	pment Hours	20				TOTAL EQUIPMENT	\$3,389.10

Item	Order	Conversion	Order	Ord	der	Material
Quantity	Unit	Factor / Waste	Quantity	Pri	ice	Cost
1.00	ΔI	1.060	4	00 \$15.0	000.00	\$15,00
1.00	AL	1.000	1	.00 \$15,0	000.00	\$15,00
	Quantity 1.00	Quantity Unit	Quantity Unit Factor / Waste 1.00 AL 1.060	Quantity Unit Factor / Waste Quantity 1.00 AL 1.060 1	Quantity Unit Factor / Waste Quantity Pr 1.00 AL 1.060 1.00 \$15,0	Quantity Unit Factor / Waste Quantity Price 1.00 AL 1.060 1.00 \$15,000.00

TOTAL MATERIAL \$30,000.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS					
Labor Cost	\$4,209.99	Labor Burden @ 0.	9% \$0.00		\$4,209.99
Material Cost	\$30,000.00	Material Tax @ 7.7	\$2,325.00		\$32,325.00
Equipment Cost	\$3,389.10	Equipment Tax @ 7.7	\$262.66		\$3,651.76
Subcontractors	\$0.00				\$0.00
DIRECT COST SUBTOTALS	\$37,599		\$2,588	DIRECT COST SUBTOTALS	\$40,187
Additional Pay Item Notes :					•

This item is to account for the repositioning of the pile from the leftside coffer dam after the piles are extracted. Due to the tight area it is expected that there will be some rehandling of material before coffer cell pile installation begins. Material for coffer dam is purchased under payitem 3.005.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.001.1	Project	: KRRP - Copco 2			
Description	:	Right Side Coffer Dam- Drive Pile	Group	: D02			
Quantity	:	7,500.00 SF	_				
Daily Production	:	1,500.00 SF per 20 hour shift	Project #	: 3			
Work Days	:	5.0 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$28.02 per SF	Probable Low Cost Parameter		1725	\$178,596	\$23.81
Total Cost	:	\$210,113	Probable High Cost Parameter		1200	\$252,136	\$33.62

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours	UL	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	5.0	20	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.20
Laborer	Active	1.00	5.0	20	100.00	L	\$51.07	incl. in rate	incl. in rate	\$5,107.30
Equipment Operator (crane)	Active	1.00	5.0	20	100.00	L	\$81.60	incl. in rate	incl. in rate	\$8,159.80
Equipment Operator (oiler)	Active	1.00	5.0	20	100.00	L	\$73.43	incl. in rate	incl. in rate	\$7,342.50
Vibratory Hammer & Extractor	Active	1.00	5.0	20	100.00	Е	\$94.14	incl. in rate	incl. in rate	\$9,414.00
Welder, Portable	Active	1.00	5.0	20	100.00	E	\$7.84	incl. in rate	incl. in rate	\$783.75
Crawler Crane (130tn)	Active	1.00	5.0	20	100.00	E	\$262.91	incl. in rate	incl. in rate	\$26,291.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
Pile Driver	Active	3.00	5.0	20	300.00	L	\$78.56	incl. in rate	incl. in rate	\$23,568.00
D36 Hammer 36X100' Leads	Active	1.00	5.0	20	100.00	E	\$85.47	incl. in rate	incl. in rate	\$8,547.00
				_						
			L	abor Hours	700				TOTAL LABOR	\$50,064.80
			Equip	ment Hours	400				TOTAL EQUIPMENT	\$45,035.75

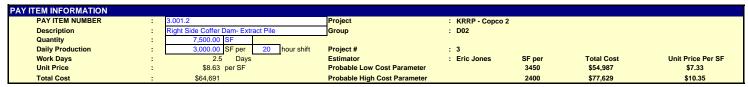
MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
PDA Allowance	1.00	AL	1.000	1.00	\$15,000.00	\$15,000.00

TOTAL MATERIAL \$15,000.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Predrilling for Pipe Pile (20' deep at 18 locations)	360	VLFT		\$126.00		\$45,360.00
Predrilling Equipment Mob and Demob	1	LS		\$50,000.00		\$50,000.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$95,360.00

			TOTAL CODOCNINACTO	ψ55,500.00
		_		
SUMMARY OF COSTS				
Labor Cost	\$50,064.80 Labor Burden @	0.0%		\$50,064.80
Material Cost	\$15,000.00 Material Tax @	7.75% \$1,162.50		\$16,162.50
Equipment Cost	\$45,035.75 Equipment Tax @	7.75% \$3,490.27		\$48,526.02
Subcontractors	\$95,360.00			\$95,360.00
DIRECT COST SUBTOTALS	\$205,461	\$4,653	DIRECT COST SUBTOTALS	\$210,113
Additional Pay Item Notes :			•	

MATERIAL COSTS



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.5	20	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	1.00	2.5	20	50.00	L	\$51.07	incl. in rate	incl. in rate	\$2,553.65
Equipment Operator (crane)	Active	1.00	2.5	20	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Equipment Operator (oiler)	Active	1.00	2.5	20	50.00	L	\$73.43	incl. in rate	incl. in rate	\$3,671.25
Vibratory Hammer & Extractor	Active	1.00	2.5	20	50.00	E	\$94.14	incl. in rate	incl. in rate	\$4,707.00
Welder, Portable	Active	1.00	2.5	20	50.00	E	\$7.84	incl. in rate	incl. in rate	\$391.88
Crawler Crane (130tn)	Active	1.00	2.5	20	50.00	Е	\$262.91	incl. in rate	incl. in rate	\$13,145.50
		0.00	2.5	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	2.5	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	2.5	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	2.5	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	2.5	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
Pile Driver	Active	3.00	2.5	20	150.00	L	\$78.56	incl. in rate	incl. in rate	\$11,784.00
			L	abor Hours	350		•		TOTAL LABOR	\$25,032.40
			Equip	ment Hours	150				TOTAL EQUIPMENT	\$18,244.38

Description	Item	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
								\$0.00
						TOTAL MATERIAL		*0.00
						TOTAL MATERIAL		\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
	-				\$0.00
Pile Load Allowance	20 LD		\$1,000.00		\$20,000.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$20.000.00

Labor Cost	\$25,032.40 Labor Burden @	0.0%		\$25,032.4
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.0
Equipment Cost	\$18,244.38 Equipment Tax @	7.75% \$1,413.9	<u> </u>	\$19,658.3
Subcontractors	\$20,000.00			\$20,000.0
IRECT COST SUBTOTALS	\$63,277	\$1,41	DIRECT COST SUBTOTALS	\$64,69
dditional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.002	Project	: KRRP - Copco 2			
Description	:	Access Trestle- Furnish & Unload Material	Group	: D02			
Quantity	:	78.00 LD					
Daily Production	:	20.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	3.9 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$6,265.64 per LD	Probable Low Cost Parameter		23	\$415,412	\$5,325.79
Total Cost	:	\$488,720	Probable High Cost Parameter		16	\$586,464	\$7,518.77

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.9	10	39.00	L	\$58.87	incl. in rate	incl. in rate	\$2,296.01
Laborer	Active	1.00	3.9	10	39.00	L	\$51.07	incl. in rate	incl. in rate	\$1,991.85
Equipment Operator (medium)	Active	1.00	3.9	10	39.00	L	\$72.34	incl. in rate	incl. in rate	\$2,821.10
Equipment Operator (crane)	Active	1.00	3.9	10	39.00	L	\$81.60	incl. in rate	incl. in rate	\$3,182.32
Crawler Crane (130tn)	Active	1.00	3.9	10	39.00	Е	\$262.91	incl. in rate	incl. in rate	\$10,253.49
Loader, FE Rubber Tire (5.25cy)	Active	1.00	3.9	10	39.00	Е	\$76.00	incl. in rate	incl. in rate	\$2,964.00
Pile Driver	Active	2.00	3.9	10	78.00		\$78.56			\$6,127.68
Pile Diliver	Active	2.00	3.9	10	76.00	L	\$70.30			\$0,127.00
			L	abor Hours	234				TOTAL LABOR	\$16,418.96
			Equip	ment Hours	78				TOTAL EQUIPMENT	\$13,217.49

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
250' Long X 32' Wide Trestle						\$0.0
Trestle Bent Caps (W30X108X 33'long) 2 each 7 locations	49,896.00	Lbs	1.000	49,896.00	\$0.50	\$24,948.0
Trestle Logintudinal Beams (W36X135X250'Long) 4 each 2 locations	270,000.00	Lbs	1.000	270,000.00	\$0.50	\$135,000.0
24" Pipe Pile (.5" thick wall X 40' long 2each at each bent)	560.00	LF	1.000	560.00	\$20.00	\$11,200.0
30" Pipe Pile (.5" thick wall X 40' long 2each at each bent)	560.00	LF	1.000	560.00	\$24.00	\$13,440.0
Handrail and Kicker	500.00	LF	1.000	500.00	\$5.00	\$2,500.0
Bent Cap to Pile Sleeve Allowance (10% of Material Cost)	1.00	AL	1.000	1.00	\$18,709.00	\$18,709.0
Bolt and Stiffener Allowance (5% of Material Cost)	1.00	AL	1.000	1.00	\$9,355.00	\$9,355.0
Crane Mats 5'X30'	54.00	EA	1.000	54.00	\$1,500.00	\$81,000.0
Rigging Allowance (5% of Material Cost)	1.00	AL	1.000	1.00	\$14,807.60	\$14,807.6
Crane Mats 5'X30'	54.00	EA	1.000	54.00	\$1,500.00	\$81

TOTAL MATERIAL \$310,959.60

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Freight Cost 10 ton/load (due to access restrictions) Allowance	29	9 LD		\$1,000.00		\$29,000.00
Freight Cost Crane Mats 5 ea/ Ld	54	4 LD		\$1,000.00		\$54,000.00
Mobilization of Crane and Equipment		1 LS		\$40,000.00		\$40,000.00
						\$0.00
					TOTAL SUBCONTRACTS	\$123,000,00

SUMMARY OF COSTS				
Labor Cost	\$16,418.96 Labor Burden @	0.0% \$0.00		\$16,418.96
Material Cost	\$310,959.60 Material Tax @	7.75% \$24,099.37		\$335,058.97
Equipment Cost	\$13,217.49 Equipment Tax @	7.75% \$1,024.36		\$14,241.85
Subcontractors	\$123,000.00			\$123,000.00
DIRECT COST SUBTOTALS	\$463,596	\$25,124	DIRECT COST SUBTOTALS	\$488,720
Additional Pay Item Notes :				

This payitem is to furnish and unload material for temporary work trestle at Copco 2 that is expected to be 8000 SF. Loads have been calculated by total weight of major structural steel items and adding 15% for misc items such as bolts, stiffeners, handrails ect. Mobilization of crane is expected to cost more than a standard mobilization due using smaller trucks due to access restrictions.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.002.1	Project	: KRRP - Copco 2			
Description	:	Access Trestle- Drive Pile	Group	: D02			
Quantity	:	1,120.00 LF	_ "				
Daily Production	:	500.00 LF per 20 hour shift	Project #	: 3			
Work Days	:	2.2 Days	Estimator	: Eric Jones	LF per	Total Cost	Unit Price Per LF
Unit Price	:	\$178.65 per LF	Probable Low Cost Parameter		575	\$170,077	\$151.85
Total Cost	:	\$200,090	Probable High Cost Parameter		400	\$240,108	\$214.38

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.2	20	44.00	L	\$58.87	incl. in rate	incl. in rate	\$2,590.37
Laborer	Active	1.00	2.2	20	44.00	L	\$51.07	incl. in rate	incl. in rate	\$2,247.21
Equipment Operator (crane)	Active	1.00	2.2	20	44.00	L	\$81.60	incl. in rate	incl. in rate	\$3,590.31
Equipment Operator (oiler)	Active	1.00	2.2	20	44.00	L	\$73.43	incl. in rate	incl. in rate	\$3,230.70
Carpenters	Active	2.00	2.2	20	88.00	L	\$85.49	incl. in rate	incl. in rate	\$7,523.30
Vibratory Hammer & Extractor	Active	1.00	2.2	20	44.00	Е	\$94.14	incl. in rate	incl. in rate	\$4,142.16
Welder, Portable	Active	1.00	2.2	20	44.00	Е	\$7.84	incl. in rate	incl. in rate	\$344.85
Crawler Crane (130tn)	Active	2.00	2.2	20	88.00	E	\$262.91	incl. in rate	incl. in rate	\$23,136.08
										<u> </u>
Pile Driver	Active	3.00	2.2	20	132.00	L	\$78.56	incl. in rate	incl. in rate	\$10,369.92
D36 Hammer 36X100' Leads	Active	1.00	2.2	20	44.00	Е	\$85.47	incl. in rate	incl. in rate	\$3,760.68
			L	abor Hours	396				TOTAL LABOR	\$29,551.81
			Equipo	ment Hours	220				TOTAL EQUIPMENT	\$31,383.77

Description	Item	Order	Conversion	Order		Order	Material
	Quantity	Unit	Factor / Waste	Quantity		Price	Cost
							\$0.00
A Allowance	1.00	AL	1.000		1.00	\$15,000.00	\$15,000.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Predrilling for Pipe Pile (20' deep at 28 locations)	560	VLFT		\$126.00		\$70,560.00
Predrilling Equipment Mob and Demob	1	LS		\$50,000.00		\$50,000.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$120.560.00

TOTAL MATERIAL

\$15,000.00

SUMMARY OF COSTS				
Labor Cost	\$29,551.81 Labor Burden @	0.0%		\$29,551.81
Material Cost	\$15,000.00 Material Tax @	7.75% \$1,162.50		\$16,162.50
Equipment Cost	\$31,383.77 Equipment Tax @	7.75% \$2,432.24		\$33,816.01
Subcontractors	\$120,560.00			\$120,560.00
DIRECT COST SUBTOTALS	\$196,496	\$3,595	DIRECT COST SUBTOTALS	\$200,090
Additional Pay Item Notes :			•	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.002.2	Project	: KRRP - Copco 2			
Description	:	Access Trestle - Fabricate Trestle Platform	Group	: D02			
Quantity	:	8,000.00 SF					
Daily Production	:	800.00 SF per 10 hour shift	Project #	: 3			
Work Days	:	10.0 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$12.35 per SF	Probable Low Cost Parameter		920	\$83,986	\$10.50
Total Cost	:	\$98,807	Probable High Cost Parameter		640	\$118,568	\$14.82

Description Labor Foreman Laborer Steelworker Equipment Operator (crane) Carpenters Welder, Portable	Active Active Active Active Active Active Active Active	1.00 3.00 2.00 1.00 2.00 2.00	Days Worked 10.0 10.0 10.0 10.0 10.0	Hours /day 10 10 10 10 10 10	Total Hours 100.00 300.00 200.00 100.00 200.00	L/E L L L	# Hourly Rate \$58.87 \$51.07 \$78.16 \$81.60	incl. in rate incl. in rate incl. in rate incl. in rate	Burden Rate incl. in rate incl. in rate incl. in rate incl. in rate	Labor / Equipment Cost \$5,887.20 \$15,321.90 \$15,631.00 \$8,159.80
Laborer Steelworker Equipment Operator (crane) Carpenters Welder, Portable	Active Active Active Active Active	3.00 2.00 1.00 2.00 2.00	10.0 10.0 10.0 10.0	10 10 10	300.00 200.00 100.00	L L L	\$51.07 \$78.16	incl. in rate incl. in rate	incl. in rate	\$15,321.90 \$15,631.00
Steelworker Equipment Operator (crane) Carpenters Welder, Portable	Active Active Active	2.00 1.00 2.00 2.00	10.0 10.0 10.0	10 10	200.00 100.00	L L L	\$78.16	incl. in rate	incl. in rate	\$15,631.00
Equipment Operator (crane) Carpenters Welder, Portable	Active Active Active	1.00 2.00 2.00	10.0 10.0	10	100.00	L L				
Carpenters Welder, Portable	Active Active	2.00 2.00	10.0			L	\$81.60	incl. in rate	incl. in rate	\$8.159.80
Welder, Portable	Active	2.00		10	200.00					φο, ισσ.σσ
			10.0		200.00	L	\$85.49	incl. in rate	incl. in rate	\$17,098.40
	Active		10.0	10	200.00	E	\$7.84	incl. in rate	incl. in rate	\$1,567.50
Crawler Crane (130tn)		1.00	10.0	10	100.00	Е	\$262.91	incl. in rate	incl. in rate	\$26,291.00
			Lab	or Hours	900				TOTAL LABOR	\$62,098.30
			Equipme	ent Hours	300				TOTAL EQUIPMENT	\$27,858.50

Description		Order Unit	Conversion Factor / Waste	Order Quantity		Order Price		Material Cost
								\$0.
nsumable Allowance 10% of Labor	1.00	AL	1.000		1.00	\$6,209.83		\$6,209.
							TOTAL MATERIAL	\$6,20

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
				TOTAL SUBCONTRACTS	\$0.00

or Cost	\$62,098.30 Labor Burden @	0.0%		\$62,098
erial Cost	\$6,209.83 Material Tax @	7.75% \$481.26		\$6,691
ipment Cost	\$27,858.50 Equipment Tax @	7.75% \$2,159.03		\$30,01
contractors	\$0.00			\$
CT COST SUBTOTALS	\$96,167	\$2,640	DIRECT COST SUBTOTALS	\$98
tional Pay Item Notes :			•	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.002.3	Project	: KRRP - Copco 2			
Description	:	Access Trestle - Remove Trestle Platform	Group	: D02			
Quantity	:	8,000.00 SF	_				
Daily Production	:	1,600.00 SF per 10 hour shift	Project #	: 3			
Work Days	:	5.0 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$6.08 per SF	Probable Low Cost Parameter		1840	\$41,315	\$5.16
Total Cost	:	\$48,606	Probable High Cost Parameter		1280	\$58,328	\$7.29

CREW COSTS										
Description	Active Idle	# in	Days Worked	Hours	Total	L/E	Hourly Rate	Hrly oper.	Burden Rate	Labor / Equipment Cost
		crew		/day	Hours			Cost		
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	3.00	5.0	10	150.00	L	\$51.07	incl. in rate	incl. in rate	\$7,660.95
Steelworker	Active	2.00	5.0	10	100.00	L	\$78.16	incl. in rate	incl. in rate	\$7,815.50
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Carpenters	Active	2.00	5.0	10	100.00	L	\$85.49	incl. in rate	incl. in rate	\$8,549.20
Acetylene Torches	Active	2.00	5.0	10	100.00	Е	\$0.44	incl. in rate	incl. in rate	\$44.00
Crawler Crane (130tn)	Active	1.00	5.0	10	50.00	Е	\$262.91	incl. in rate	incl. in rate	\$13,145.50
0										
0										
			La	abor Hours	450				TOTAL LABOR	\$31,049.15
			Equipr	ment Hours	150				TOTAL EQUIPMENT	\$13,189.50

Description			onversion tor / Waste	Order Quantity		Order Price		Material Cost
	•							\$0.0
onsumable Allowance 10% of Labor	1.00	AL	1.000		1.00	\$3,104.92		\$3,104.9
							TOTAL MATERIAL	\$3,104

SUBCONTRACT COSTS						
Description	Quantity	Units N	lotes /	Unit		Contract or Quote
		Co	mpany	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$31,049.15 Labor Burden @	0.0%		\$31,049.15
Material Cost	\$3,104.92 Material Tax @	7.75% \$240.63		\$3,345.55
Equipment Cost	\$13,189.50 Equipment Tax @	7.75% \$1,022.19		\$14,211.69
Subcontractors	\$0.00			\$0.00
IRECT COST SUBTOTALS	\$47,344	\$1,263	DIRECT COST SUBTOTALS	\$48,606
Additional Pay Item Notes :			·	

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.2	20	44.00	L	\$58.87	incl. in rate	incl. in rate	\$2,590.37
Laborer	Active	1.00	2.2	20	44.00	L	\$51.07	incl. in rate	incl. in rate	\$2,247.21
Equipment Operator (crane)	Active	1.00	2.2	20	44.00	L	\$81.60	incl. in rate	incl. in rate	\$3,590.31
Equipment Operator (oiler)	Active	1.00	2.2	20	44.00	L	\$73.43	incl. in rate	incl. in rate	\$3,230.70
Carpenters	Active	2.00	2.2	20	88.00	L	\$85.49	incl. in rate	incl. in rate	\$7,523.30
Vibratory Hammer & Extractor	Active	1.00	2.2	20	44.00	E	\$94.14	incl. in rate	incl. in rate	\$4,142.16
Welder, Portable	Active	1.00	2.2	20	44.00	E	\$7.84	incl. in rate	incl. in rate	\$344.85
Crawler Crane (130tn)	Active	2.00	2.2	20	88.00	Е	\$262.91	incl. in rate	incl. in rate	\$23,136.08
Pile Driver	Active	3.00	2.2	20	132.00	L	\$78.56	incl. in rate	incl. in rate	\$10,369.92
			Lab	or Hours	396				TOTAL LABOR	\$29,551.81
			Equipme	nt Hours	176				TOTAL EQUIPMENT	\$27,623.09

MATERIAL COSTS							
Description	ltem	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity	Units Notes	/ Unit		Contract or Quote
		Compa	ny Price		Amount
	•				\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$29,551.81 Labor Burden @	0.0%		\$29,551.8
Material Cost	\$0.00 Material Tax @	7.75% \$0.00	1	\$0.0
Equipment Cost	\$27,623.09 Equipment Tax @	7.75% \$2,140.79		\$29,763.8
Subcontractors	\$0.00			\$0.0
IRECT COST SUBTOTALS	\$57,175	\$2,141	DIRECT COST SUBTOTALS	\$59,31
dditional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.002.5	Project	: KRRP - Copco 2			
Description	:	Access Trestle- Load & Hauloff Material	Group	: D02			
Quantity	:	78.00 LD					
Daily Production	:	30.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	2.6 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$1,856.01 per LD	Probable Low Cost Parameter		34.5	\$123,053	\$1,577.60
Total Cost	:	\$144,768	Probable High Cost Parameter		24	\$173,722	\$2,227.21

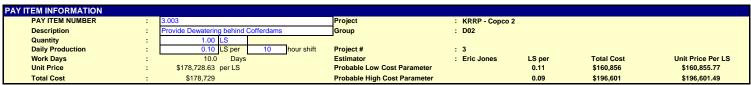
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.6	10	26.00	ı	\$58.87	incl. in rate	incl. in rate	\$1,530.67
Laborer	Active	2.00	2.6	10	52.00	L	\$51.07	incl. in rate	incl. in rate	\$2,655.80
Equipment Operator (medium)	Active	1.00	2.6	10	26.00	L	\$72.34	incl. in rate	incl. in rate	\$1,880.74
Equipment Operator (crane)	Active	1.00	2.6	10	26.00	L	\$81.60	incl. in rate	incl. in rate	\$2,121.55
Crawler Crane (130tn)	Active	1.00	2.6	10	26.00	Е	\$262.91	incl. in rate	incl. in rate	\$6,835.66
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.6	10	26.00	Е	\$76.00	incl. in rate	incl. in rate	\$1,976.00
Pile Driver	Active	2.00	2.6	10	52.00	L	\$78.56			\$4,085.12
						1				
				Labor Hours	182				TOTAL LABOR	\$12,273.87
			Equip	ment Hours	52				TOTAL EQUIPMENT	\$8,811.66

IATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
						TOTAL MATERIAL	\$0.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Freight Cost 10 ton/load (due to access restrictions) Allowance	29) LD		\$1,000.00	\$29,000.00
Freight Cost Crane Mats 5 ea/ Ld	54	1 LD		\$1,000.00	\$54,000.00
Mobilization of Crane and Equipment	1	I LS		\$40,000.00	\$40,000.00
					\$0.00
				TOTAL SUBCONTRACTS	\$123,000.00

\$12,273.87 Labor Burden @	0.0% \$0.00		\$12,273.87
\$0.00 Material Tax @	7.75% \$0.00		\$0.00
\$8,811.66 Equipment Tax @	7.75% \$682.90		\$9,494.56
\$123,000.00			\$123,000.00
\$144,086	\$683	DIRECT COST SUBTOTALS	\$144,768
nobilizing equipment. It is expected that the	e crane demobilizing cost will be higher than usu	ally due to need smaller trucks due the access restrictions	
	\$0.00 Material Tax @ Equipment Tax @ Equipment Tax @ \$123,000 \$144,086	\$0.00 Material Tax @ 7.75% \$0.00 \$0.00 \$123,000 \$123,000 \$144,086 \$683	\$0.00 Material Tax @ 7.75% \$0.00 \$8,811.66 Equipment Tax @ 7.75% \$682.90 \$123,000.00

Material Cost



CREW COSTS									
Description	Active	# in	Days Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked /day	Hours		Rate	Cost	Rate	Cost
Pump, Trash Pump, 6"+	Active	1.00	120.0 10	1,200.00	E	\$16.11	incl. in rate	incl. in rate	\$19,332.00
Laborer	Active	2.00	120.0 10	2,400.00	L	\$51.07	incl. in rate	incl. in rate	\$122,575.20
Labor Foreman	Active	1.00	60.0 10	600.00	L	\$58.87	incl. in rate	incl. in rate	\$35,323.2
0									
			Labar Harri		1			TOTAL LABOR	\$457.000.4
			Labor Hours					TOTAL LABOR	\$157,898.4
			Equipment Hours	1200				TOTAL EQUIPMENT	\$19,332.00
MATERIAL COSTS									
Description	Item	Order	Conversion	Order		Order			Material
	Quantity	Unit	Factor / Waste	Quantity		Price			Cost

TOTAL MATERIAL	\$0.00

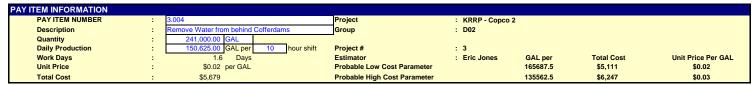
Order Price

Order Unit

Factor / Waste

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

dditional Pay Item Notes :	. ,		.,,		, o, .
IRECT COST SUBTOTALS	\$177.230		\$1.498	DIRECT COST SUBTOTALS	\$178,72
Subcontractors	\$0.00				\$0.0
Equipment Cost	\$19,332.00 Equipment Tax @	7.75%	\$1,498.23		\$20,830.2
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.0
Labor Cost	\$157,898.40 Labor Burden @	0.0%	\$0.00		\$157,898.4



CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Pump, Trash Pump, 6"+	Active	1.00	1.6	10	16.00	E	\$16.11	incl. in rate	incl. in rate	\$257.76
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.0	10	10.00	E	\$76.00	incl. in rate	incl. in rate	\$760.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	1.6	10	16.00	E	\$16.99	incl. in rate	incl. in rate	\$271.84
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Laborer	Active	3.00	1.6	10	48.00	L	\$51.07	incl. in rate	incl. in rate	\$2,451.50
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Intake and Discharge Hose, 3" 20' lengths		4.00	1.6	10	64.00	E	\$2.50			\$160.00
				_					_	
				Labor Hours	74				TOTAL LABOR	\$4,116.82
			Fauir	oment Hours	106				TOTAL EQUIPMENT	\$1,449.60

WATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.0
						TOTAL MATERIAL	\$0.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$4,116.82	Labor Burden @	0.0%			\$4,116.83
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$1,449.60	Equipment Tax @	7.75%	\$112.34		\$1,561.94
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$5,566			\$112	DIRECT COST SUBTOTALS	\$5,679
Additional Pay Item Notes :					·	

It will take a 3" pump 2 days to dewater 241,000gallons of water, 1 laborer will manage pump at night and 1 laborer will manage the pump during the day, loader will be used half of the time to place pump. Foreman with truck will oversee operation.

TOTAL MATERIAL

\$72,901.50

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.005	Project	: KRRP - Copco	2		
Description	:	Left Side Coffer Dam- Furnish & Unload Material	Group	: D07			
Quantity	:	15.00 LD					
Daily Production	:	20.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	0.8 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$6,989.38 per LD	Probable Low Cost Parameter		23	\$89,115	\$5,940.98
Total Cost	:	\$104.841	Probable High Cost Parameter		16	\$125.809	\$8.387.26

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.0	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	1.00	8.0	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Equipment Operator (medium)	Active	1.00	8.0	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Equipment Operator (crane)	Active	1.00	8.0	10	8.00	L	\$81.60	incl. in rate	incl. in rate	\$652.78
Crawler Crane (130tn)	Active	1.00	8.0	10	8.00	E	\$262.91	incl. in rate	incl. in rate	\$2,103.28
Loader, FE Rubber Tire (5.25cy)	Active	1.00	8.0	10	8.00	E	\$76.00	incl. in rate	incl. in rate	\$608.00
Pile Driver	Active	2.00	0.8	10	16.00	L	\$78.56			\$1,256.96
				<u> </u>						
			ı	abor Hours	48				TOTAL LABOR	\$3,367.99
			Equip	ment Hours	16				TOTAL EQUIPMENT	\$2,711.28

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.0
24" Combi Pipe Pile (.5" thick wall X 40' long 18 each over 175' line)	720.00	LF	1.060	763.20	\$25.00	\$19,080.0
Sheet Pile AZ-13 10,000 SF	95,000.00	Lbs	1.060	100,700.00	\$0.50	\$50,350.0
Rigging Allowance (5% of Material Cost)	1.00	AL	1.000	1.00	\$3,471.50	\$3,471.5

SUBCONTRACT COSTS Notes / Company Unit Price \$1,000.00 Quantity

20 LD Pile Load Allowance TOTAL SUBCONTRACTS

SUMMARY OF COSTS				
Labor Cost	\$3,367.99 Labor Burden @	0.0% \$0.00		\$3,367.99
Material Cost	\$72,901.50 Material Tax @	7.75% \$5,649.87		\$78,551.37
Equipment Cost	\$2,711.28 Equipment Tax @	7.75% \$210.12		\$2,921.40
Subcontractors	\$20,000.00			\$20,000.00
DIRECT COST SUBTOTALS	\$98,981	\$5,860	DIRECT COST SUBTOTALS	\$104,84
Additional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.005.1	Project	: KRRP - Copco 2			
Description	:	Left Side Coffer Dam- Drive Pile	Group	: D07			
Quantity	:	7,500.00 SF	_				
Daily Production	:	1,500.00 SF per 20 hour shift	Project #	: 3			
Work Days	:	5.0 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$28.02 per SF	Probable Low Cost Parameter		1725	\$178,596	\$23.81
Total Cost	:	\$210,113	Probable High Cost Parameter		1200	\$252,136	\$33.62

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	20	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.20
Laborer	Active	1.00	5.0	20	100.00	L	\$51.07	incl. in rate	incl. in rate	\$5,107.30
Equipment Operator (crane)	Active	1.00	5.0	20	100.00	L	\$81.60	incl. in rate	incl. in rate	\$8,159.80
Equipment Operator (oiler)	Active	1.00	5.0	20	100.00	L	\$73.43	incl. in rate	incl. in rate	\$7,342.50
Vibratory Hammer & Extractor	Active	1.00	5.0	20	100.00	Е	\$94.14	incl. in rate	incl. in rate	\$9,414.00
Welder, Portable	Active	1.00	5.0	20	100.00	Е	\$7.84	incl. in rate	incl. in rate	\$783.75
Crawler Crane (130tn)	Active	1.00	5.0	20	100.00	Е	\$262.91	incl. in rate	incl. in rate	\$26,291.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	5.0	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
Pile Driver	Active	3.00	5.0	20	300.00	L	\$78.56	incl. in rate	incl. in rate	\$23,568.00
D36 Hammer 36X100' Leads	Active	1.00	5.0	20	100.00	Е	\$85.47	incl. in rate	incl. in rate	\$8,547.00
			Lal	bor Hours	700				TOTAL LABOR	\$50,064.80
			Equipm	ent Hours	400				TOTAL EQUIPMENT	\$45,035.75

Description	Item	Order	Conversion	Order		Order		Material
	Quantity	Unit	Factor / Waste	Quantity		Price		Cost
								\$0.00
PDA Allowance	1.00	AL	1.000		1.00	\$15,000.00		\$15,000.00
							TOTAL MATERIAL	\$15,000.0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Predrilling for Pipe Pile (20' deep at 18 locations)	360	VLFT		\$126.00		\$45,360.00
Predrilling Equipment Mob and Demob	1	LS		\$50,000.00		\$50,000.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$95,360,00

Labor Cost	\$50,064.80 Labor Burden @	0.0%		\$50,064.
Material Cost	\$15,000.00 Material Tax @	7.75% \$1,162.50		\$16,162
Equipment Cost	\$45,035.75 Equipment Tax @	7.75% \$3,490.27		\$48,526
Subcontractors	\$95,360.00			\$95,360
RECT COST SUBTOTALS	\$205,461	\$4,653	DIRECT COST SUBTOTALS	\$210,
ditional Pay Item Notes :			•	

PAY ITEM INFORMATION							
PAY ITEM NUMBER		3.005.2	Project	: KRRP - Copco 2			
Description	:	Left Side Coffer Dam- Extract Pile	Group	: D07			
Quantity	:	7,500.00 SF	_				
Daily Production	:	3,000.00 SF per 20 hour shift	Project #	: 3			
Work Days	:	2.5 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$6.76 per SF	Probable Low Cost Parameter		3450	\$43,087	\$5.74
Total Cost	:	\$50,691	Probable High Cost Parameter		2400	\$60,829	\$8.11

CREW COSTS										
Description	Active Idle	# in crew		lours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.5	20	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	1.00	2.5	20	50.00	L	\$51.07	incl. in rate	incl. in rate	\$2,553.65
Equipment Operator (crane)	Active	1.00	2.5	20	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Equipment Operator (oiler)	Active	1.00	2.5	20	50.00	L	\$73.43	incl. in rate	incl. in rate	\$3,671.25
Vibratory Hammer & Extractor	Active	1.00	2.5	20	50.00	E	\$94.14	incl. in rate	incl. in rate	\$4,707.00
Welder, Portable	Active	1.00	2.5	20	50.00	Е	\$7.84	incl. in rate	incl. in rate	\$391.88
Crawler Crane (130tn)	Active	1.00	2.5	20	50.00	Е	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Pile Driver	Active	3.00	2.5	20	150.00	L	\$78.56	incl. in rate	incl. in rate	\$11,784.00
			Labor	Hours	350				TOTAL LABOR	\$25,032.40
			Equipment	Hours	150				TOTAL EQUIPMENT	\$18,244.38

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.0
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.
			1.000	0.00	\$0.00	\$0.

SUBCONTRACT COSTS					
Description	Quantity Un	its Notes /	Unit		Contract or Quote
		Company	Price		Amount
Load Allowance	10 LD		\$600.00		\$6,000.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$6,000.00

				++,
IMMARY OF COSTS			-	
UMMARY OF COSTS _abor Cost	\$25,032.40 Labor Burden @	0.0%		\$25,032
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0
quipment Cost	\$18,244.38 Equipment Tax @	7.75% \$1,413.94		\$19,65
ubcontractors	\$6,000.00			\$6,00
ECT COST SUBTOTALS	\$49,277	\$1,414	DIRECT COST SUBTOTALS	\$50
ditional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.005.3	Project	: KRRP - Copco 2			
Description	:	Left Side Coffer Dam- Load & Hauloff Material	Group	: D07			
Quantity	:	15.00 LD					
Daily Production	:	15.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	1.0 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$1,158.17 per LD	Probable Low Cost Parameter		17.25	\$14,767	\$984.44
Total Cost	:	\$17,372	Probable High Cost Parameter		12	\$20,847	\$1,389.80

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	2.00	1.0	10	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.46
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Equipment Operator (crane)	Active	1.00	1.0	10	10.00	L	\$81.60	incl. in rate	incl. in rate	\$815.98
Crawler Crane (130tn)	Active	1.00	1.0	10	10.00	E	\$262.91	incl. in rate	incl. in rate	\$2,629.10
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.0	10	10.00	Е	\$76.00	incl. in rate	incl. in rate	\$760.00
Pile Driver	Active	2.00	1.0	10	20.00	L	\$78.56			\$1,571.20
			L	abor Hours	70				TOTAL LABOR	\$4,720.72
			Equip	ment Hours	20				TOTAL EQUIPMENT	\$3,389.10

Description	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost \$0.00
			,			
					TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Freight Cost 20 ton/load	15 LD		\$600.00		\$9,000.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$9.000.00

SUMMARY OF COSTS				
Labor Cost	\$4,720.72 Labor Burden @	0.0% \$0.00		\$4,720.72
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$3,389.10 Equipment Tax @	7.75% \$262.66		\$3,651.76
Subcontractors	\$9,000.00			\$9,000.00
DIRECT COST SUBTOTALS	\$17,110	\$263	DIRECT COST SUBTOTALS	\$17,372
Additional Pay Item Notes :				

PAY ITEM COST DETAIL WORKSHEET 3.006 Coffer Dam Backfill allowance

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.006	Project	: KRRP - Copco 2	2		
Description	:	Coffer Dam Backfill allowance	Group	: D10			
Quantity	:	1.00 LS					
Daily Production	:	1.00 LS per 10 hour shift	Project #	: 3			
Work Days	:	1.0 Days	Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$50,000.00 per LS	Probable Low Cost Parameter		1.15	\$42,500	\$42,500.00
Total Cost	:	\$50,000	Probable High Cost Parameter		0.8	\$60,000	\$60,000.00

CREW COSTS											
	Description	Active	# in		Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
		Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
0											
				Lab	or Hours	0				TOTAL LABOR	\$0.00
					ent Hours	0				TOTAL EQUIPMENT	\$0.00
				Equipme	ent Houl S	Ū				TOTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item Ord		Order	Order		Material
	Quantity Un	it Factor / Waste	Quantity	Price		Cost
					TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS			
Description	Quantity Units Notes /	Unit	Contract or Quote
	Company	Price	Amount
Allowance to Haul Material to Coffer Dams	1 LS	\$50,000.00	\$50,000.0
			\$0.0
			\$0.0
			\$0.0
			TOTAL SUBCONTRACTS \$50,000.0

SUMMARY OF COSTS										
Labor Cost	\$0.00 Labor Burden @	0.0%		\$0.00						
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00						
Equipment Cost	\$0.00 Equipment Tax @	7.75% \$0.00		\$0.00						
Subcontractors	\$50,000.00			\$50,000.00						
DIRECT COST SUBTOTALS	\$50,000	\$0	DIRECT COST SUBTOTALS	\$50,000						
Additional Pay Item Notes :										
This items is to provide an allowance amount for base material in the coffer dams to demolish the concrete dam.										

PAY ITEM INFORMATION										
PAY ITEM NUMBER	:	3.007		Project	: KRRP - Copco 2					
Description	:	Provide Dewatering behind le	ft Side Cofferdam	Group	: D07					
Quantity	:	1.00 LS								
Daily Production	:	0.10 LS per	10 hour shift	Project #	: 3					
Work Days	: '	10.0 Days		Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS		
Unit Price	:	\$89,445.13 per LS		Probable Low Cost Parameter		0.11	\$80,501	\$80,500.61		
Total Cost	:	\$89,445		Probable High Cost Parameter		0.09	\$98,390	\$98,389.64		

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Pump, Submersible Trash Pump, 3" & 4"	Active	1.00	120.0	10	1,200.00	E	\$3.87	incl. in rate	incl. in rate	\$4,644.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	30.0	10	300.00	E	\$16.99	incl. in rate	incl. in rate	\$5,097.0
Labor Foreman	Active	1.00	30.0	10	300.00	L	\$58.87	incl. in rate	incl. in rate	\$17,661.6
Laborer	Active	2.00	60.0	10	1,200.00	L	\$51.07	incl. in rate	incl. in rate	\$61,287.6
		•		Labor Hours	1500		•		TOTAL LABOR	\$78,949.2
				oment Hours	1500				TOTAL EQUIPMENT	\$9,741.0

MATERIAL COSTS							
Description	ltem	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL WATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units I	Notes /	Unit		Contract or Quote
		C	ompany	Price		Amount
	•					\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$78,949.20 Labor Burden @	0.0%	\$78,94
laterial Cost	\$0.00 Material Tax @	7.75% \$0.00	
quipment Cost	\$9,741.00 Equipment Tax @	7.75% \$754.93	\$10,49
Subcontractors	\$0.00		
RECT COST SUBTOTALS	\$88,690	\$755	DIRECT COST SUBTOTALS \$85
dditional Pay Item Notes :			
	is. 1 laborer during the day and 1 laborer during the	night will maintain the pump half of the 4 month period, 1 foreman wi	th truck will oversee the operation .25 of the
3" pump will be used for 4 month			

PAY ITEM INFORMATION Project KRRP - Copco 2 Description Quantity
Daily Production
Work Days
Unit Price 36,000.00 GAL 45,000.00 GAL per 0.8 Days \$0.13 per GAL 10 hour shift Project # Estimator
Probable Low Cost Parameter : Eric Jones GAL per 49500 Total Cost \$4,142 Unit Price Per GAL \$0.12 Probable High Cost Parameter **Total Cost** \$4,602 40500 \$5,063 \$0.14

CREW COSTS										
Description	Active Idle	# in	Days Worked	Hours	Total	L/E	Hourly	Hrly oper.	Burden Rate	Labor / Equipment
		crew		/day	Hours		Rate	Cost		Cost
Pump, Submersible Trash Pump, 3" & 4"	Active	1.00	8.0	10	8.00	E	\$3.87	incl. in rate	incl. in rate	\$30.96
Hydraulic Excavator (5.0cy)	Active	1.00	8.0	10	8.00	Е	\$276.50	incl. in rate	incl. in rate	\$2,212.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	8.0	10	8.00	Е	\$16.99	incl. in rate	incl. in rate	\$135.92
Labor Foreman (out)	Active	1.00	8.0	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	2.00	8.0	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Equipment Operator (medium)	Active	1.00	8.0	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Intake and Discharge Hose, 5"		4.00	0.8	10	32.00	Е	\$5.00			\$160.00
				abor Hours	32				TOTAL LABOR	\$1,866.83
			Equip	ment Hours	56				TOTAL EQUIPMENT	\$2,538.88

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
			<u> </u>	-			
						TOTAL MATERIAL	

SUBCONTRACT COSTS					
Description	Quantity	Units Notes /	Unit		Contract or Quote
		Company	Price		Amount
					\$0.00
					\$0.00
					\$0.00
				_	\$0.00
				TOTAL SUBCONTRACTS	\$0.00

				101712 00200111111010	\$0.00
SUMMARY OF COSTS					
Labor Cost	\$1,866.83 Labor Burden @	0.0%			\$1,866.83
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$2,538.88 Equipment Tax @	7.75%	\$196.76		\$2,735.64
Subcontractors	\$0.00				\$0.00
DIRECT COST SUBTOTALS	\$4,406		\$197	DIRECT COST SUBTOTALS	\$4,602
Additional Pay Item Notes :				•	
				the second secon	ı

3" pump will pump down 36,000 gals in .25 of a shift, It will take a full day to set pump up and to pump down area. Excavator will be used to set pump and hoses, laborers will assist equipment with setting up pump and maintaining the pump, 1 foreman with truck will oversee operation.

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Copco 2 Description : D10 Group Quantity
Daily Production
Work Days
Unit Price 125,000.00 GAL per 3.2 Days \$0.02 per GAL Project # Estimator
Probable Low Cost Parameter : Eric Jones GAL per 137500 Total Cost \$8,927 Unit Price Per GAL \$0.02 Total Cost \$9,919 Probable High Cost Parameter 112500 \$10,911 \$0.03

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Pump, Submersible Trash Pump, 3" & 4"	Active	1.00	3.2	10	32.00	E	\$3.87	incl. in rate	incl. in rate	\$123.84
Hydraulic Excavator (5.0cy)	Active	1.00	1.0	10	10.00	Е	\$276.50	incl. in rate	incl. in rate	\$2,765.00
Truck, Pickup (4x4, 3/4tn)	Active	1.00	3.2	10	32.00	E	\$16.99	incl. in rate	incl. in rate	\$543.68
Labor Foreman	Active	1.00	3.2	10	32.00	L	\$58.87	incl. in rate	incl. in rate	\$1,883.90
Laborer	Active	2.00	3.2	10	64.00	L	\$51.07	incl. in rate	incl. in rate	\$3,268.67
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Intake and Discharge Hose, 6"		2.00	3.2	10	64.00	E	\$5.00			\$320.00
			Li	abor Hours	106				TOTAL LABOR	\$5,875.94

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
	•				\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

Material Cost \$0.00 Material Tax @ \$1.75% \$0.00 \$1.75%	\$0.00 \$4,043.34		\$0.00			\$5,875.94	Labor Cost
Subcontractors \$0.00 DIRECT COST SUBTOTALS \$9,628 \$291 DIRECT COST SUBTOTALS				7.75%	Material Tax @	\$0.00	Material Cost
DIRECT COST SUBTOTALS \$9,628 \$291 DIRECT COST SUBTOTALS			\$290.82	7.75%	Equipment Tax @	\$3,752.52	Equipment Cost
	\$0.00					\$0.00	Subcontractors
Additional Pay Item Notes:	\$9,919	DIRECT COST SUBTOTALS	\$291			\$9,628	NRECT COST SUBTOTALS
		-					dditional Pay Item Notes :
It will take roughly 3 days to pump 300,000gallons with a 3" pump. 1 day will be need to set up pump and hoses, excavator will be used 1 day to set up pump, laborers will support equipment during		and the second s				000 000 !! !!! 0!!	troff tale asset to 0 days to asset 000 of

Cost

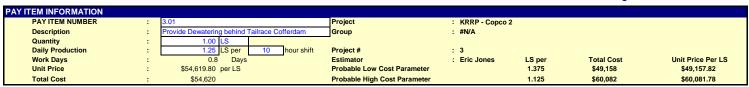
PAY ITEM COST DETAIL WORKSHEET

MATERIAL COSTS

Quantity

Unit

Factor / Waste



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
0			0.8	10	0.00	0	\$0.00	\$0.00		\$0.00
Pump, Submersible Trash Pump, 3" & 4"	Active	2.00	92.0	10	1,840.00	E	\$3.87	incl. in rate	incl. in rate	\$7,120.80
Laborer	Active	1.00	46.0	10	460.00	L	\$51.07	incl. in rate	incl. in rate	\$23,493.58
Labor Foreman	Active	1.00	23.0	10	230.00	L	\$58.87	incl. in rate	incl. in rate	\$13,540.56
Intake and Discharge Hose, 3"		4.00	92.0	10	3,680.00	E	\$2.50			\$9,200.00
									_	
			ı	Labor Hours	690				TOTAL LABOR	\$37,034.14
			Equip	ment Hours	5520				TOTAL EQUIPMENT	\$16,320.80

TOTAL MATERIA	L \$0.00

Quantity

Order Price

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS					
Labor Cost	\$37,034.14 Labor Burden @	0.0%			\$37,034.1
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$16,320.80 Equipment Tax @	7.75%	\$1,264.86		\$17,585.6
Subcontractors	\$0.00				\$0.0
DIRECT COST SUBTOTALS	\$53,355		\$1,265	DIRECT COST SUBTOTALS	\$54,62
Additional Pay Item Notes :					

1 Foreman Involved 1/4 of the time of the pump operation for adjustments and maintenance. 1 Laborer Involved 1/2 of the time of the pump operation for adjustments and maintenance (fueling). 1 Extra pump Added 1 extra pump to help manage water and when pump is down for maintenance.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.011	Project	: KRRP - Copco 2	2		
Description	:	Tailrace Coffer Dam- Furnish & Unload Material	Group	: D10			
Quantity	:	10.00 LD	·				
Daily Production	:	6.00 LD per 10 hour shift	Project #	: 3			
Work Days	:	1.7 Days	Estimator	: Eric Jones	LD per	Total Cost	Unit Price Per LD
Unit Price	:	\$6,917.98 per LD	Probable Low Cost Parameter		6.9	\$58,803	\$5,880.29
Total Cost		\$60.190	Probable High Cost Parameter		40	£02.04£	\$0.204 E0

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew		/day	Hours	L/L	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.7	10	17.00	L	\$58.87	incl. in rate	incl. in rate	\$1,000.82
Laborer	Active	1.00	1.7	10	17.00	L	\$51.07	incl. in rate	incl. in rate	\$868.24
Equipment Operator (medium)	Active	1.00	1.7	10	17.00	L	\$72.34	incl. in rate	incl. in rate	\$1,229.71
Equipment Operator (crane)	Active	1.00	1.7	10	17.00	L	\$81.60	incl. in rate	incl. in rate	\$1,387.17
Crawler Crane (130tn)	Active	1.00	1.7	10	17.00	E	\$262.91	incl. in rate	incl. in rate	\$4,469.47
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.7	10	17.00	E	\$76.00	incl. in rate	incl. in rate	\$1,292.00
Pile Driver	Active	2.00	1.7	10	34.00	L	\$78.56			\$2,671.04
FIIE DIIVEI	Active	2.00	1.7	10	34.00	Ĺ	φ10.30			\$2,071.04
			L	abor Hours	102				TOTAL LABOR	\$7,156.98
			E-mode.	ment Hours	34				TOTAL EQUIPMENT	\$5,761.47

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
24" Combi Pipe Pile (.5" thick wall X 40' long 14 each over 135' line)	560.00	LF	1.060	593.60	\$25.00	\$14,840.00
Sheet Pile AZ-13 5400 SF	51,300.00	Lbs	1.060	54,378.00	\$0.50	\$27,189.00
Rigging Allowance (10% of Material Cost)	1.00	AL	1.000	1.00	\$4,202.90	\$4,202.90

 TOTAL MATERIAL
 \$46,231.90

 SUBCONTRACT COSTS

 Description
 Quantity
 Units
 Notes / Volume
 Unit
 Contract or Quote
 Amount

 Load Allowance
 10 LD
 \$600.00
 \$600.00
 \$6,000.00

TOTAL SUBCONTRACTS \$6,000.00

SUMMARY OF COSTS				
Labor Cost	\$7,156.98 Labor Burden @	0.0%	\$0.00	\$7,156.98
Material Cost	\$46,231.90 Material Tax @	7.75% \$3,5	82.97	\$49,814.87
Equipment Cost	\$5,761.47 Equipment Tax @	7.75% \$4	46.51	\$6,207.98
Subcontractors	\$6,000.00			\$6,000.00
DIRECT COST SUBTOTALS	\$65,150	•	4,029 DIRECT COST SUBTOTAL	\$69,180
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	3.011.1	Project	: KRRP - Copco 2				
Description	:	Tailrace Coffer Dam - Drive Pile	Group	: D10	: D10			
Quantity	:	5,400.00 SF	_					
Daily Production	:	1,500.00 SF per 20 hour shift	Project #	: 3				
Work Days	:	3.6 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF	
Unit Price	:	\$34.68 per SF	Probable Low Cost Parameter		1725	\$159,171	\$29.48	
Total Cost	:	\$187,260	Probable High Cost Parameter		1200	\$224,712	\$41.61	

CREW COSTS Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.6	20	72.00	L	\$58.87	incl. in rate	incl. in rate	\$4,238.78
Laborer	Active	1.00	3.6	20	72.00	L	\$51.07	incl. in rate	incl. in rate	\$3,677.26
Equipment Operator (crane)	Active	1.00	3.6	20	72.00	L	\$81.60	incl. in rate	incl. in rate	\$5,875.06
Equipment Operator (oiler)	Active	1.00	3.6	20	72.00	L	\$73.43	incl. in rate	incl. in rate	\$5,286.60
Vibratory Hammer & Extractor	Active	1.00	3.6	20	72.00	Е	\$94.14	incl. in rate	incl. in rate	\$6,778.08
Welder, Portable	Active	1.00	3.6	20	72.00	Е	\$7.84	incl. in rate	incl. in rate	\$564.30
Crawler Crane (270tn)	Active	1.00	3.6	20	72.00	Е	\$454.10	incl. in rate	incl. in rate	\$32,695.20
Pile Driver	Active	3.00	3.6	20	216.00	L	\$78.56	incl. in rate	incl. in rate	\$16,968.96
D36 Hammer 36X100' Leads	Active	1.00	3.6	20	72.00	Е	\$85.47	incl. in rate	incl. in rate	\$6,153.84
				Labor Hours	504				TOTAL LABOR	\$36,046.66
			Equip	oment Hours	288				TOTAL EQUIPMENT	\$46,191.42

MATERIAL COSTS								
Description	Item	Order	Conversion	Order		Order		Material
	Quantity	Unit	Factor / Waste	Quantity		Price		Cost
PDA Allowance	1.00	AL	1.000		1.00	\$15,000.00		\$15,000.00
PDA Allowance	1.00	AL	1.000		1.00	\$15,000.00		\$15,000.00
							TOTAL MATERIAL	\$15,000.00

SUBCONTRACT COSTS										
Description	Quantity Units	Notes /	Unit		Contract or Quote					
		Company	Price		Amount					
Predrilling for Pipe Pile (20' deep at 14 locations)	280 VLFT		\$126.00		\$35,280.00					
Predrilling Equipment Mob and Demob	1 LS		\$50,000.00		\$50,000.00					
					\$0.00					
					\$0.00					
				TOTAL SUBCONTRACTS	\$85,280.00					

SUMMARY OF COSTS				
Labor Cost	\$36,046.66 Labor Burden @	0.0%		\$36,046.66
Material Cost	\$15,000.00 Material Tax @	7.75% \$1,162.50		\$16,162.50
Equipment Cost	\$46,191.42 Equipment Tax @	7.75% \$3,579.84		\$49,771.26
Subcontractors	\$85,280.00			\$85,280.00
DIRECT COST SUBTOTALS	\$182,518	\$4,742	DIRECT COST SUBTOTALS	\$187,260
Additional Pay Item Notes :				

PAY ITEM INFORMATION													
PAY ITEM NUMBER	:	3.011.2	Project	: KRRP - Copco 2									
Description	:	Tailrace Coffer Dam - Extract Pile	Group	: D10									
Quantity	:	5,400.00 SF	<u> </u>										
Daily Production	:	3,000.00 SF per 20 hour shift	Project #	: 3									
Work Days	:	1.8 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF						
Unit Price	:	\$7.07 per SF	Probable Low Cost Parameter		3450	\$32,451	\$6.01						
Total Cost	:	\$38,177	Probable High Cost Parameter		2400	\$45,813	\$8.48						

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.8	20	36.00	L	\$58.87	incl. in rate	incl. in rate	\$2,119.39
Laborer	Active	1.00	1.8	20	36.00	L	\$51.07	incl. in rate	incl. in rate	\$1,838.63
Equipment Operator (crane)	Active	1.00	1.8	20	36.00	L	\$81.60	incl. in rate	incl. in rate	\$2,937.53
Equipment Operator (oiler)	Active	1.00	1.8	20	36.00	L	\$73.43	incl. in rate	incl. in rate	\$2,643.30
Vibratory Hammer & Extractor	Active	1.00	1.8	20	36.00	E	\$94.14	incl. in rate	incl. in rate	\$3,389.04
Welder, Portable	Active	1.00	1.8	20	36.00	E	\$7.84	incl. in rate	incl. in rate	\$282.15
Crawler Crane (130tn)	Active	1.00	1.8	20	36.00	Е	\$262.91	incl. in rate	incl. in rate	\$9,464.76
		0.00	1.8	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	1.8	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	1.8	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	1.8	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
		0.00	1.8	20	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00
Pile Driver	Active	3.00	1.8	20	108.00	L	\$78.56	incl. in rate	incl. in rate	\$8,484.48
		•	L	abor Hours	252		•		TOTAL LABOR	\$18,023.33
			Equipr	ment Hours	108				TOTAL EQUIPMENT	\$13,135.95

Description Item	Order Conversion	Order	Order	Mater
Quantity	Unit Factor / Waste	Quantity	Price	Cos
		-		

SUBCONTRACT COSTS										
Description	Quantity Units	Notes /	Unit		Contract or Quote					
		Company	Price		Amount					
Load Allowance	10 LD		\$600.00		\$6,000.00					
					\$0.00					
					\$0.00					
					\$0.00					
				TOTAL SUBCONTRACTS	\$6,000.00					

	\$18,023.33 Labor Burden @	0.0%		\$18,023.3
faterial Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.0
quipment Cost	\$13,135.95 Equipment Tax @	7.75% \$1,018.04		\$14,153.9
Subcontractors	\$6,000.00			\$6,000.0
RECT COST SUBTOTALS	\$37,159	\$1,018	DIRECT COST SUBTOTALS	\$38,1
ditional Pay Item Notes :			•	

PAY ITEM COST DETAIL WORKSHEET 3.014 Remove Concrete in Dam

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	3.014			Project	: KRRP - Copco 2			
Description	:	Remove Concrete in Dam			Group	: D10			
Quantity	:	4,430.00 cy							
Daily Production	:	120.00 cy per	10 hou	ur shift	Project #	: 3			
Work Days	:	36.9 Days			Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$168.51 per cy			Probable Low Cost Parameter		138	\$634,532	\$143.24
Total Cost	:	\$746,509			Probable High Cost Parameter		96	\$895,810	\$202.21

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/i	E Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	36.9	10	369.00	L	\$58.87	incl. in rate	incl. in rate	\$21,723.7
Laborer	Active	3.00	36.9	10	1,107.00	L	\$51.07	incl. in rate	incl. in rate	\$56,537.8
Equipment Operator (medium)	Active	3.00	36.9	10	1,107.00	L	\$72.34	incl. in rate	incl. in rate	\$80,075.9
Truck Driver (heavy)	Active	3.00	28.2	10	845.10	L	\$66.92	incl. in rate	incl. in rate	\$56,557.47
Hydraulic Excavator (5.0cy)	Active	1.00	36.9	10	369.00	E	\$276.50	incl. in rate	incl. in rate	\$102,028.50
Hydraulic Excavator (2.5cy)	Active	1.00	36.9	10	369.00	E	\$205.40	incl. in rate	incl. in rate	\$75,792.60
Loader, FE Rubber Tire (3.5cy)	Active	1.00	36.9	10	369.00	E	\$63.11	incl. in rate	incl. in rate	\$23,287.59
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	36.9	10	369.00	E	\$36.81	incl. in rate	incl. in rate	\$13,582.89
Truck, On-Highway Dump (6x4, 12cy)	Active	3.00	28.2	10	845.10	E	\$57.41	incl. in rate	incl. in rate	\$48,517.19
Acetylene Torches	Active	1.00	36.9	10	369.00	E	\$0.44	incl. in rate	incl. in rate	\$162.36
Air Compressor 600 cfm	Active	1.00	36.9	10	369.00	E	\$21.74	incl. in rate	incl. in rate	\$8,021.66
3 Man Blasting Crew	Active	1.00	36.9	10	369.00	L	\$146.09	incl. in rate	incl. in rate	\$53,907.30
Air Track Drill 4", Air Hoses, Compressor	Active	1.00	36.9	10	369.00	E	\$212.49	incl. in rate	incl. in rate	\$78,407.15
				Labor Hours		3,797			TOTAL LABOR	\$268,802.3
			Ear	ipment Hours		3,428			TOTAL EQUIPMENT	\$349,799.9

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$13,440.12	\$13,440.12
Blasting Material	4,430.00	CY	1.050	4,651.50	5.56	\$25,862.34
Drill Bit Wear Allowance (10% of Drilling Eq)	1.00	LS	1.000	1.00	\$7,840.71	\$7,840.71

TOTAL MATERIAL \$47,143.17

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting and Drilling	10 EA	Cost per Mob	\$5,000.00	\$50,000.00
				\$0.00
				\$0.00
				\$0.00
			TOTAL SUBCONTRACTS	\$50,000.00

SUMMARY OF COSTS						
Labor Cost	\$268,802.31	Labor Burden @	0.0%	\$0.00	Included in hourly labor rate.	\$268,802.31
Material Cost	\$47,143.17	Material Tax @	7.75%	\$3,653.60		\$50,796.77
Equipment Cost	\$349,799.94	Equipment Tax @	7.75%	\$27,109.50		\$376,909.44
Subcontractors	\$50,000.00					\$50,000.00
DIRECT COST SUBTOTALS	\$715 745	•		\$30.763	DIRECT COST SUBTOTALS	\$746 509

Additional Pay Item Notes :

Demolition of the the concrete dam is by a combination of blasting and hydrulic breakers. The material is expected to fall to the down stream side near the power house coffer dam. Equipment will be staged at bottom to process and load trucks as material is provided. Due to the narrow and steep haul routes small 12CY dump trucks have been used to transport material from load out area to the copco 1 disposal site. A concrete sawing subcontractor is expected to periodicly be used during the demo process and an allowance by mob has been used to account for the cost. It is expected that the demolition activity will have reduced production due to the strength of concrete and the amount of oversize reinforcement embedded with in the concrete. Crew Break down is provided in the production notes. This item is to be double shifted with two 10 hour shifts to account for the California in water work retrictions.

PAY	ITEM INFORMATION								
	PAY ITEM NUMBER	:	3.015		Project	: KRRP - Copco 2			
			Remove concrete equipment	slab from top of					
	Description	:	embankment wing dam on rig	ght abutment	Group	: D10			
	Quantity	:	5.00 CY						
	Daily Production	:	18.75 CY per	10 hour shift	Project #	: 3			
	Work Days	:	0.3 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
	Unit Price	:	\$365.40 per CY		Probable Low Cost Parameter		20.625	\$1,644	\$328.86
	Total Cost	:	\$1,827		Probable High Cost Parameter		16.875	\$2,010	\$401.94

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.6
Laborer	Active	1.00	0.3	10	3.00	L	\$51.07	incl. in rate	incl. in rate	\$153.2
Equipment Operator (medium)	Active	1.00	0.3	10	3.00	L	\$72.34	incl. in rate	incl. in rate	\$217.0
Truck Driver (heavy)	Active	1.00	0.3	10	3.00	L	\$66.92	incl. in rate	incl. in rate	\$200.7
Hydraulic Excavator (5.0cy)	Active	1.00	0.3	10	3.00	E	\$276.50	incl. in rate	incl. in rate	\$829.5
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.3	10	3.00	E	\$57.41	incl. in rate	incl. in rate	\$172.2
			Lab	or Hours	12				TOTAL LABOR	\$747.6
			Equipme	ent Hours	6				TOTAL EQUIPMENT	\$1,001.7

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS					
Description	Quantity	Units No	ites / Unit		Contract or Quote
		Con	npany Price		Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS					
Labor Cost	\$747.62 Labor Burden @	0.0%			\$747.62
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$1,001.73 Equipment Tax @	7.75%	\$77.63		\$1,079.36
Subcontractors	\$0.00				\$0.00
DIRECT COST SUBTOTALS	\$1,749		\$78	DIRECT COST SUBTOTALS	\$1,827
Additional Pay Item Notes :					
A many constraints to the control of	at the same and the same at the same				
4 man crew roughly 3 hours to m	obilize to area and haul off material				

MATERIAL COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.016	Project	: KRRP - Copco 2			
Description	:	Remove Concrete Wing wall	Group	: D10			
Quantity	:	240.00 CY					
Daily Production	:	112.00 CY per 20 hour shift	Project #	: 3			
Work Days	:	2.1 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$184.14 per CY	Probable Low	Cost Parameter	123.2	\$39,773	\$165.72
Total Cost	:	\$44,193	Probable High	n Cost Parameter	100.8	\$48,612	\$202.55

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.1	20	42.00	L	\$58.87	incl. in rate	incl. in rate	\$2,472.62
Laborer	Active	1.00	2.1	20	42.00	L	\$51.07	incl. in rate	incl. in rate	\$2,145.07
Equipment Operator (medium)	Active	2.00	2.1	20	84.00	L	\$72.34	incl. in rate	incl. in rate	\$6,076.22
Truck Driver (heavy)	Active	1.00	2.1	20	42.00	L	\$66.92	incl. in rate	incl. in rate	\$2,810.81
Hydraulic Excavator (5.0cy)	Active	2.00	2.1	20	84.00	E	\$276.50	incl. in rate	incl. in rate	\$23,226.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	2.1	20	42.00	E	\$57.41	incl. in rate	incl. in rate	\$2,411.22
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.1	20	42.00	Е	\$63.28	incl. in rate	incl. in rate	\$2,657.76
				Labor Hours	210				TOTAL LABOR	\$13,504.72
			Equi	ipment Hours	168				TOTAL EQUIPMENT	\$28,294.98

Description	ltem Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Unit	s Notes /	Unit		Contract or Quote
		Company	Price		Amount
Reinforcement Disposal Fee	21,600 lbs.	Ibs Rebar per CY of Concr€			\$0.00
Rebar Hauling to Facility (30 Miles)	30 Miles	Yreka Recycle			\$0.00
Hauling Cost by Load	1.00 loads	40,000lbs per load	\$200.00		\$200.00
					\$0.00
				TOTAL SUBCONTRACTS	\$200.00

SUMMARY OF COSTS					
Labor Cost	\$13,504.72 Labor	or Burden @ 0.0%			\$13,504.72
Material Cost	\$0.00 Mater	erial Tax @ 7.75%	\$0.00		\$0.00
Equipment Cost	\$28,294.98 Equip	ipment Tax @ 7.75%	\$2,192.86		\$30,487.84
Subcontractors	\$200.00				\$200.00
DIRECT COST SUBTOTALS	\$42,000		\$2,193	DIRECT COST SUBTOTALS	\$44,193
Additional Pay Item Notes :				·	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.017	Project	: KRRP - Copco 2			
Description	:	Right Abutment Removal - Random Fill	Group	: D10			
Quantity	:	1,510.00 CY					
Daily Production	:	300.00 CY per 10 hour shift	Project #	: 3			
Work Days	:	5.0 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$21.01 per CY	Probable Low	Cost Parameter	330	\$28,554	\$18.91
Total Cost	:	\$31,726	Probable High	Cost Parameter	240	\$38,072	\$25.21

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	3.00	5.0	10	150.00	L	\$51.07	incl. in rate	incl. in rate	\$7,660.95
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Truck Driver (heavy)	Active	1.00	5.0	10	50.00	L	\$66.92	incl. in rate	incl. in rate	\$3,346.20
Hydraulic Excavator (2.5cy)	Active	1.00	5.0	10	50.00	E	\$205.40	incl. in rate	incl. in rate	\$10,270.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	5.0	10	50.00	Е	\$57.41	incl. in rate	incl. in rate	\$2,870.50
				Labor Hours	300				TOTAL LABOR	\$17,567.55
			Equ	uipment Hours	100				TOTAL EQUIPMENT	\$13,140.50

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$17,567.55 Labor Burden @	0.0%		\$17,567.55
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$13,140.50 Equipment Tax @	7.75% \$1,018.39		\$14,158.89
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$30,708	\$1,018	DIRECT COST SUBTOTALS	\$31,726
Additional Pay Item Notes :				

TOTAL LABOR

\$3,643.11

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Copco 2 Description Right Abutment Removal - Remove Hand Placed Riprap Group : D10 Quantity Daily Production Work Days Unit Price 6,750.00 SF per 10 hour shift Project # : 3 : Eric Jones SF per 7425 0.8 Days Total Cost Unit Price Per SF Estimator \$1.83 per SF Probable Low Cost Parameter \$8,905 \$1.65 Total Cost \$9,895 Probable High Cost Parameter 6075 \$10,884 \$2.02

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	1.00	8.0	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Equipment Operator (medium)	Active	2.00	8.0	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Truck Driver (heavy)	Active	3.00	8.0	10	24.00	L	\$66.92	incl. in rate	incl. in rate	\$1,606.18
Hydraulic Excavator (5.0cy)	Active	2.00	8.0	10	16.00	Е	\$276.50	incl. in rate	incl. in rate	\$4,424.00
Truck, On-Highway Dump (6x4, 12cy)	Active	3.00	0.8	10	24.00	Е	\$57.41	incl. in rate	incl. in rate	\$1,377.84

Labor Hours

			Equipment Hours	40		TOTAL EQUIPMENT	\$5,801.84
MATERIAL COSTS							
Description	ltem	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

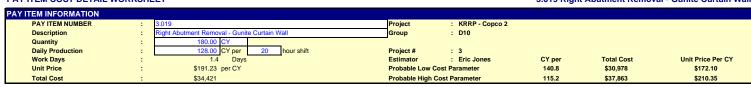
SUMMARY OF COSTS				
Labor Cost	\$3,643.11 Labor Burden @	0.0%		\$3,643.11
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$5,801.84 Equipment Tax @	7.75% \$449.64		\$6,251.48
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$9,445	\$450	DIRECT COST SUBTOTALS	\$9,895
Additional Pay Item Notes :				
Assuming Rip Rap is 12" thick wh	nich will equal 200 CY of material to move. 3 trucks to	otal to be used each truck will haul 6 loads at 10 cv	a load. Total of 200 Cvs roughly 67 cv per truck.	
which is 7 loads a truck.			and the state of t	

TOTAL LABOR

TOTAL EQUIPMENT

\$13,293.28

\$19,236.42



Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.4	20	28.00	L	\$58.87	incl. in rate	incl. in rate	\$1,648.42
Laborer	Active	4.00	1.4	20	112.00	L	\$51.07	incl. in rate	incl. in rate	\$5,720.18
Equipment Operator (medium)	Active	2.00	1.4	20	56.00	L	\$72.34	incl. in rate	incl. in rate	\$4,050.82
Truck Driver (heavy)	Active	1.00	1.4	20	28.00	L	\$66.92	incl. in rate	incl. in rate	\$1,873.87
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	1.4	20	28.00	E	\$57.41	incl. in rate	incl. in rate	\$1,607.48
Air Compressor 900 cfm	Active	1.00	1.4	20	28.00	E	\$38.87	incl. in rate	incl. in rate	\$1,088.33
Air Tool, Chipping Hammer	Active	4.00	1.4	20	112.00	E	\$1.64	incl. in rate	incl. in rate	\$183.57
Generator, Small Generator, 10 - 15 kW	Active	2.00	1.4	20	56.00	E	\$7.04	incl. in rate	incl. in rate	\$394.24
Hydraulic Excavator (5.0cy)	Active	1.00	1.4	20	28.00	E	\$276.50	incl. in rate	incl. in rate	\$7,742.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	1.4	20	28.00	E	\$63.28	incl. in rate	incl. in rate	\$1,771.84
Hydraulic Thumbs/Shear Attachment	Active	1.00	1.4	20	28.00	E	\$24.92	incl. in rate	incl. in rate	\$697.76
Hydraulic Excavator (2.5cy)	Active	1.00	1.4	20	28.00	Е	\$205.40	incl. in rate	incl. in rate	\$5,751.20

Labor Hours

Equipment Hou

224

336

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Uni	s Notes /	Unit		Contract or Quote
		Company	Price		Amount
Reinforcement Disposal Fee	16,200 lbs.	90lbs Rebar per CY of Concrete			\$0.00
Rebar Hauling to Facility (30 Miles)	30 Miles	Yreka Recycle			\$0.00
Hauling Cost by Load	1.00 loads	40,000lbs per load	\$400.00		\$400.00
					\$0.00
				TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS					
Labor Cost	\$13,293.28 Labor Burden @	0.0%			\$13,293.28
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$19,236.42 Equipment Tax @	7.75%	\$1,490.82		\$20,727.24
Subcontractors	\$400.00				\$400.00
DIRECT COST SUBTOTALS	\$32,930		\$1,491	DIRECT COST SUBTOTALS	\$34,421
Additional Pay Item Notes :					

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.020	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - Hand rails and Light Poles	Group	: D08			
Quantity	:	5,000.00 LBS					
Daily Production	:	23,125.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.76 per LBS	Probable Low	Cost Parameter	23125	\$3,442	\$0.69
Total Cost	:	\$3,825	Probable High	Cost Parameter	23125	\$4,207	\$0.84

Quantity : Daily Production : Work Days : Unit Price : Total Cost :	23,125.00	LBS LBS per Days per LBS	10 hour shift		Project # Estimator Probable Low Probable High	Cost Paramet		LBS per 23125 23125	Total Cost \$3,442 \$4,207	Unit Price Per LBS \$0.69 \$0.84
CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle		Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Crane (80tn)	Active	1.00	0.2	10	2.00	Е	\$197.66	incl. in rate	incl. in rate	\$395.32
Equipment Operator (crane)	Active	1.00	0.2	10	2.00	L	\$81.02	incl. in rate	incl. in rate	\$162.04
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.2	10	2.00	Е	\$225.40	incl. in rate	incl. in rate	\$450.80
Electrician	Active	1.00	0.2	10	2.00	L	\$55.25	incl. in rate	incl. in rate	\$110.51
Millwright	Active	6.00	0.2	10	12.00	L	\$81.53	incl. in rate	incl. in rate	\$978.31
Labor Foreman	Active	2.00	0.2	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.39
				Labor Hou	rs 20			•	TOTAL LABOR	\$1,484.25
				Equipment Hou	rs 4			TOTA	L EQUIPMENT	\$846.12
					•	•			-	
MATERIAL COSTS										
escription	Item Quantity	Order Unit		nversion or / Waste	Order Quantity		Order Price			Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS		1.000	1.0	0	\$74.2			\$74.21
								тот	AL MATERIAL	\$74.21
SUBCONTRACT COSTS										
Description Hazardous waste cleanup/pickup/disposal, solid	Quantity	Units		Notes / ompany		Unit Price				Contract or Quote Amount
pickup, bulk material, maximum (10%)	0.25	ton		1.000	0.2	5	\$595.00)		\$148.75
Hauling Cost by Load	3.00	loads				\$400.00				\$1,200.00
								TOTAL SU	BCONTRACTS	\$1,348.75
SUMMARY OF COSTS										
Labor Cost	\$1,484.25	Labor Burden	@	0.0	% \$0.0	0				\$1,484.25
Material Cost	\$74.21	Material Tax @	2	7.8	<mark>%</mark> \$5.7	5				\$79.96
Equipment Cost		Equipment Tax	(@	7.8	% \$65.5	7				\$911.69
Subcontractors	\$1,348.75									\$1,348.75
						_			F	
DIRECT COST SUBTOTALS	\$3,753		_		\$7	_ 1		DIRECT COS	T SUBTOTALS	\$3,825

Crews E-19 for metals demolition, E-12 for welding, E-25 for cutting steel and A-3H for equipment disposal. Assumed hazardous waste 100% of the total lbs, calculated 36 miles from Copco2 to Yreka Transfer Recycling.

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 : D08 Project Description Group Remove & Dispose - Radial Gates and Hoists 66,000.00 LBS 37,500.00 LBS per Quantity Daily Production 10 hour shift Project # 1.8 Days \$0.58 per LBS \$38,356 Work Days Estimator : Mihaela Tomulescu LBS per **Total Cost** Unit Price Per LBS Unit Price Total Cost Probable Low Cost Parameter Probable High Cost Parameter 43125 30000 \$32,603 \$46,027 \$0.49 \$0.70

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.8	10	18.00	L	\$58.35	incl. in rate	incl. in rate	\$1,050.25
Laborer	Active	2.00	1.8	10	36.00	L	\$51.01	incl. in rate	incl. in rate	\$1,836.36
Steelworker	Active	2.00	1.8	10	36.00	L	\$77.55	incl. in rate	incl. in rate	\$2,791.87
Equipment Operator (medium)	Active	1.00	1.8	10	18.00	L	\$72.39	incl. in rate	incl. in rate	\$1,302.98
Equipment Operator (crane)	Active	1.00	1.8	10	18.00	L	\$81.02	incl. in rate	incl. in rate	\$1,458.38
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.8	10	18.00	Е	\$76.00	incl. in rate	incl. in rate	\$1,368.00
Crawler Crane (130tn)	Active	1.00	1.8	10	18.00	Е	\$262.91	incl. in rate	incl. in rate	\$4,732.38
Welder	Active	1.00	1.8	10	18.00	L	\$8.62	incl. in rate	incl. in rate	\$155.23

_			
Labor Hours	144	TOTAL LABOR	\$8,595.07
Equipment Hours	36	TOTAL EQUIPMENT	\$6,100.38

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$429.75	\$429.75
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	2,500.00	LF	1.000	2,500.00	\$0.85	\$2,125.00

					TOTAL MATERIAL	\$2,554.75
	•	•	•	<u> </u>	-	
SUBCONTRACT COSTS						
			N1 / /			

Description	Quantity	Units	Notes /	Unit		Contract or Quote
2000p.10	audinity	00	Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	33.00	ton	1.000	33.00	\$595.00	\$19,635.00
Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, maximum	2.00	Load	1.000	2.00	\$400.00	\$800.00

						=
					TOTAL SUBCONTRACTS	\$20,435.00
SUMMARY OF COSTS						
Labor Cost	\$8,595.07	Labor Burden @	0.0%	\$0.00		\$8,595.07
Material Cost	\$2,554.75	Material Tax @	7.8%	\$197.99		\$2,752.75
Equipment Cost	\$6,100.38	Equipment Tax @	7.8%	\$472.78		\$6,573.16

| \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20,435.00 | \$20

30000

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 Description Group : D08 Quantity 95,800.00 LBS 37,500.00 LBS per 10 hour shift **Daily Production** Project # Days **Work Days** 2.6 Estimator : Mihaela Tomulescu LBS per **Total Cost** Unit Price Per LBS \$0.36 per LBS \$34,294 Unit Price Total Cost Probable Low Cost Parameter Probable High Cost Parameter \$29,150 \$41,153 \$0.30 \$0.43 43125

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.6	10	26.00	L	\$58.35	incl. in rate	incl. in rate	\$1,517.02
Laborer	Active	2.00	2.6	10	52.00	L	\$51.01	incl. in rate	incl. in rate	\$2,652.52
Steelworker	Active	2.00	2.6	10	52.00	L	\$77.55	incl. in rate	incl. in rate	\$4,032.70
Equipment Operator (medium)	Active	1.00	2.6	10	26.00	L	\$72.39	incl. in rate	incl. in rate	\$1,882.09
Equipment Operator (crane)	Active	1.00	2.6	10	26.00	L	\$81.02	incl. in rate	incl. in rate	\$2,106.55
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.6	10	26.00	E	\$76.00	incl. in rate	incl. in rate	\$1,976.00
Crawler Crane (130tn)	Active	1.00	2.6	10	26.00	E	\$262.91	incl. in rate	incl. in rate	\$6,835.66
Welder	Active	2.00	2.6	10	52.00	L	\$8.62	incl. in rate	incl. in rate	\$448.44

Labor Hours 234 TOTAL LABOR \$12,639.32 Equipment Hours 52 TOTAL EQUIPMENT \$8,811.66

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$631.97	\$631.97
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	5,000.00	LF	1.000	5,000.00	\$0.85	\$4,250.00

TOTAL MATERIAL \$4,881.97

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid						
pickup, bulk material, maximum (20%)						
	9.58	ton	1.000	9.58	\$595.00	\$5,700.10
Harrandova vyasta elegavya/sielyya/dienegal						
Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80						
drums or 25 C.Y. or 18 tons, maximum	3.00	Load	1.000	3.00	\$400.00	\$1,200.00
drums of 25 C.T. of To tons, maximum	3.00	Load	1.000	3.00	Ψ400.00	\$1,200.00
					TOTAL SUBCONT	RACTS \$6,900.10

SUMMARY OF COSTS \$12,639.32 Labor Burden @ \$12,639,32 Labor Cost 0.0% \$0.00 \$4,881.97 Material Tax @ \$8,811.66 Equipment Tax (Material Cost 7.8% 7.8% \$378.35 \$5,260.32 Equipment Cost Equipment Tax @ \$682.90 \$9,494.56 \$6,900.10 Subcontractors DIRECT COST SUBTOTALS \$33,233 \$1,061 DIRECT COST SUBTOTALS \$34,294 Additional Pay Item Notes :

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 : D07 Project Group Description 1.00 EA 1.25 EA per Quantity **Daily Production** 10 hour shift Project # Work Days Estimator 0.8 Days : Mihaela Tomulescu **Total Cost** Unit Price Per EA EA per \$1,347.21 per EA \$1,347 Probable Low Cost Parameter Probable High Cost Parameter Unit Price Total Cost 1.375 1.125 \$1,212 \$1,482 \$1,212.49 \$1,481.93

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician	Active	2.00	0.8	10	16.00	L	\$55.25	incl. in rate	incl. in rate	\$884.05
				Labor Hours	16			7	TOTAL LABOR	\$884.05
				Equipment Hours	0			TOTA	L EQUIPMENT	\$0.00

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 0.5% labor (Side Cutter, Sharp-Nose Pliers, Sharp Tip Tweezers PCB Clamp, etc)	4.86	LS	1.000	4.86	\$88.40		\$429.85
						TOTAL MATERIAL	\$429.8

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

oor Cost	\$884.05	Labor Burden @	0.0%	\$0.00		\$884.0
faterial Cost	\$429.85	Material Tax @	7.8%	\$33.31		\$463.1
quipment Cost	\$0.00	Equipment Tax @	7.8%	\$0.00		\$0.0
ubcontractors	\$0.00					\$0.0
RECT COST SUBTOTALS	\$1,314			\$33	DIRECT COST SUBTOTALS	\$1,34

Assumed that two electrician will work one day to unconnect and remove the control panel and the gate motor.

\$429.85

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM IN	IFORMATION								
PAY IT	EM NUMBER	:	3.024		Project	: KRRP - Copco 2			
Descri	ption	:	Remove & Dispose - Spillway radi	ial gate motor & control panel	Group	: D07			
Quant	ity	:	1.00 EA						
Daily F	Production	:	1.25 EA per	10 hour shift	Project #	: 3			
Work I	Days	:	0.8 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit P	rice	:	\$1,347.21 per EA		Probable Low (Cost Parameter	1.375	\$1,212	\$1,212.49
Total (Cost		\$1.347		Probable High	Cost Parameter	1.125	\$1.482	\$1.481.93

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician	Active	2.00	0.8	10	16.00	L	\$55.25	incl. in rate	incl. in rate	\$884.0
				Labor Hours	16			1	TOTAL LABOR	\$884.0
				Equipment Hours	0				L EQUIPMENT	\$0.0

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
	Quantity	Ollit	Factor / Waste	Quantity	File	Cost
Consumables 0.5% labor (Side Cutter, Sharp-Nose Pliers, Sharp Tip Tweezers PCB Clamp, etc)	4.86	LS	1.000	4.86	\$88.40	\$429.85

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00 \$0.00
					_	\$0.00
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS	\$204.05	Lakas Burdan (8	0.000	# 0.00		6004.0
Labor Cost		Labor Burden @	0.0%	\$0.00		\$884.05
Material Cost	\$429.85	Material Tax @	7.8%	\$33.31		\$463.1
Equipment Cost	\$0.00	Equipment Tax @	7.8%	\$0.00		\$0.00
Subcontractors	\$0.00					\$0.0
DIRECT COST SUBTOTALS	\$1,314			\$33	DIRECT COST SUBTOTALS	\$1,34
Additional Pay Item Notes :						
Assumed that two electrician will wor	k one day to unconnect a	and remove the control panel	and the gate motor.			

\$107.46

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER Project : KRRP - Copco 2 Description Group Quantity
Daily Production 10 hour shift Project # Work Days 0.8 Days Estimator : Mihaela Tomulescu EA per Total Cost Unit Price Per EA Unit Price Total Cost \$557.81 per EA \$558 Probable Low Cost Parameter Probable High Cost Parameter 1.375 1.125 \$502 \$614 \$502.03 \$613.60

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician	Active	1.00	0.8	10	8.00	L	\$55.25	incl. in rate	incl. in rate	\$442.02
				Labor Hours	8			1	OTAL LABOR	\$442.02
				Equipment Hours	0			TOTA	LEQUIPMENT	\$0.00

Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
2.43	LS	1.000	2.43	\$44.20	\$107.4
	•	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price	<u> </u>	Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$442.02	Labor Burden @	0.0%	\$0.00		\$442.02
Material Cost	\$107.46	Material Tax @	7.8%	\$8.33		\$115.79
Equipment Cost	\$0.00	Equipment Tax @	7.8%	\$0.00		\$0.00
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$549			\$8	DIRECT COST SUBTOTALS	\$558
Additional Pay Item Notes :						
Assumed that one electrician will v	work one day to unconne	ct and remove the festoon cab	ole, control panel and the motor.			

\$0.00

PAY ITEM COST DETAIL WORKSHEET

I	PAY ITEM INFORMATION							
I	PAY ITEM NUMBER	:	3.026	Project	: KRRP - Copco 2			
ı	Description	:	Remove & Dispose - Distribution equipment, panelboards	Group	: D03			
ı	Quantity	:	1.00 EA	<u></u>				
ı	Daily Production	:	0.63 EA per 10 hour shift	Project #	: 3			
ı	Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
ı	Unit Price	:	\$4,888.73 per EA	Probable Low	Cost Parameter	0.6875	\$4,400	\$4,399.85
ı	Total Cost		9.4.8.9.0	Probable High	Cost Parameter	0.5625	\$5 379	\$5 377 60

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.45	incl. in rate	incl. in rate	\$887.25
Electrician	Active	1.00	1.6	10	16.00	L	\$55.25	incl. in rate	incl. in rate	\$884.05
Equipment Operator (crane)	Active	1.00	1.6	10	16.00	L	\$81.02	incl. in rate	incl. in rate	\$1,296.34
Hydraulic Crane (17tn)	Active	1.00	1.6	10	16.00	Е	\$82.43	incl. in rate	incl. in rate	\$1,318.88
						-				
				Labor Hours	48			Т	OTAL LABOR	\$3,067.63
				Equipment Hours	16			TOTA	L EQUIPMENT	\$1,318.88

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 0.5% labor (Side Cutter, Sharp-Nose Pliers, Sharp Tip Tweezers PCB Clamp, etc)	0.00	LS	1.000	0.00	\$153.38	\$0.0

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Amount

Hauling Disosal Cost 1 load 40 miles to Yreka \$400.00

TOTAL SUBCONTRACTS \$400.00

SUMMARY OF COSTS \$0.00 Material Cost \$0.00 Material Tax @ \$0.00 Equipment Tax @ 7.8% \$1,421.09 Equipment Cost \$1,318.88 \$102.21 Subcontractors \$400.00 \$400.00 DIRECT COST SUBTOTALS \$102 DIRECT COST SUBTOTALS \$4,787 \$4,889 Additional Pay Item Notes : Assumed that electrical crew formed of 1 Forman and 1 Electricians will work two days to unconnect and remove the distribution panels. They are going to use same crane and a truck for disposal of spillway intake, trash rake and radial motor & control panel.

3.026

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	3.027		Project	: KRRP - Copco 2			
Description	:	Remove Copper Shingles from	m Roof of Powerhou	se Group	:			
Quantity	:	7,000.00 SF						
Daily Production	:	4,375.00 SF per	10 hour shir	t Project#	: 3			
Work Days	: -	1.6 Days		Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$1.83 per SF		Probable Low	Cost Parameter	4812.5	\$11,511	\$1.64
Total Cost	:	\$12,790		Probable High	Cost Parameter	3937.5	\$14,069	\$2.01

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Carpenter Foreman (out)	Active	1.00	1.6	10	16.00	L	\$85.49	incl. in rate	incl. in rate	\$1,367.87
Carpenters	Active	2.00	1.6	10	32.00	L	\$85.49	incl. in rate	incl. in rate	\$2,735.74
Laborer	Active	3.00	1.6	10	48.00	L	\$51.07	incl. in rate	incl. in rate	\$2,451.50
Truck Driver (heavy)	Active	2.00	1.6	10	32.00	L	\$66.92	incl. in rate	incl. in rate	\$2,141.57
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	1.6	10	32.00	E	\$57.41	incl. in rate	incl. in rate	\$1,837.12
Forklift, Rough Terrain (9,000 lb capacity)	Active	1.00	1.6	10	16.00	Е	\$55.50	incl. in rate	incl. in rate	\$888.00
				Labor Hours	144				TOTAL LABOR	\$9,854.06
			Eq	uipment Hours	48				TOTAL EQUIPMENT	\$2,725.12

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost		Labor Burden @	0.0%			\$9,854.0
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.0
Equipment Cost	\$2,725.12	Equipment Tax @	7.75%	\$211.20		\$2,936.
Subcontractors	\$0.00					\$0.0
RECT COST SUBTOTALS	\$12,579			\$211	DIRECT COST SUBTOTALS	\$12,7
dditional Pay Item Notes :					·	
						,

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Copco 2 Description : D03 Quantity
Daily Production
Work Days
Unit Price Project # : 3
Estimator : Eric Jone
Probable Low Cost Parameter : 3 : Eric Jones 10.6 Days \$145.88 per cy cy per 115.5 Total Cost \$145,739 Unit Price Per cy \$131.30 Total Cost \$161,932 Probable High Cost Parameter 84 \$194,319 \$175.06

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	10.6	10	106.00	L	\$58.87	incl. in rate	incl. in rate	\$6,240.43
Laborer	Active	3.00	10.6	10	318.00	L	\$51.07	incl. in rate	incl. in rate	\$16,241.21
Equipment Operator (medium)	Active	2.00	10.6	10	212.00	L	\$72.34	incl. in rate	incl. in rate	\$15,335.23
Truck Driver (heavy)	Active	1.00	4.7	10	47.00	L	\$66.92	incl. in rate	incl. in rate	\$3,145.43
Air Compressor 900 cfm	Active	1.00	10.6	10	106.00	E	\$38.87	incl. in rate	incl. in rate	\$4,120.11
Air Tool, Chipping Hammer	Active	2.00	10.6	10	212.00	E	\$1.64	incl. in rate	incl. in rate	\$347.48
Generator, Small Generator, 10 - 15 kW	Active	1.00	10.6	10	106.00	E	\$7.04	incl. in rate	incl. in rate	\$746.24
Hydraulic Excavator (5.0cy)	Active	1.00	10.6	10	106.00	E	\$276.50	incl. in rate	incl. in rate	\$29,309.00
Hydraulic Excavator (2.5cy)	Active	1.00	10.6	10	106.00	E	\$205.40	incl. in rate	incl. in rate	\$21,772.40
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	10.6	10	106.00	E	\$63.28	incl. in rate	incl. in rate	\$6,707.68
Acetylene Torches	Active	2.00	10.6	10	212.00	E	\$0.44	incl. in rate	incl. in rate	\$93.28
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	4.7	10	47.00	Е	\$177.47	incl. in rate	incl. in rate	\$8,341.09
3 man Blasting Crew	Active	1.00	10.6	10	106.00	L	\$146.09	incl. in rate	incl. in rate	\$15,485.54
Air Track Drill 4" Airhoses, Compressor	Active	1.00	10.6	10	106.00	Е	\$212.49	incl. in rate	incl. in rate	\$22,523.94
				Labor Hours	78	9			TOTAL LABOR	\$56,447.8
				Equipment Hours	1,10	7			TOTAL EQUIPMENT	\$93,961.21

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$2,822.39		\$2,822.39
						TOTAL MATERIAL	\$2.822.3

Quantity	Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
99,900	lbs.	90lbs Rebar per CY of Concrete			\$0.00
90	Miles	Yreka Recycle			\$0.00
3.00	loads	40,000lbs per load	\$400.00		\$1,200.00
					\$0.00
				TOTAL CURCONTRACTO	\$1,200.0
	99,900	Quantity Units 99,900 lbs. 90 Miles 3.00 loads	Company 99,900 lbs. 90lbs Rebar per CY of Concrete 90 Miles Yreka Recycle	Company Price 99,900 lbs. 90lbs Rebar per CY of Concrete 90 Miles Yreka Recycle	Company Price 99,900 lbs. 90lbs Rebar per CY of Concrete 90 Miles Yreka Recycle

SUMMARY OF COSTS					
Labor Cost	\$56,447.85 Labor Burden @	0.0%	\$0.00 I	ncluded in hourly labor rate.	\$56,447.85
Material Cost	\$2,822.39 Material Tax @	7.75%	\$218.74		\$3,041.13
Equipment Cost	\$93,961.21 Equipment Tax @	7.75%	\$7,281.99		\$101,243.20
Subcontractors	\$1,200.00				\$1,200.00
DIRECT COST SUBTOTALS	\$154,431		\$7,501	DIRECT COST SUBTOTALS	\$161,932
Additional Pay Item Notes :					

This item will be double shifted with two 10 hours shifts due to work window restrictions established by the California in water work permit.

PAY ITEM INFORMATION PAY ITEM NUMBER Project KRRP - Copco 2 emove Structural Steel items associated with Powerhouse 220,000.00 LBS Description Group : D09 Quantity 19,000.00 LBS per 10 hour shift **Daily Production** Project # Work Days 11.6 Days : Mihaela Tomulescı LBS per Unit Price Per LBS Estimator **Total Cost** \$0.64 per LBS **Unit Price Probable Low Cost Parameter** 21850 \$120,533 \$0.55 **Total Cost** \$141,804 Probable High Cost Parameter 16150 \$163,074 \$0.74

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	11.6	10	116.00	L	\$58.35	incl. in rate	incl. in rate	\$6,768.25
Laborer	Active	3.00	11.6	10	348.00	L	\$51.01	incl. in rate	incl. in rate	\$17,751.48
Steelworker	Active	3.00	11.6	10	348.00	L	\$77.55	incl. in rate	incl. in rate	\$26,988.10
Equipment Operator (crane)	Active	1.00	11.6	10	116.00	L	\$81.02	incl. in rate	incl. in rate	\$9,398.44
Equipment Operator (medium)	Active	1.00	11.6	10	116.00	L	\$72.39	incl. in rate	incl. in rate	\$8,397.01
Crawler Crane (130tn)	Active	1.00	11.6	10	116.00	E	\$262.91	incl. in rate	incl. in rate	\$30,497.56
Loader, FE Rubber Tire (5.25cy)	Active	1.00	11.6	10	116.00	E	\$76.00	incl. in rate	incl. in rate	\$8,816.00
Oxygen and Acetylene Torches	Active	3.00	11.6	10	348.00	E	\$0.47	incl. in rate	incl. in rate	\$163.56
				Labor Hours	1044				TOTAL LABOR	\$69,303.27
				Equipment Hours	580			тоти	AL EQUIPMENT	\$39,477.12

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, wrenches, electrodes, welding accessories, etc)	1.00	LS	1.000	1.00	\$10,395.49	\$10,395.49

TOTAL MATERIAL \$10,395.49

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% from total)					
	27.50	ton	Based on 25 % of total weight	\$ 595.00	\$16,362.50
Haul off of material	6.00	Loads	20 tons a load	\$ 400.00	\$2,400.00

TOTAL SUBCONTRACTS \$18,762.50

SUMMARY OF COSTS					
Labor Cost	\$69,303.27 Labor Burden @	0.0%	\$0.00		\$69,303.27
Material Cost	\$10,395.49 Material Tax @	7.8%	\$805.65		\$11,201.14
Equipment Cost	\$39,477.12 Equipment Tax @	7.8%	\$3,059.48		\$42,536.60
Subcontractors	\$18,762.50				\$18,762.50
DIRECT COST SUBTOTALS	\$137,938		\$3,865	DIRECT COST SUBTOTALS	\$141,804
Additional Pay Item Notes :					

Includes columns, beams, crane girders, bracing, misc. shapes, roof trusses, purlins, etc. Assumed contains paint with heavy metals 25% of the total lbs, 36 miles from Copco lake to Yreka transfer recycling.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	3.03		Project	: KRRP - Copco 2			
Description	:	Remove Control House Concre	ete	Group	: D04			
Quantity	:	30.00 CY						
Daily Production	:	37.50 CY per	10 hour shift	Project #	: 3			
Work Days	:	0.8 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$261.14 per CY		Probable Low	Cost Parameter	43.125	\$6,659	\$221.97
Total Cost	:	\$7,834		Probable High	Cost Parameter	30	\$9,401	\$313.36

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	1.00	0.8	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Equipment Operator (medium)	Active	2.00	0.8	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Truck Driver (heavy)	Active	1.00	0.8	10	8.00	L	\$66.92	incl. in rate	incl. in rate	\$535.39
Hydraulic Excavator (5.0cy)	Active	2.00	0.8	10	16.00	Е	\$276.50	incl. in rate	incl. in rate	\$4,424.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.8	10	8.00	Е	\$57.41	incl. in rate	incl. in rate	\$459.28
				Labor Hours	40				TOTAL LABOR	\$2,572.33
			Equi	ipment Hours	24				TOTAL EQUIPMENT	\$4,883.28

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$2,572.33 Labor Burden @	0.0%		\$2,572.3
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.0
Equipment Cost	\$4,883.28 Equipment Tax @	7.75% \$378.45		\$5,261.73
Subcontractors	\$0.00			\$0.0
DIRECT COST SUBTOTALS	\$7,456	\$378	DIRECT COST SUBTOTALS	\$7,83
Additional Pay Item Notes :			•	
1 truck 3 loads and 2 excavators	1 breaking and 1 loading material, foreman managing	g operation and labor flagging trucks.		

\$3,202

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$187.84

\$660.31

19125

Unit Price Per LBS \$0.68 \$0.91

PAY ITEM COST DETAIL WORKSHEET

\$2,785

Total Cost

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project : KRR : D04 Description Quantity Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per **Total Cost Unit Price** \$0.80 per LBS **Probable Low Cost Parameter** 25875 \$2,367

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$58.35	incl. in rate	incl. in rate	\$116.6
Electrician	Active	1.00	0.2	10	2.00	L	\$55.25	incl. in rate	incl. in rate	\$110.5
Steelworker	Active	2.00	0.2	10	4.00	L	\$77.55	incl. in rate	incl. in rate	\$310.2
Welder	Active	1.00	0.2	10	2.00	L	\$8.62	incl. in rate	incl. in rate	\$17.2
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.2	10	2.00	E	\$225.40	incl. in rate	incl. in rate	\$450.8
Hydraulic Crane (17tn)	Active	1.00	0.2	10	2.00	E	\$82.43	incl. in rate	incl. in rate	\$164.8
Equipment Operator (medium)	Active	2.00	0.2	10	4.00	L	\$72.39	incl. in rate	incl. in rate	\$289.5
Gas Welding Machine	Active	1.00	0.2	10	2.00	E	\$2.88	incl. in rate	incl. in rate	\$5.7
Laborer	Active	4.00	0.2	10	8.00	L	\$51.01	incl. in rate	incl. in rate	\$408.0
				Labor Hours	22			Т	OTAL LABOR	\$1,252.2
				Equipment Hours	6			TOTAL	FOLIPMENT	\$621.4

Probable High Cost Parameter

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, wrenches, electrodes, welding accessories, etc.)	1.00	LS	1.000	1.00	\$187.84	\$187.84

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% from total)						
Hauling to Yreka	0.44 1.00	ton load	1.000 20 tons per load	0.44	\$595.00	\$260.31 \$400.00

SUMMARY OF COSTS						
Labor Cost	\$1,252.29	Labor Burden @	0.0%	\$0.00		\$1,252.29
Material Cost	\$187.84	Material Tax @	7.8%	\$14.56		\$202.40
Equipment Cost	\$621.41	Equipment Tax @	7.8%	\$48.16		\$669.57
Subcontractors	\$660.31					\$660.31
DIRECT COST SUBTOTALS	\$2,722			\$63	DIRECT COST SUBTOTALS	\$2,785
Additional Pay Item Notes :						

Assumed structural frames contains paint with heavy metals 25% of the total lbs, 36 miles from Copco lake to Yreka transfer recycling. Crews E-19 for metals demolition, E-12 for welding, E-25 for cutting steel and A-3H for equipment disposal. Assuming using 1 cranes, 1 loader and 1 trucks for disposal.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.032	Project	: KRRP - Copco 2			
Description	:	Remove Shop Building	Group	: D07			
Quantity	:	4,300.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 3			
Work Days	:	3.8 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$17.13 per SF	Probable Low C	Cost Parameter	1293.75	\$62,606	\$14.56
Total Cost	:	\$73,655	Probable High (Cost Parameter	843.75	\$92,068	\$21.41

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.8	10	38.00	L	\$58.87	incl. in rate	incl. in rate	\$2,237.14
Laborer	Active	4.00	3.8	10	152.00	L	\$51.07	incl. in rate	incl. in rate	\$7,763.10
Equipment Operator (medium)	Active	2.00	3.8	10	76.00	L	\$72.34	incl. in rate	incl. in rate	\$5,497.54
Steelworker	Active	2.00	3.8	10	76.00	L	\$78.16	incl. in rate	incl. in rate	\$5,939.78
Hydraulic Excavator (5.0cy)	Active	1.00	3.8	10	38.00	E	\$276.50	incl. in rate	incl. in rate	\$10,507.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	3.8	10	38.00	Е	\$76.00	incl. in rate	incl. in rate	\$2,888.00
			La	abor Hours	342				TOTAL LABOR	\$21,437.55
			Equipn	nent Hours	76				TOTAL EQUIPMENT	\$13,395.00

MATERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material	
,	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
	-			-				\$0.00
						TOTAL MATERIAL		\$0.00

SUBCONTRACT COSTS				
Description	Quantity Unit	s Notes /	Unit	Contract or Quote
		Company	Price	Amount
Dump Fee Coversion (SFXH*.33/27)	631 CY			\$0.00
Conversion CY to Tons (2 tons per CY)	316.00 tons	yreka	\$74.00	\$23,384.00
Hauling cost to landfill	36.00 Loads	18 CY per load	\$400.00	\$14,400.00
				\$0.00
			TOTAL SUBCONTRACTS	\$37,784.00

SUMMARY OF COSTS				
Labor Cost	\$21,437.55 Labor Burden @	0.0%		\$21,437.55
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$13,395.00 Equipment Tax @	7.75% \$1,038.11		\$14,433.11
Subcontractors	\$37,784.00			\$37,784.00
DIRECT COST SUBTOTALS	\$72,617	\$1,038	DIRECT COST SUBTOTALS	\$73,655
Additional Pay Item Notes :				

TOTAL SUBCONTRACTS

\$11,705.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.033	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - 2 - Governor oil systems	Group	: D10			
Quantity	:	38,000.00 LBS					
Daily Production	:	31,250.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	1.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.59 per LBS	Probable Low	Cost Parameter	34375	\$20,119	\$0.53
Total Cost	:	\$22,355	Probable High	Cost Parameter	25000	\$26,826	\$0.71

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.2	10	12.00	L	\$58.35	incl. in rate	incl. in rate	\$700.16
Laborer	Active	4.00	1.2	10	48.00	L	\$51.01	incl. in rate	incl. in rate	\$2,448.48
Equipment Operator (crane)	Active	1.00	1.2	10	12.00	L	\$81.02	incl. in rate	incl. in rate	\$972.25
Equipment Operator (medium)	Active	1.00	1.2	10	12.00	L	\$72.39	incl. in rate	incl. in rate	\$868.66
Electrician	Active	1.00	1.2	10	12.00	L	\$55.25	incl. in rate	incl. in rate	\$663.04
Crawler Crane (130tn)	Active	1.00	1.2	10	12.00	Е	\$262.91	incl. in rate	incl. in rate	\$3,154.92
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.2	10	12.00	E	\$76.00	incl. in rate	incl. in rate	\$912.00
Oxygen and Acetylene Torches	Active	1.00	1.2	10	12.00	E	\$0.47	incl. in rate	incl. in rate	\$5.64
				Labor Hours	96			1	TOTAL LABOR	\$5,652.59
				Equipment Hours	36			TOTA	L EQUIPMENT	\$4,072.56

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, wrenches, electrodes, welding accessories, etc.)	1.00	LS	1.000	1.00	\$565.26	\$565.26

TOTAL MATERIAL \$565.26

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum	19.00	ton	1.000	19.00	\$595.00	\$11,305.00
Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, maximum	1.00	Load	1.000	1.00	\$400.00	\$400.00

Will be removed simultaneously with the demolition of the surrounding concrete. Assumed hazardous waste 100% of the total lbs, calculated 34 miles from Copco1 to Yreka Transfer Recycling.

TOTAL SUBCONTRACTS

\$1,919.75

\$795.68

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.034	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - Cooling water and bearing oil systems	Group	: D10			
Quantity	:	13,300.00 LBS					
Daily Production	:	31,250.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.52 per LBS	Probable Low	Cost Parameter	34375	\$6,167	\$0.46
Total Cost	:	\$6,852	Probable High	Cost Parameter	25000	\$8,222	\$0.62

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.39
Steelworker	Active	2.00	0.4	10	8.00	L	\$77.55	incl. in rate	incl. in rate	\$620.42
Crawler Crane (130tn)	Active	1.00	0.4	10	4.00	E	\$262.91	incl. in rate	incl. in rate	\$1,051.64
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.39	incl. in rate	incl. in rate	\$289.55
Electrician	Active	2.00	0.4	10	8.00	L	\$55.25	incl. in rate	incl. in rate	\$442.02
Laborer	Active	3.00	0.4	10	12.00	L	\$51.01	incl. in rate	incl. in rate	\$612.12
Loader, FE Rubber Tire (5.25cy)	Active	2.00	0.4	10	8.00	E	\$76.00	incl. in rate	incl. in rate	\$608.00
Oxygen and Acetylene Torches	Active	1.00	0.4	10	4.00	E	\$0.47	incl. in rate	incl. in rate	\$1.88
				Labor Hours	36			1	TOTAL LABOR	\$2,197.50
				Equipment Hours	16			TOTA	L EQUIPMENT	\$1,661.52

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$219.75	\$219.75
Selective demolition, torch cutting, steel, 1" thick plate						
(assumption)	2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid					
pickup, bulk material, maximum	0.67	ton	1.000	\$595.00	\$395.68
Hauling to Disposal or recycle site					
	1.00	Load	1.000	\$400.00	\$400.00

5	SUMMARY OF COSTS					
	Labor Cost	\$2,197.50 Labor Burden @	0.0%	\$0.00		\$2,197.50
	Material Cost	\$1,919.75 Material Tax @	7.8%	\$148.78		\$2,068.53
	Equipment Cost	\$1,661.52 Equipment Tax @	7.8%	\$128.77		\$1,790.29
	Subcontractors	\$795.68				\$795.68
C	DIRECT COST SUBTOTALS	\$6,574		\$278	DIRECT COST SUBTOTALS	\$6,852
A	Additional Pay Item Notes :					

Used RS Means: Pipe, metal pipe, to 1-1/2" diam., selective demolition,4890. LF of 1 1/2" oil pipes at 2.72 Lbs. Used 1 Forman, 2 Steelworkers to cut the pipes and 3 Laborers to load the pipes in the truct. The cooling and lubrication systems for the Hydroelectric Barge turbine, speed increaser and generator will be a combination of water and oil. These systems will be isolated from the water passages so that no contamination of passing water will occur. The following is a list of hazardous materials, substances, chemicals, and wastes normally found at a hydropower facility that may require disposal actions if not recycled or reused for their intended purpose:

- recycled or reused for their intended purpo
 1. Polychlorinated Biphenyls (PCBs)
 2. Asbestos
 3. Paint/abrasive blast grit (red lead paint)
 4. Oil
- 5. Mercury 6. Antifreeze
- 7. Halogenated and non-halogenated solvents 8. Greases
- 9. Pesticides (includes herbicides, insecticides, and wood preservatives)

- 9. Pesticiaes (includes nerbiciaes, insecticiaes, and wood p
 10. Petroleum contaminated
 11. Chlorinated fluorocarbons (CFCs) Freon/Halon
 12. Gasoline/diesel (includes product and sludge in tanks)
 13. Batteries (includes acid)
- 14. Water treatment sludge (septic tanks/wastewater treatment).

Based on the hazardous materials above assumed hazardous waste 100% of the total lbs

\$65.36

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project : D03 Description Group Quantity
Daily Production hour shift Project # Work Days 0.1 Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS 20625 15000 \$1,204 \$1,605 \$0.45 \$0.59 Unit Price \$0.50 per LBS Probable Low Cost Parameter **Total Cost** \$1.338 Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.35	incl. in rate	incl. in rate	\$58.35
Steelworker	Active	4.00	0.1	10	4.00	L	\$77.55	incl. in rate	incl. in rate	\$310.21
Laborer	Active	4.00	0.1	10	4.00	L	\$51.01	incl. in rate	incl. in rate	\$204.04
Equipment Operator (crane)	Active	1.00	0.1	10	1.00	L	\$81.02	incl. in rate	incl. in rate	\$81.02
Hydraulic Crane (80tn)	Active	1.00	0.1	10	1.00	E	\$197.66	incl. in rate	incl. in rate	\$197.66
Oxygen and Acetylene Torches	Active	1.00	0.1	10	1.00	E	\$0.47	incl. in rate	incl. in rate	\$0.47
				Labor Hours	10			Т	OTAL LABOR	\$653.62
				Equipment Hours	2			TOTAL	EQUIPMENT	\$198.13

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$65.36	\$65.36

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00	\$400.00

TOTAL SUBCONTRACTS \$400.00

SUMMARY OF COSTS					
Labor Cost	\$653.62 Labor Burden @	0.0%	\$0.00		\$653.62
Material Cost	\$65.36 Material Tax @	7.8%	\$5.07		\$70.43
Equipment Cost	\$198.13 Equipment Tax @	7.8%	\$15.36		\$213.49
Subcontractors	\$400.00				\$400.00
DIRECT COST SUBTOTALS	\$1,317		\$20	DIRECT COST SUBTOTALS	\$1,338
Additional Pay Item Notes :					

Crews E-19 for metals demolition, E-25 for cutting steel and A-3H for equipment disposal. Assumed a disposal fee will be required.

\$1,559.67

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Description : D03 Quantity
Daily Production 10 hour shift Project # Work Days 2.0 Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost \$14,851 \$20,092 \$0.28 \$0.37 \$0.32 per LBS Probable Low Cost Parameter 31625 \$17,472 Probable High Cost Parameter 23375

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.35	incl. in rate	incl. in rate	\$1,166.94
Laborer	Active	3.00	2.0	10	60.00	L	\$51.01	incl. in rate	incl. in rate	\$3,060.60
Steelworker	Active	2.00	2.0	10	40.00	L	\$77.55	incl. in rate	incl. in rate	\$3,102.08
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$81.02	incl. in rate	incl. in rate	\$1,620.42
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.39	incl. in rate	incl. in rate	\$1,447.76
Hydraulic Crane (50tn)	Active	1.00	2.0	10	20.00	E	\$136.20	incl. in rate	incl. in rate	\$2,724.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Oxygen and Acetylene Torches	Active	2.00	2.0	10	40.00	E	\$0.47	incl. in rate	incl. in rate	\$18.80
				Labor Hours	160			1	OTAL LABOR	\$10,397.80
				Equipment Hours	80			TOTAL	L EQUIPMENT	\$4,262.80

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$1,559.67	\$1,559.67

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling to Disposal Site Or Recycle Site	2.00	Loads	20 tons a load	\$400.00		\$800.00
					TOTAL SUBCONTRACTS	\$900.00

SUMMARY OF COSTS					
Labor Cost	\$10,397.80 Labor Burden @	0.0%	\$0.00		\$10,397.80
Material Cost	\$1,559.67 Material Tax @	7.8%	\$120.87		\$1,680.54
Equipment Cost	\$4,262.80 Equipment Tax @	7.8%	\$330.37		\$4,593.17
Subcontractors	\$800.00				\$800.00
DIRECT COST SUBTOTALS	\$17,020		\$451	DIRECT COST SUBTOTALS	\$17,472
Additional Pay Item Notes :					
Assumed Crows E-19 for metals	demolition E-12 for welding E-25 for cutting steel and	A A-3H for equipment disposal	R-34A for bauling	Assuming using 2 cranes 1 loader and 2 trucks for disposal	

Assumed Crews E-19 for metals demolition, E-12 for welding, E-25 for cutting steel and A-3H for equipment disposal., B-34A for hauling. Assuming using 2 cranes, 1 loader and 2 trucks for disposal. Using hydraulic impact breaker because columns that are encased in concrete.

\$24,496.16

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D03 Quantity Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS \$0.43 \$0.61 Unit Price \$0.51 per LBS **Probable Low Cost Parameter** 32200 \$283,401 **Total Cost** \$333,413 **Probable High Cost Parameter** 22400 \$400,095

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	23.6	10	236.00	L	\$58.35	incl. in rate	incl. in rate	\$13,769.89
Laborer	Active	3.00	23.6	10	708.00	L	\$51.01	incl. in rate	incl. in rate	\$36,115.08
Electrician Foreman	Active	1.00	23.6	10	236.00	L	\$55.45	incl. in rate	incl. in rate	\$13,086.91
Electrician	Active	2.00	23.6	10	472.00	L	\$55.25	incl. in rate	incl. in rate	\$26,079.42
Steelworker	Active	2.00	23.6	10	472.00	L	\$77.55	incl. in rate	incl. in rate	\$36,604.54
Millwright	Active	2.00	23.6	10	472.00	L	\$81.53	incl. in rate	incl. in rate	\$38,480.27
Equipment Operator (medium)	Active	1.00	23.6	10	236.00	L	\$72.39	incl. in rate	incl. in rate	\$17,083.57
Equipment Operator (crane)	Active	2.00	23.6	10	472.00	L	\$81.02	incl. in rate	incl. in rate	\$38,241.91
Hydraulic Crane (50tn)	Active	1.00	23.6	10	236.00	E	\$136.20	incl. in rate	incl. in rate	\$32,143.20
Loader, FE Rubber Tire (3.5cy)	Active	1.00	23.6	10	236.00	E	\$63.11	incl. in rate	incl. in rate	\$14,893.96
Oxygen and Acetylene Torches	Active	2.00	23.6	10	472.00	E	\$0.47	incl. in rate	incl. in rate	\$221.84
				Labor Hours	3304				TOTAL LABOR	\$219,461.59
				Equipment Hours	944			TOTA	L EQUIPMENT	\$47,259.00

	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 10% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$21,946.16	\$21,946.1
elective demolition torch cutting steel 1" thick						
ate (assumption)	3,000.00	LF	1.000	3,000.00	\$0.85	\$2,550.0
elective demolition, torch cutting, steel, 1" thick ate (assumption)	3,000.00	LF	1.000	3,000.00	\$0.85	

Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)			Company	File		Amount
Wide Load Hauling to Recycle site	33.00 17.00	ton Loads	1.000 1.000	33.00 17.00	\$595.00 \$1,000.00	\$19,635.00 \$17,000.00

SUMMARY OF COSTS					
Labor Cost	\$219,461.59 Labor Burden @	0.0%	\$0.00		\$219,461.59
Material Cost	\$24,496.16 Material Tax @	7.8%	\$1,898.45		\$26,394.61
Equipment Cost	\$47,259.00 Equipment Tax @	7.8%	\$3,662.57		\$50,921.57
Subcontractors	\$36,635.00				\$36,635.00
DIRECT COST SUBTOTALS	\$327,852		\$5,561	DIRECT COST SUBTOTALS	\$333,413
Additional Pay Item Notes :					

The crew will open the engine side panels, and remove the nacelle access panels. Disconnect the engine thermocouple leads at the terminal board. Before disconnecting any lines all fuel, oil, and hydraulic fluid valves are closed. Plug all lines as they are disconnected to prevent entrance of foreign material. Remove the clamps securing the bleed-air ducts at the firewall. Then, disconnect the electrical connector plugs, engine breather and vent lines, and fuel, oil, and hydraulic lines. Disconnect the engine power lever and propeller control rods or cables. Remove the covers from the lift points, attach the sling, and remove slack from the cables using a suitable hoist. The sling must be adjusted to position. Remove the engine mount botts. The engine ready to be removed. Move the engine forward, out of the nacelle structure. Lower the into position on the stand, and secure it prior to removing the engine sling. The crew of 4 Welder are going to cut in pieces the big parts of the turbine to be able to load them in the truck using a loader and dispose. Assumed contains paint with heavy metals 10% of the total lbs, 36 miles from Copco2 to Yreka transfer recycling, due to size of the loads it is expected to have extra cost to account for lead cars and potential permits.

\$1,961.82

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description Quantity : D10 Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per **Total Cost** Unit Price Per LBS Unit Price Total Cost \$0.62 per LBS 32200 22400 \$73,418 \$103,649 \$0.52 \$0.74 Probable Low Cost Parameter \$86,374 Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.35	incl. in rate	incl. in rate	\$2,917.35
Laborer	Active	4.00	5.0	10	200.00	L	\$51.01	incl. in rate	incl. in rate	\$10,202.00
Steelworker	Active	3.00	5.0	10	150.00	L	\$77.55	incl. in rate	incl. in rate	\$11,632.80
Equipment Operator (crane)	Active	2.00	5.0	10	100.00	L	\$81.02	incl. in rate	incl. in rate	\$8,102.10
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.39	incl. in rate	incl. in rate	\$3,619.40
Electrician	Active	1.00	5.0	10	50.00	L	\$55.25	incl. in rate	incl. in rate	\$2,762.65
Crawler Crane (270tn)	Active	1.00	5.0	10	50.00	E	\$454.10	incl. in rate	incl. in rate	\$22,705.00
Hydraulic Crane (80tn)	Active	1.00	5.0	10	50.00	E	\$197.66	incl. in rate	incl. in rate	\$9,883.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	5.0	10	50.00	E	\$76.00	incl. in rate	incl. in rate	\$3,800.00
Oxygen and Acetylene Torches	Active	2.00	5.0	10	100.00	E	\$0.47	incl. in rate	incl. in rate	\$47.00
				Labor Hours	600				TOTAL LABOR	\$39,236.30
				Equipment Hours	250			TOTA	AL EQUIPMENT	\$36,435.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,961.82	\$1,961.82

SUBCONTRACT COSTS Quantity Units Unit Contract or Quote Description Notes / Price Company Amount Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum \$595.00 \$400.00 \$4,165.00 \$1,600.00 7.00 4.00 ton Loads 1.000 7.00 20 tons a load Hauling to Disposal Site Or Recycle Site \$5,765.00 TOTAL SUBCONTRACTS

SUMMARY OF COSTS					
Labor Cost	\$39,236.30 Labor Burden @	0.0%	\$0.00		\$39,236.30
Material Cost	\$1,961.82 Material Tax @	7.8%	\$152.04		\$2,113.86
Equipment Cost	\$36,435.00 Equipment Tax @	7.8%	\$2,823.71		\$39,258.71
Subcontractors	\$5,765.00				\$5,765.00
DIRECT COST SUBTOTALS	\$83,398		\$2,976	DIRECT COST SUBTOTALS	\$86,374
Additional Pay Item Notes :					

Amount

\$400.00

TOTAL SUBCONTRACTS

PAY ITEM COST DETAIL WORKSHEET

Additional Pay Item Notes :

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	3.039	Project : KRRP - Cope	:0 2		
Description	:	Remove & Dispose - Compressed Air Systems	Group : D03			
Quantity	:	1,000.00 LBS				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project # : 3			
Work Days	:	0.133 Days	Estimator : Mihaela Tom	ulescu LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.23 per LBS	Probable Low Cost Parameter	8250	\$1,105	\$1.10
Total Cost	:	\$1,227	Probable High Cost Parameter	6000	\$1,473	\$1.47

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.1	10	1.33	L	\$55.45	incl. in rate	incl. in rate	\$73.94
Steelworker	Active	1.00	0.1	10	1.33	L	\$77.55	incl. in rate	incl. in rate	\$103.40
Laborer	Active	3.00	0.1	10	4.00	L	\$51.01	incl. in rate	incl. in rate	\$204.04
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.1	10	1.33	E	\$225.40	incl. in rate	incl. in rate	\$300.53
Equipment Operator (medium)	Active	1.00	0.1	10	1.33	L	\$72.39	incl. in rate	incl. in rate	\$96.52

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$23.89	\$23.89

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Contract or Quote

Price

Hauling to Disposal Site Or Recycle Site 1.00 Loads 20 tons a load \$400.00

SUMMARY OF COSTS \$23.89 Material Tax @ \$300.53 Equipment Tax @ Labor Cost \$477.90 \$1.85 \$23.29 Material Cost 7.8% \$25.75 \$323.82 Equipment Cost Subcontractors \$400.00 \$400.00 DIRECT COST SUBTOTALS DIRECT COST SUBTOTALS \$1,202 \$25 \$1,227

Used RS Means: assumption for "Pipe, metal pipe, to 1-1/2" diam., selective demolition, 370 LF of 1 1/2" pipes at 2.72 Lbs. Used 1 Steelworkers to cut the pipes and 3 Laborers for hauling.

Company

TOTAL SUBCONTRACTS

\$76.88

\$400.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Group Description Quantity
Daily Production 10 hour shift Project # Days Work Days 0.3 Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost \$1.08 per LBS \$2,266 8250 6000 \$2,039 \$2,719 \$0.97 \$1.29 Probable Low Cost Parameter Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.35	incl. in rate	incl. in rate	\$175.04
Steelworker	Active	2.00	0.3	10	6.00	L	\$77.55	incl. in rate	incl. in rate	\$465.3
Laborer	Active	2.00	0.3	10	6.00	L	\$51.01	incl. in rate	incl. in rate	\$306.0
Equipment Operator (medium)	Active	1.00	0.3	10	3.00	L	\$72.39	incl. in rate	incl. in rate	\$217.1
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.3	10	3.00	E	\$76.00	incl. in rate	incl. in rate	\$228.0
Electrician	Active	1.00	0.3	10	3.00	L	\$55.25	incl. in rate	incl. in rate	\$165.76
Equipment Operator (light)	Active	1.00	0.3	10	3.00	L	\$69.39	incl. in rate	incl. in rate	\$208.1
				Labor Hours Equipment Hours	24				OTAL LABOR	\$1,537.5 \$228.0

MATERIAL COSTS											
Description	Item	Order	Conversion	Order	Order	Material					
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost					
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$76.88	\$76.88					

SUBCONTRACT COSTS				
Description	Quantity Uni		Unit	Contract or Quote
		Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00 Loa	s 20 tons a load	\$400.00	\$400.00
Trading to Disposar Site Strikesyste Site	1.00 200	20 10110 4 1044	\$100.00	Ų 180.85

01 50 51 1 1 0	2 221	00.00		21.507.5
\$1,537.51 Labor Burden @	0.0%	\$0.00		\$1,537.5
\$76.88 Material Tax @	7.8%	\$5.96		\$82.8
\$228.00 Equipment Tax @	7.8%	\$17.67		\$245.6
\$400.00				\$400.0
\$2,242		\$24	DIRECT COST SUBTOTALS	\$2,26
	\$228.00 \$400.00 \$2,242	\$76.88 Material Tax @ 7.8% \$228.00 \$400.00 \$2,242	\$76.88 Material Tax @ 7.8% \$5.96 S228.00 Equipment Tax @ 7.8% \$17.67 \$400.00 \$2,242 \$24	\$76.88 Material Tax @ 7.8% \$5.96 \$228.00 Equipment Tax @ \$17.67 \$400.00

1 electrician for tools.

\$109.03

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.041	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - Plant Water and Fire Protection	Group	: D05			
Quantity	:	3,100.00 LBS					
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.96 per LBS	Probable Low	Cost Parameter	8250	\$2,673	\$0.86
Total Cost	:	\$2,970	Probable High	h Cost Parameter	6000	\$3,564	\$1.15

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.3
Steelworker	Active	2.00	0.4	10	8.00	L	\$77.55	incl. in rate	incl. in rate	\$620.4
Laborer	Active	4.00	0.4	10	16.00	L	\$51.01	incl. in rate	incl. in rate	\$816.
Electrician	Active	1.00	0.4	10	4.00	L	\$55.25	incl. in rate	incl. in rate	\$221.0
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.4
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.39	incl. in rate	incl. in rate	\$289.

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$109.03	\$109.03

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00		\$400.00
		•			TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS				
Labor Cost	\$2,180.53 Labor Burden @	0.0% \$0.00		\$2,180.53
Material Cost	\$109.03 Material Tax @	7.8% \$8.45		\$117.48
Equipment Cost	\$252.44 Equipment Tax @	7.8% \$19.56		\$272.00
Subcontractors	\$400.00			\$400.00
DIRECT COST SUBTOTALS	\$2,942	\$28	DIRECT COST SUBTOTALS	\$2,970
Additional Pay Item Notes :				
Used RS Means : Pipe, metal pipe, to 1-1.	/2" diam., selective demolition, 1140 LF of 1 1/2"	pipes at 2.72 Lbs. Used 1 Forman, 2 Steelwork	ers to cut the pipes and 4 Laborers to load the pipes in the truck.	

TOTAL SUBCONTRACTS

\$58.18

\$2,333.75

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project : D09 Description Quantity **Daily Production** Project # Work Days Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS **Unit Price** \$0.66 per LBS Probable Low Cost Parameter 25437.5 \$3,860 \$0.59 **Total Cost** \$4,289 **Probable High Cost Parameter** 18500 \$5,146 \$0.79

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.35	incl. in rate	incl. in rate	\$175.04
Laborer	Active	2.00	0.3	10	6.00	L	\$51.01	incl. in rate	incl. in rate	\$306.06
Steelworker	Active	2.00	0.3	10	6.00	L	\$77.55	incl. in rate	incl. in rate	\$465.31
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.3	10	3.00	E	\$225.40	incl. in rate	incl. in rate	\$676.20
Equipment Operator (medium)	Active	1.00	0.3	10	3.00	L	\$72.39	incl. in rate	incl. in rate	\$217.16
				Labor Hours	18			т	OTAL LABOR	\$1,163.58
				Equipment Hours	3			TOTAL	L EQUIPMENT	\$676.20

		Conversion	Order	Order	Material
Item	Order				
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$58.18	\$58.18
	Quantity 1.00	•	·	·	· ·

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	3.25	ton	1.000	3.25	\$595.00	\$1,933.75
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00		\$400.00

MMARY OF COSTS					
bor Cost	\$1,163.58 Labor Bu	urden @	0.0%	\$0.00	
aterial Cost	\$58.18 Material	Tax @	7.8%	\$4.51	
uipment Cost	\$676.20 Equipme	ent Tax @	7.8%	\$52.41	
bcontractors	\$2,333.75				
ECT COST SUBTOTALS	\$4,232			\$57	_
litional Pay Item Notes :					

Based on RS Means: Pipe, metal pipe, to 1-1/2* diam., selective demolition, 2390 LF of 1 1/2* fire protection pipes at 2.72 Lbs. Used 1 Forman and 1 Laborers to load in drums and put them in the truck. Calculated 36 miles from Copco 1 to Yreka Transfer Recycling.

Each hydropower facility has at least 150,000 gallons to 250,000 gallon of oil currently in use. This oil would have to be properly disposed of in the event of decommissioning. Oil removed from the turbines and other equipment, including transformer oil, would be either a waste oil or used oil, depending on prior use and contaminants found in the oil. Containerized oil containing contaminants such as solvents are commonly encountered at hydropower facilities. Oil sludges are common in tanks. Oil disposal would likely be costly due to the large volumes found at hydropower facilities and the ease of contamination with other

\$13,830 \$18,440

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$2,692.40

\$1,352.00

24750

18000

Unit Price Per LBS

\$0.43 \$0.58

PAY ITEM COST DETAIL WORKSHEET

Unit Price

Total Cost

 PAY ITEM INFORMATION

 PAY ITEM NUMBER
 3.043
 Project
 : KRRP - Copco 2

 Description
 : Remove & Dispose - Unwatering Piping
 Group
 : D05

 Quantity
 : 32,000.00 | LBS
 Project #
 : 3

 Daily Production
 : 22,500.00 | LBS per | 10 | hour shift
 Project #
 : 3

 Work Days
 : 1.4 | Days
 Estimator
 : Mihaela Tomulescu
 LBS per | Total Cost

\$0.48 per LBS

\$15,367

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
	lule	ciew	Worked	/uay	nours		Nate	Cost	Nate	
Labor Foreman	Active	1.00	1.4	10	14.00	L	\$58.35	incl. in rate	incl. in rate	\$816.86
Laborer	Active	4.00	1.4	10	56.00	L	\$51.01	incl. in rate	incl. in rate	\$2,856.56
Steelworker	Active	4.00	1.4	10	56.00	L	\$77.55	incl. in rate	incl. in rate	\$4,342.91
Equipment Operator (medium)	Active	1.00	1.4	10	14.00	L	\$72.39	incl. in rate	incl. in rate	\$1,013.43
Welder	Active	1.00	1.4	10	14.00	L	\$8.62	incl. in rate	incl. in rate	\$120.73
Gas Welding Machine	Active	1.00	1.4	10	14.00	E	\$2.88	incl. in rate	incl. in rate	\$40.28
Electrician	Active	1.00	1.4	10	14.00	L	\$55.25	incl. in rate	incl. in rate	\$773.54
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.4	10	14.00	E	\$76.00	incl. in rate	incl. in rate	\$1,064.00

Probable Low Cost Parameter

Probable High Cost Parameter

Labor Hours	168	TOTAL LABOR	\$9,924.04
Equipment Hours	28	TOTAL EQUIPMENT	\$1,104.28

Item	Order	Conversion	Order	Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$992.40	\$992.40
2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00
	Quantity 1.00	Quantity Unit	Quantity Unit Factor / Waste 1.00 LS 1.000	Quantity Unit Factor / Waste Quantity 1.00 LS 1.000 1.00	Quantity Unit Factor / Waste Quantity Price 1.00 LS 1.000 1.00 \$992.40

Description	Quantity U	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	1.60	ton	1.000	1.60	\$595.00	\$952.00

SUMMARY OF COSTS					
Labor Cost	\$9,924.04 Labor Burden @	0.0%	\$0.00		\$9,924.04
Material Cost	\$2,692.40 Material Tax @	7.8%	\$208.66		\$2,901.06
Equipment Cost	\$1,104.28 Equipment Tax @	7.8%	\$85.58	1	\$1,189.86
Subcontractors	\$1,352.00				\$1,352.00
DIRECT COST SUBTOTALS	\$15,073		\$294	DIRECT COST SUBTOTALS	\$15,367
Additional Pay Item Notes :					

Used RS Means: Assumed Pipe, metal pipe, to 1-1/2* diam., selective demolition, around 11765 LF of 1 1/2* pipes at 2.72 Lbs. Used Crew formed of 1 Forman, 2 Steelworkers to cut the pipes, 1 Welder to cut steel in inaccessible places, 2 Laborers to haul the pipes in the truck with the loader, 1 electrician to unplug the power and to assure the temporary power at the construction site. Calculated 36 miles from Copco to Yreka Transfer Recycling.

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL MATERIAL

\$5,738.27

\$1,368.00

\$573.83

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D05 Quantity
Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost \$0.82 per LBS \$8,231 6118.75 4450 \$7,408 \$9,877 \$0.74 \$0.99 Probable Low Cost Parameter Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.8	10	18.00	L	\$58.35	incl. in rate	incl. in rate	\$1,050.25
Steelworker	Active	1.00	1.8	10	18.00	L	\$77.55	incl. in rate	incl. in rate	\$1,395.94
Electrician	Active	1.00	1.8	10	18.00	L	\$55.25	incl. in rate	incl. in rate	\$994.55
Equipment Operator (medium)	Active	1.00	1.8	10	18.00	L	\$72.39	incl. in rate	incl. in rate	\$1,302.98
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.8	10	18.00	E	\$76.00	incl. in rate	incl. in rate	\$1,368.00
Electrician	Active	1.00	1.8	10	18.00	L	\$55.25	incl. in rate	incl. in rate	\$994.55

Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
LS	1.000	1.00	\$573.83	\$573.83
	Unit LS		· · · · · · · · · · · · · · · · · · ·	·

Labor Hours

Equipment Hours

90

18

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit	Contract or	
			Company	Price	Amour	nt
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00		\$400.00
					TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS					
Labor Cost	\$5,738.27 Labor Burden @	0.0%	\$0.00		\$5,738.27
Material Cost	\$573.83 Material Tax @	7.8%	\$44.47		\$618.30
Equipment Cost	\$1,368.00 Equipment Tax @	7.8%	\$106.02		\$1,474.02
Subcontractors	\$400.00				\$400.00
DIRECT COST SUBTOTALS	\$8,080		\$150	DIRECT COST SUBTOTALS	\$8,231
Additional Pay Item Notes :					

Assumed 2735 LF of 1 " drainage pipes at 3.66 Lbs. Used 1 Loader and 1 Forman, 1 Steelworkers to cut the pipes and 1 Laborers to load the pipes in the truck.

\$1.509.22

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.044a	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - Petroleum Products from Mech	anical Equip. Group	: D05			
Quantity	:	3,300.00 GAL					
Daily Production	:	1,375.00 GAL per 10 hour shift	Project #	: 3			
Work Days	:	2.4 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$4.74 per GAL	Probable Lov	v Cost Parameter	1512.5	\$14,087	\$4.27
Total Cost	:	\$15,652	Probable Hig	h Cost Parameter	1168.75	\$18,000	\$5.45

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.4	10	24.00	L	\$58.35	incl. in rate	incl. in rate	\$1,400.33
Carpenters, Journeyman	Active	2.00	2.4	10	48.00	L	\$77.03	incl. in rate	incl. in rate	\$3,697.30
Laborer	Active	2.00	2.4	10	48.00	L	\$51.01	incl. in rate	incl. in rate	\$2,448.48
									Ī	
				Labor Hours	120				TOTAL LABOR	\$7,546.10
				Equipment Hours	0			TOTA	AL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item Quantity	Order Unit	onversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 20% labor (absorbant materials, drums, etc)	1.00	LS	1.000	1.00	\$1,509.22	\$1,509.22

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, liquid					
pickup, vacuum truck, stainless steel tank, 5000					
gallons, minimum charge, 4 hours, 2					
galloris, millimum charge, 4 hours, 2	24.00	barra.	DOM Massa 020420404200	\$270.00	₽C 400 00

TOTAL SUBCONTRACTS \$6,480.00

SUMMARY OF COSTS				
Labor Cost	\$7,546.10 Labor Burden @	0.0% \$0.00		\$7,
Material Cost	\$1,509.22 Material Tax @	7.8% \$116.96		\$1,
Equipment Cost	\$0.00 Equipment Tax @	7.8% \$0.00		
Subcontractors	\$6,480.00			\$6
DIRECT COST SUBTOTALS	\$15,535	\$117	DIRECT COST SUBTOTALS	\$

Additional Pay Item Notes :

Petroleum-based products, ranging from fuel oil and hydraulic fluid to lubricating greases and oils, are found throughout every type of power generating plant or system. Lubrication supports bearings and moving parts in all sorts of equipment: pumps, conveyors, feeders, scrubbers, cranes, turbines, and more. A good oil/water separation system will result in a flow of concentrated waste oil to a collection area and a flow of oil-free water ready for secondary processing or discharge. Once an oil layer has been separated from free water, it must be removed for recycling or disposal. Many plants use one or

- more of these oil removal methods, but each has costly limitations:

 1. Absorbent materials. Absorbent mats or materials are frequently used to dam up and absorb excess oils and greases resulting from accidents or the routine operation of machinery. These materials are very effective for preventing the spread of a source leak and very efficient in terms of oil pickup. Yet, their use on large volumes of waste oil results in multiple, recurring costs that can make them impractical as an everyday solution:

 • the costs of the materials themselves
- the labor costs for ordering, stocking, application, and removal
- the costs of used-media collection, disposal, or re-processing/recycling.
 Manually operated "slotted pipes." Many separators feature a "slotted pipe," a pipe located near the top of the vessel that has a horizontal opening. Oil is removed by turning the horizontal opening downward until it meets the floating oil layer, which drains through the pipe to a collection receptacle. These pipes work well on thick layers of oil, but cannot drain off a sheen of oil without draining off a

AECOM assumed the best is Vacuum truck removal method . Used a crew formed of 1 Forman, 2 Laborers and 2 journemen to takeout the petroleum waste, Vacuum-equipped tank trucks are used to remove waste oil from collection points (assumed existing drums or tanks) so that it can be transported to recycling or disposal locations. If the waste oil has been thoroughly separated, highly concentrated, and stored in an appropriate receptacle, this service can be used very efficiently. However, vacuum disposal units are often used to pump oil layers directly off of water. This results in the intake of a significant amount free water along with the waste oil – and a significantly higher cost.

Additional Pay Item Notes :

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$1,509.22

\$6,480.00

:	3.044b	Project	: KRRP - Copco 2			
:	Remove & Dispose - Remove Petroleum Products at or near the Power House	Group	: D04			
:	3,300.00 GAL					
:	1,375.00 GAL per 10 hour shift	Project #	: 3			
:	2.4 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
:	\$4.74 per GAL	Probable Low (Cost Parameter	1512.5	\$14,087	\$4.27
:	\$15,652	Probable High	Cost Parameter	1168.75	\$18,000	\$5.45
		: 1,375.00 GAL per 10 hour shift : 2.4 Days : \$4.74 per GAL	Remove & Dispose - Remove Petroleum Products at or near the Power House Group	Remove & Dispose - Remove Petroleum Products at or near the Power House Group : D04	Remove & Dispose - Remove Petroleum Products at or near the Power House Group	Remove & Dispose - Remove Petroleum Products at or near the Power House Group D04 D04 D05 D05

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.4	10	24.00	L	\$58.35	incl. in rate	incl. in rate	\$1,400.33
Carpenters, Journeyman	Active	2.00	2.4	10	48.00	L	\$77.03	incl. in rate	incl. in rate	\$3,697.30
Laborer	Active	2.00	2.4	10	48.00	L	\$51.01	incl. in rate	incl. in rate	\$2,448.48
				Labor Hours	120				TOTAL LABOR	\$7,546.10
				Equipment Hours	0			тот	AL EQUIPMENT	\$0.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (absorbant materials, etc)	1.00	LS	1.000	1.00	\$1,509.22	\$1,509.22

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment	24.00	hour	RSM Means 028120101260	\$270.00	\$6,480.00

SUMMARY OF COSTS						
Labor Cost	\$7,546.10 Labor Burder	1 @	0.0%	\$0.00		\$7,546.10
Material Cost	\$1,509.22 Material Tax	@	7.8%	\$116.96		\$1,626.19
Equipment Cost	\$0.00 Equipment Ta	ax @	7.8%	\$0.00		\$0.00
Subcontractors	\$6,480.00					\$6,480.00
DIRECT COST SUBTOTALS	\$15,535			\$117	DIRECT COST SUBTOTALS	\$15,652

Used a crew formed of 1 Forman, 2 journeymen, 2 Laborers to takeout the petroleum waste, Vacuum-equipped tank trucks are used to remove old and new oil and the fuel from collection points so that it can be transported to recycling or disposal locations.

TOTAL EQUIPMENT

TOTAL SUBCONTRACTS

\$21,493.12

\$6,000.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION Project Group PAY ITEM NUMBER KRRP - Copco 2 Description : D09 Quantity **Daily Production** Project # Work Days Days Estimator : Mihaela Tomulescu EA per Total Cost Unit Price Per EA 0.275 0.225 \$118,362 \$144,665 \$59,181.18 \$72,332.56 **Unit Price** \$65,756.87 per EA **Probable Low Cost Parameter Total Cost** \$131,514 Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	8.0	10	80.00	L	\$55.45	incl. in rate	incl. in rate	\$4,436.24
Electrician	Active	6.00	8.0	10	480.00	L	\$55.25	incl. in rate	incl. in rate	\$26,521.44
Equipment Operator (oiler)	Active	2.00	8.0	10	160.00	L	\$73.04	incl. in rate	incl. in rate	\$11,687.04
Equipment Operator (crane)	Active	1.00	8.0	10	80.00	L	\$81.02	incl. in rate	incl. in rate	\$6,481.68
Crawler Crane (130tn)	Active	1.00	8.0	10	80.00	E	\$262.91	incl. in rate	incl. in rate	\$21,032.80
Steelworker	Active	6.00	8.0	10	480.00	L	\$77.55	incl. in rate	incl. in rate	\$37,224.96
Labor Foreman	Active	1.00	8.0	10	80.00	L	\$58.35	incl. in rate	incl. in rate	\$4,667.76
Welder	Active	2.00	8.0	10	160.00	L	\$8.62	incl. in rate	incl. in rate	\$1,379.80
Gas Welding Machine	Active	2.00	8.0	10	160.00	Е	\$2.88	incl. in rate	incl. in rate	\$460.32
				Labor Hours	1520				TOTAL LABOR	\$92,398.92

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, e	1.00	LS	1.000	1.00	\$9,239.89	\$9,239.89

240

Equipment Hours

TOTAL MATERIAL \$9,239.89

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling to Yreka increased amount for wide loads	6.00	Loads	20 tons a load	\$	1,000.00	\$6,000.00

SUMMARY OF COSTS						
Labor Cost	\$92,398.92 Labor Bu	urden @	0.0%	\$0.00		\$92,398.92
Material Cost	\$9,239.89 Material 1	Tax @	7.8%	\$716.09		\$9,955.98
Equipment Cost	\$21,493.12 Equipmer	ent Tax @	7.8%	\$1,665.72		\$23,158.83
Subcontractors	\$6,000.00					\$6,000.00
DIRECT COST SUBTOTALS	\$129,132	_		\$2,382	DIRECT COST SUBTOTALS	\$131,514

Additional Pay Item Notes :

Assumed removal of 2 units in 2 weeks, weight per unit around 230000 LBS (stator, rotor, base, exciter assembly). Used RS Means, 2 X R13 Crew formed of 1 Forman, 3 Electricians, 1 Oiler, 0 .25 Equipment Crane, 3 Steelworkers to cut adjacent appurtenances and 1 Welder to cut pipes.

\$2,399.36

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description
Quantity
Daily Production : D04 Project # EA per 2.0625 1.6875 Work Days Days Estimator : Mihaela Tomulescu **Total Cost** Unit Price Per EA Unit Price Total Cost \$7,006.64 per EA \$14,013 \$12,612 \$15,415 \$6,305.98 \$7,707.30 Probable Low Cost Parameter Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	1.1	10	11.00	L	\$55.45	incl. in rate	incl. in rate	\$609.98
Electrician	Active	2.00	1.1	10	22.00	L	\$55.25	incl. in rate	incl. in rate	\$1,215.57
Ironworkers	Active	1.00	1.1	10	11.00	L	\$77.45	incl. in rate	incl. in rate	\$851.90
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.1	10	11.00	E	\$225.40	incl. in rate	incl. in rate	\$2,479.40
Hydraulic Crane (120tn)	Active	1.00	1.1	10	11.00	E	\$242.08	incl. in rate	incl. in rate	\$2,662.88
Laborer	Active	2.00	1.1	10	22.00	L	\$51.01	incl. in rate	incl. in rate	\$1,122.22
Equipment Operator (crane)	Active	1.00	1.1	10	11.00	L	\$81.02	incl. in rate	incl. in rate	\$891.23
Equipment Operator (medium)	Active	1.00	1.1	10	11.00	L	\$72.39	incl. in rate	incl. in rate	\$796.27
				Labor Hours	88				TOTAL LABOR	\$5,487.16
				Equipment Hours	22			TOTA	AL EQUIPMENT	\$5,142.28

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$274.36	\$274.36
Selective demolition, torch cutting, steel, 1" thick						
plate (assumed qty)	2,500.00	LF	1.000	2,500.00	\$0.85	\$2,125.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00	\$400.00
				TOTAL SUBCONTRA	CTS \$400.00

SUMMARY OF COSTS					
Labor Cost	\$5,487.16 Labor Burden @	0.0%	\$0.00		\$5,487.16
Material Cost	\$2,399.36 Material Tax @	7.8%	\$185.95		\$2,585.31
Equipment Cost	\$5,142.28 Equipment Tax @	7.8%	\$398.53		\$5,540.81
Subcontractors	\$400.00				\$400.00
DIRECT COST SUBTOTALS	\$13,429		\$584	DIRECT COST SUBTOTALS	\$14,013
Additional Pay Item Notes :					
Production based on 1 Forman 1	Electrician 1 Welder to cut to remove the electrical equipme	nt and 1 laborer to haul. Eq	uinment used	1 Loader and 1 Crane for disposal Assumed 2 sections, weight	

Production based on 1 Forman, 1 Electrician, 1 Welder to cut to remove the electrical equipment and 1 laborer to haul. Equipment used 1 Loader and 1 Crane for disposal. Assumed 2 sections, weight 1000LBS.

P	AY ITEM INFORMATION								
	PAY ITEM NUMBER	:	3.047		Project	: KRRP - Copco 2			
	Description	:	Remove & Dispose - Surge protection	on equip. for 15 MVA Generator	Group	: D04			
	Quantity	:	2.00 EA						
	Daily Production	:	1.88 EA per	10 hour shift	Project #	: 3			
	Work Days	: '	1.1 Days	<u>.</u>	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
	Unit Price	:	\$1,881.92 per EA		Probable Low	Cost Parameter	2.0625	\$3,387	\$1,693.73
	Total Cost		\$3.764		Probable High	Cost Parameter	1 6975	\$4.140	\$2,070,11

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	1.1	10	11.00	L	\$55.45	incl. in rate	incl. in rate	\$609.98
Electrician	Active	1.00	1.1	10	11.00	L	\$55.25	incl. in rate	incl. in rate	\$607.78
Ironworkers	Active	1.00	1.1	10	11.00	L	\$77.45	incl. in rate	incl. in rate	\$851.90
Laborer	Active	2.00	1.1	10	22.00	L	\$51.01	incl. in rate	incl. in rate	\$1,122.22
				Labor Hours	55				TOTAL LABOR	\$3,191.88
				Equipment Hours	0			TOTA	AL EQUIPMENT	\$0.00

MATERIAL COSTS											
Description	Item	Order	Conversion	Order	Order	Material					
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost					
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$159.59	\$159.59					

TOTAL MATERIAL	\$159.59

SUBCONTRACT COSTS Description	Quantity	Units	Notes /	Unit		Contract or Quote
Description	Quantity	Units	Company	Price		Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00		\$400.00
					TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS								
Labor Cost	\$3,191.88 Labor Burden @	0.0%	\$0.00		\$3,191.88			
Material Cost	\$159.59 Material Tax @	7.8%	\$12.37		\$171.96			
Equipment Cost	\$0.00 Equipment Tax @	7.8%	\$0.00		\$0.00			
Subcontractors	\$400.00				\$400.00			
DIRECT COST SUBTOTALS	\$3,751		\$12	DIRECT COST SUBTOTALS	\$3,764			
Additional Pay Item Notes :								
Accumption for Craw P3: 1 Forman 1 Flortrician 2 Ironworker, to cut rade and 1 Jahorer to haul in the truck. Accumed 2 cartions, weight 900LPS								

\$147.05

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project : D04 Description Quantity
Daily Production Project # Work Days 0.8 Days Estimator : Mihaela Tomulescu EA per **Total Cost** Unit Price Per EA Unit Price Total Cost 2.75 2.125 \$3,149 \$4,024 \$1,574.72 \$2,012.14 \$1,749.69 per EA Probable Low Cost Parameter \$3,499 Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.45	incl. in rate	incl. in rate	\$443.62
Electrician	Active	1.00	0.8	10	8.00	L	\$55.25	incl. in rate	incl. in rate	\$442.02
Ironworkers	Active	2.00	0.8	10	16.00	L	\$77.45	incl. in rate	incl. in rate	\$1,239.12
Laborer	Active	2.00	0.8	10	16.00	L	\$51.01	incl. in rate	incl. in rate	\$816.16
				Labor Hours	48				TOTAL LABOR	\$2,940.93
				Equipment Hours	0			тоти	L EQUIPMENT	\$0.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$147.05	\$147.05

SUBCONTRACT COSTS Quantity Units Contract or Quote Company Price Amount

Hauling to Disposal Site Or Recycle Site 1.00 Loads 20 tons a load \$400.00 \$400.00

TOTAL SUBCONTRACTS \$400.00

SUMIN	IART OF COSTS									
Labor	Cost	\$2,940.93	Labor Burden @	0.0%	\$0.00		\$2,940.93			
Materia	ial Cost	\$147.05	Material Tax @	7.8%	\$11.40		\$158.44			
Equipr	ment Cost	\$0.00	Equipment Tax @	7.8%	\$0.00		\$0.00			
Subco	ontractors	\$400.00					\$400.00			
DIRECT	COST SUBTOTALS	\$3,488			\$11	DIRECT COST SUBTOTALS	\$3,499			
Addition	Additional Pay Item Notes:									
	Assumption for Crew R3: 1 Forman, 1 Electrician, 2 Ironworker, to cut rods and 2 laborer to haul in the truck, (500 lbs)									

TOTAL LABOR

TOTAL EQUIPMEN

TOTAL SUBCONTRACTS

\$8,084.88 \$1,577.54

\$995.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.049	Project	: KRRP - Copco 2			
				Po.4			
Description		Remove & Dispose - Generator Switchgear, 7.2kV-includes unit breakers	Group	: D04			
Quantity	:	1.00 EA					
Daily Production	:	0.50 EA per 10 hour shift	Project #	: 3			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$11,215.25 per EA	Probable Low	Cost Parameter	0.55	\$10,094	\$10,093.72
Total Cost	:	\$11,215	Probable High	Cost Parameter	0.425	\$12,898	\$12,897.53

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.0	10	20.00	L	\$55.45	incl. in rate	incl. in rate	\$1,109.06
Electrician	Active	3.00	2.0	10	60.00	L	\$55.25	incl. in rate	incl. in rate	\$3,315.18
Laborer	Active	2.00	2.0	10	40.00	L	\$51.01	incl. in rate	incl. in rate	\$2,040.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Welder	Active	1.00	2.0	10	20.00	L	\$8.62	incl. in rate	incl. in rate	\$172.48
Gas Welding Machine	Active	1.00	2.0	10	20.00	E	\$2.88	incl. in rate	incl. in rate	\$57.54
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.39	incl. in rate	incl. in rate	\$1,447.76
				_						

MATERIAL COSTS									
Description	Item	Order	Conversion	Order	Order	Material			
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost			
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$404.24	\$404.24			

Labor Hours

Equipment Hou

160

TOTAL MATERIAL	\$404.24

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	1.00	ton	1.000	1.00	\$595.00	\$595.00
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load		\$400.00	\$400.00

SUMMARY OF COSTS						
Labor Cost	\$8,084.88	Labor Burden @	0.0%	\$0.00		\$8,084.88
Material Cost	\$404.24	Material Tax @	7.8%	\$31.33		\$435.57
Equipment Cost	\$1,577.54	Equipment Tax @	7.8%	\$122.26		\$1,699.80
Subcontractors	\$995.00					\$995.00
DIRECT COST SUBTOTALS	\$11,062			\$154	DIRECT COST SUBTOTALS	\$11,215

litional Pay Item Notes :

Used 1 Crews (2 sections each weight around 2400 LBS) formed of 1 Forman, 3 Electrician, 2 laborer to haul with the crane in the truck. Assumed containing hazardous waste that will be disposed at 36 miles away from the construction site to Yreka Transfer Recycling. In normal circumstances, decontaminated residual components could be accepted at landfill sites but Polychlorinated biphenyl, otherwise known as PCB, is a synthetic chemical that is widely used for industrial and commercial use as dielectric fluid in transformers and capacitors because of its high resistance to decomposition, low electrical conductivity, low flammability and high heat capacity. Transformer repair, reconditioning and retro-filling facilities are the major industry sectors that contributes to the spread of PCB contamination. Types of PCB Wastes:

PCB wastes are discarded materials that contain PCB or have been contaminated with PCBs and that are without any commercial, industrial, or economic use. For the purpose of this Code of Practice, PCBs wastes are discarded infection facilities removed from transformers and other equipment o PCB-based heat transfer and hydraulic fluids Metallic solid wastes

PCB equipment such as capacitors, transformers.switchgears, circuit breakers, heat transfer systems, etc.

O Contaminated components removed from electrical equipment such as metal drums, tanks, pumps, metal filters, etc.

TOTAL SUBCONTRACTS

\$995.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER : KRRP - Copco 2 Project Remove & Dispose - Station Service Switchgear, 600-volt (5 sections) Group : D04 Description Daily Production 0.50 EA per 2.0 10 hour shift Project # : 3 Work Days Unit Price Days Estimator : Mihaela Tomulescu EA per **Total Cost** Unit Price Per EA \$10,050.65 per EA Probable Low Cost Parameter \$9,045.59 0.55 \$9,046 **Total Cost** Probable High Cost Parameter 0.425 \$11,558 \$11,558.25

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.0	10	20.00	L	\$55.45	incl. in rate	incl. in rate	\$1,109.06
Electrician	Active	2.00	2.0	10	40.00	L	\$55.25	incl. in rate	incl. in rate	\$2,210.12
Laborer	Active	2.00	2.0	10	40.00	L	\$51.01	incl. in rate	incl. in rate	\$2,040.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.39	incl. in rate	incl. in rate	\$1,447.76
Welder	Active	1.00	2.0	10	20.00	L	\$8.62	incl. in rate	incl. in rate	\$172.48
Gas Welding Machine	Active	1.00	2.0	10	20.00	Е	\$2.88	incl. in rate	incl. in rate	\$57.54

Labor Hours	140	TOTAL LABOR	\$6,979.82	
Equipment Hours	40	TOTAL EQUIPMENT	\$1,577.54	

Item	Order	Conversion	Order	Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$348.99	\$348.99
0.00	LF	1.000	0.00	\$0.85	\$0.00
	Quantity	Quantity Unit	Quantity Unit Factor / Waste 1.00 LS 1.000	Quantity Unit Factor / Waste Quantity 1.00 LS 1.000 1.00	Quantity Unit Factor / Waste Quantity Price 1.00 LS 1.000 1.00 \$348.99

TOTAL MATERIAL \$348.99

Description	Quantity	Units	Notes /	Unit		Contract or Quote
•	•		Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Hauling to Disposal Site Or Recycle Site	1.00 1.00	ton Loads	1.000 20 tons a load	1.00	\$595.00 \$400.00	\$595.00 \$400.00

SUMMARY OF COSTS				
Labor Cost	\$6,979.82	Labor Burden @	0.0%	\$0.00
Material Cost	\$348.99	Material Tax @	7.8%	\$27.05
Equipment Cost	\$1,577.54	Equipment Tax @	7.8%	\$122.26
Subcontractors	\$995.00			
DIRECT COST SUBTOTALS	\$9,901			\$149
Additional Pay Item Notes :				

Used 1 Crew formed of 1 Forman, 2 Electrician, 1 welder to cut, 2 laborer to haul with the loader in the truck. Assumed containing hazardous waste that will be disposed. Calculated 34 miles from Copco 1 to Yreka Transfer Recycling.

\$159.95

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.051	Project : K	RRP - Copco 2			
Description	:	Remove & Dispose - Unit and plant control switchboard	Group : D	04			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project # : 3				
Work Days	:	0.8 Days	Estimator : N	lihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,714.49 per EA	Probable Low Cost Page 1	arameter	1.375	\$5,143	\$5,143.04
Total Cost		\$5.714	Probable High Cost P	arameter	1.0625	\$6.572	\$6.571.66

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.45	incl. in rate	incl. in rate	\$443.62
Electrician	Active	4.00	0.8	10	32.00	L	\$55.25	incl. in rate	incl. in rate	\$1,768.10
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.39	incl. in rate	incl. in rate	\$579.10
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Laborer	Active	1.00	0.8	10	8.00	L	\$51.01	incl. in rate	incl. in rate	\$408.08
				Labor Hours	56				TOTAL LABOR	\$3,198.90

	Order	Order	Conversion	Order	Item	Description
Cost	Price	Quantity	Factor / Waste	Unit	Quantity	
\$159.95	\$159.95	1.00	1.000	LS	1.00	Consumables 5% labor (saw blades, drill bits, etc
\$0.00	\$0.85	0.00	1.000	LF	0.00	Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	0.00	ton	1.000	0.00	\$595.00	\$0.30
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load		\$400.00	\$400.00
					TOTAL SUBCONTRACTS	\$400.30

SUMMARY OF COSTS									
Labor Cost	\$3,198.90 Labor Burden @	0.0% \$0.00		\$3,198.90					
Material Cost	\$159.95 Material Tax @	7.8% \$12.40		\$172.34					
Equipment Cost	\$1,803.20 Equipment Tax @	7.8% \$139.75		\$1,942.95					
Subcontractors	\$400.30			\$400.30					
DIRECT COST SUBTOTALS	\$5,562	\$152	DIRECT COST SUBTOTALS	\$5,714					
Additional Pay Item Notes :									
Assumed 2 day of work to dispose unit and plant control switchboard with R3 electrical crew and laborers for hauling with the loader in the truck.									

\$674.64

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.052	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose - Battery system	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.63 EA per 10 hour shift	Project #	: 3			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$8,584.36 per EA	Probable Low C	ost Parameter	0.6875	\$7,726	\$7,725.93
Total Cost	:	\$8,584	Probable High (cost Parameter	0.53125	\$9,872	\$9,872.02

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.35	incl. in rate	incl. in rate	\$933.55
Electrician	Active	2.00	1.6	10	32.00	L	\$55.25	incl. in rate	incl. in rate	\$1,768.10
Laborer	Active	4.00	1.6	10	64.00	L	\$51.01	incl. in rate	incl. in rate	\$3,264.64
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.0	10	10.00	E	\$63.11	incl. in rate	incl. in rate	\$631.10
Equipment Operator (light)	Active	1.00	1.0	10	10.00	L	\$69.39	incl. in rate	incl. in rate	\$693.90
Welder	Active	1.00	1.0	10	10.00	L	\$8.62	incl. in rate	incl. in rate	\$86.24
Gas Welding Machine	Active	1.00	1.0	10	10.00	E	\$2.88	incl. in rate	incl. in rate	\$28.77
				Labor Hours	132				TOTAL LABOR	\$6,746.43
				Equipment Hours	20			тот	AL EQUIPMENT	\$659.87

		Conversion	Order	Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$674.64	\$674.6
	•	•			,

Quantity	Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
				\$0.00
1.00	Loads	20 tons a load	\$400.00	\$400.00
			TOTAL SUBCONTRACTS	\$400.00
	•	·	Company	Company Price

SUMMARY OF COSTS						
Labor Cost	\$6,746.43	Labor Burden @	0.0%	\$0.00		\$6,746.43
Material Cost	\$674.64	Material Tax @	7.8%	\$52.28		\$726.93
Equipment Cost	\$659.87	Equipment Tax @	7.8%	\$51.14		\$711.01
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$8,481			\$103	DIRECT COST SUBTOTALS	\$8,584
Additional Pay Item Notes :						

Assuming 2 days of work disposing around 100 batteries, racks and supports. Using Crews E-19 for metals demolition, E-12 and E-25 for cutting steel and A-3H for equipment disposal, B-34A for hauling.

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D05 Quantity
Daily Production 10 hour shift Project # Work Days 1.6 Days Estimator : Mihaela Tomulescu Total Cost Unit Price Per EA EA per \$12,669 \$16,188 Unit Price \$14,076.70 per EA **Probable Low Cost Parameter** 0.6875 \$12,669.03 Probable High Cost Parameter **Total Cost** \$14.077 0.53125 \$16,188.21

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.35	incl. in rate	incl. in rate	\$933.55
Electrician	Active	4.00	1.6	10	64.00	L	\$55.25	incl. in rate	incl. in rate	\$3,536.19
Laborer	Active	6.00	1.6	10	96.00	L	\$51.01	incl. in rate	incl. in rate	\$4,896.96
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.6	10	16.00	E	\$63.11	incl. in rate	incl. in rate	\$1,009.76
Equipment Operator (light)	Active	1.00	1.6	10	16.00	L	\$69.39	incl. in rate	incl. in rate	\$1,110.24
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.45	incl. in rate	incl. in rate	\$887.25
				Labor Hours	208				TOTAL LABOR	\$11,364.19
				Equipment Hours	16			1017	AL EQUIPMENT	\$1,009.70

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 10% labor (saw blades, drill bit etc)		LS	1.000	1.00	\$1,136.42		\$1,136
						TOTAL MATERIAL	\$1,13
UBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hauling to Disposal Site Or Recycle Site			00 1000 0 1000 1		\$400.00		\$400
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load				

Labor Cost \$11,364.19 | Labor Burden @ 0.0% \$0.00 | \$11,364.19 | Material Cost \$11,364.29 | Material Tax @ 7.8% \$88.07 | \$1,224.49 | \$1,224.49 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,009.76 | \$1,00

Assumption for removal of control power cable, conduit (3000 LF) and cable tray (300 LF) - using R3 electrical crew and laborers for hauling with the loader.

PAY ITEM INFORMATION PAY ITEM NUMBER
Description
Quantity
Daily Production KRRP - Copco 2 Project Group : KRR : D05 10 hour shift Project # EA per 1.375 1.0625 Work Days 0.8 Days Estimator : Mihaela Tomulescu Total Cost Unit Price Per EA Unit Price Total Cost \$2,952.33 per EA \$2,952 \$2,657 \$3,395 \$2,657.09 \$3,395.18 **Probable Low Cost Parameter** Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.35	incl. in rate	incl. in rate	\$466.78
Electrician	Active	1.00	0.8	10	8.00	L	\$55.25	incl. in rate	incl. in rate	\$442.02
aborer	Active	2.00	0.8	10	16.00	L	\$51.01	incl. in rate	incl. in rate	\$816.16
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.39	incl. in rate	incl. in rate	\$579.10
				Labor Hours	40				TOTAL LABOR	\$2,304.0

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits,							
etc)	1.00	LS	1.000	1.00	\$230.41		\$230.41
						TOTAL MATERIAL	\$230.41
						TOTAL MATERIAL	\$230.41
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quote

		Company	Price		Amount
Hauling to Disposal Site Or Recycle Site	1.00 Loads	20 tons a load		\$400.00	\$400.00
				TOTAL SUBCONTRACTS	\$400.00
SUMMARY OF COSTS					
Labor Cost	\$2,304.06 Labor Burden @	0.0%	\$0.00		\$2,304.06
Material Cost	\$230.41 Material Tax @	7.8%	\$17.86		\$248.26
Equipment Cost	\$0.00 Equipment Tax @	7.8%	\$0.00		\$0.00
Subcontractors	\$400.00				\$400.00
DIRECT COST SUBTOTALS	\$2,934		\$18	DIRECT COST SUBTOTALS	\$2,952
Additional Pay Item Notes :					
Assumption for removal of 3' v 2' v 9" I	opards - 10 each using R3 electrical crew a	and laborers for bauling with the loader			

Assumption for removal of 3' x 2' x 9" boards - 10 each using R3 electrical crew and laborers for hauling with the loade

TOTAL SUBCONTRACTS

\$58.48

\$400.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.055	Project	: KRRP - Copco 2			
Benediction		David & Director T. 40 Text Transition Construction India (0.0011a)	0	Dos			
Description	:	Remove & Dispose - 7 - 40-Ton Travelling Crane motors-hoist (2-30Hp)	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 3			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,484.52 per EA	Probable Low	Cost Parameter	2.75	\$2,236	\$2,236.07
Total Cost		\$2.485	Probable High	Cost Parameter	2.125	\$2.857	\$2.857.20

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Crane (80tn)	Active	1.00	0.4	10	4.00	E	\$197.66	incl. in rate	incl. in rate	\$790.64
Laborer	Active	3.00	0.4	10	12.00	L	\$51.01	incl. in rate	incl. in rate	\$612.12
Equipment Operator (crane)	Active	1.00	0.4	10	4.00	L	\$81.02	incl. in rate	incl. in rate	\$324.08
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.39
				Labor Hours	20				TOTAL LABOR	\$1,169.59
				Equipment Hours	4			тоти	AL EQUIPMENT	\$790.64

MATERIAL COSTS						
Description	Item	Order	Conversion Factor / Waste	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$58.48	\$58.48

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00	\$400.00

SUMMARY OF COSTS									
Labor Cost	\$1,169.59	Labor Burden @	0.0%	\$0.00		\$1,169.5			
Material Cost	\$58.48	Material Tax @	7.8%	\$4.53		\$63.0			
Equipment Cost	\$790.64	Equipment Tax @	7.8%	\$61.27		\$851.9			
Subcontractors	\$400.00					\$400.00			
DIRECT COST SUBTOTALS	\$2,419			\$66	DIRECT COST SUBTOTALS	\$2,48			
Additional Pay Item Notes :									
Assumed removal of hoist, hoist trolley, gantry: 1 Steelworker and 1 Laborers to load the overhead crane motors in the truck using the crane.									

\$84.49

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	3.056	Project : KRRP - Copco 2			
Description	:	Remove & Dispose - 40-Ton Travelling Crane control equipment	Group : D10			
Quantity	:	1.00 EA				
Daily Production	:	1.50 EA per 10 hour shift	Project # : 3			
Work Days	:	0.7 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,671.60 per EA	Probable Low Cost Parameter	1.65	\$3,304	\$3,304.44
Total Cost	:	\$3.672	Probable High Cost Parameter	1.275	\$4.222	\$4,222,34

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.7	10	7.00	L	\$58.35	incl. in rate	incl. in rate	\$408.43
Hydraulic Crane (80tn)	Active	1.00	0.7	10	7.00	E	\$197.66	incl. in rate	incl. in rate	\$1,383.62
Laborer	Active	2.00	0.7	10	14.00	L	\$51.01	incl. in rate	incl. in rate	\$714.14
Equipment Operator (crane)	Active	1.00	0.7	10	7.00	L	\$81.02	incl. in rate	incl. in rate	\$567.15
				Labor Hours	28				TOTAL LABOR	\$1,689.7
				Equipment Hours	7			тот	L EQUIPMENT	\$1,383.6

MATERIAL COSTS											
Description	Item	Order	Conversion	Order	Order	Material					
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost					
Consumables 5% labor (saw blades, drill bits,											
etc)	1.00	LS	1.000	1.00	\$84.49	\$84.49					

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00	\$400.00
					\$0.00

Hauling to Disposal Site Of Recycle Site 1.00 Loads 20 tons a load \$400.00 \$0.

SUMMARY OF COSTS										
Labor Cost	\$1,689.72 Labor Burden @	0.0%	\$0.00		\$1,689.72					
Material Cost	\$84.49 Material Tax @	7.8%	\$6.55		\$91.03					
Equipment Cost	\$1,383.62 Equipment Tax @	7.8%	\$107.23		\$1,490.85					
Subcontractors	\$400.00				\$400.00					
DIRECT COST SUBTOTALS	\$3,558		\$114	DIRECT COST SUBTOTALS	\$3,672					
Additional Pay Item Notes :										
Assumed 5 cubicles: 2 Laborers and 1 Electrician will load in the truck with the crane the control equipment.										

\$46.55

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION : KRRP - Copco 2 : D10 PAY ITEM NUMBER Project Description Quantity
Daily Production 10 hour shift Project # Work Days 0.4 Days Estimator : Mihaela Tomulescu EA per Total Cost Unit Price Per EA Unit Price Total Cost 2.75 2.125 \$1,488 \$1,901 \$1,487.86 \$1,901.16 \$1,653.18 per EA **Probable Low Cost Parameter** \$1.653 Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.4	10	8.00	L	\$51.01	incl. in rate	incl. in rate	\$408.08
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.39	incl. in rate	incl. in rate	\$289.55
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.44
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.39
				Labor Hours	16				TOTAL LABOR	\$931.02
				Equipment Hours					L EQUIPMENT	\$252.44

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$46.55	\$46.55

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00	\$400.00
				TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS			
Labor Cost	\$931.02 Labor Burden @	0.0% \$0.00	
Material Cost	\$46.55 Material Tax @	7.8% \$3.61	
Equipment Cost	\$252.44 Equipment Tax @	7.8% \$19.56	
Subcontractors	\$400.00	·	
DIRECT COST SUBTOTALS	\$1,630	\$23	DIRECT COST SUBTOTALS
Additional Pay Item Notes :			

Assumed 200 LF of cable: 2 Laborers will load in the truck with the loader the overhead crane cable.

Amount

\$4.320.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D05 Quantity **Daily Production** Project # Work Days Days Estimator : Mihaela Tomulescu GAL per Total Cost Unit Price Per GAL Unit Price Total Cost 13750 11250 \$9,523 \$11,639 \$0.46 per GAL Probable Low Cost Parameter \$0.41 \$10,581 Probable High Cost Parameter \$0.51

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.8	10	18.00	L	\$58.35	incl. in rate	incl. in rate	\$1,050.25
Electrician	Active	2.00	1.8	10	36.00	L	\$55.25	incl. in rate	incl. in rate	\$1,989.11
Laborer	Active	2.00	1.8	10	36.00	L	\$51.01	incl. in rate	incl. in rate	\$1,836.36
				Labor Hours	90				TOTAL LABOR	\$4,875.71
				Equipment Hours	0			тот	L EQUIPMENT	\$0.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 20% labor (absorbant materials,						
tc)	1.00	LS	1.000	1.00	\$975.14	\$975.1
auling and disposal of oil transformers	16.00	hours	1.000	16.00	\$270.00	\$4,320.0

					TOTAL MATERIAL	\$5,295.14
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote

Price

Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2

\$270.00 16.00 1.000 compartment hour

Company

TOTAL SUBCONTRACTS \$0.00

SUMMARY OF COSTS					
Labor Cost	\$4,875.71 Labor Burden @	0.0%	\$0.00		\$4,8
Material Cost	\$5,295.14 Material Tax @	7.8%	\$410.37		\$5,7
Equipment Cost	\$0.00 Equipment Tax @	7.8%	\$0.00		
Subcontractors	\$0.00				
DIRECT COST SUBTOTALS	\$10,171		\$410	DIRECT COST SUBTOTALS	\$10

Additional Pay Item Notes :

Used a crew formed of 1 Forman, 2 Electricians, 2 Laborers to takeout the petroleum waste, Vacuum-equipped tank trucks are used to remove waste oil from collection points at plants so that it can be transported to recycling or disposal locations. Assumed new waste handling equipment, for handling hazardous waste materials, w/charcoal & HEPA filter, 55 gallon drum packer is new to storage the oil from 8 transformers.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	3.061		Project	KRRP - Copco 2			
Description	:	Remove Intake Structure Concrete		Group	: D05			
Quantity	:	1,650.00 cy						
Daily Production	:	140.00 cy per	10 hour shift	Project #	: 3			
Work Days	:	11.8 Days	<u> </u>	Estimator	Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$195.42 per cy		Probable Low Cos	st Parameter	154	\$290,198	\$175.88
Total Cost	:	\$322,442		Probable High Co	st Parameter	112	\$386,931	\$234.50

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	# In crew	Worked	Hours /day	Hours	L/E	Rate	Cost	Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	11.8	10	118.00		\$58.87	incl. in rate	incl. in rate	\$6,946.90
Laborer	Active	3.00			354.00	-	\$50.07 \$51.07	incl. in rate	incl. in rate	
			11.8	10		L .				\$18,079.84
Equipment Operator (medium)	Active	2.00	11.8	10	236.00	L	\$72.34	incl. in rate	incl. in rate	\$17,071.30
Truck Driver (heavy)	Active	3.00	9.2	10	276.00	L	\$66.92	incl. in rate	incl. in rate	\$18,471.02
Air Compressor 900 cfm	Active	1.00	11.8	10	118.00	Е	\$38.87	incl. in rate	incl. in rate	\$4,586.53
Air Tool, Chipping Hammer	Active	2.00	11.8	10	236.00	E	\$1.64	incl. in rate	incl. in rate	\$386.81
Generator, Small Generator, 10 - 15 kW	Active	1.00	11.8	10	118.00	E	\$7.04	incl. in rate	incl. in rate	\$830.72
Hydraulic Excavator (5.0cy)	Active	1.00	11.8	10	118.00	E	\$276.50	incl. in rate	incl. in rate	\$32,627.00
Hydraulic Excavator (2.5cy)	Active	1.00	11.8	10	118.00	E	\$205.40	incl. in rate	incl. in rate	\$24,237.20
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	11.8	10	118.00	E	\$63.28	incl. in rate	incl. in rate	\$7,467.04
Hydraulic Thumbs/Shear Attachment	Active	1.00	11.8	10	118.00	E	\$24.92	incl. in rate	incl. in rate	\$2,940.56
Truck, On-Highway Dump (6x4, 12cy)	Active	3.00	9.2	10	276.00	Е	\$57.41	incl. in rate	incl. in rate	\$15,845.16
3 Man Blasting Crew	Active	1.00	11.8	10	118.00	L	\$146.09	incl. in rate	incl. in rate	\$17,238.65
Air Track Drill 4", Air Hoses, Compressor	Active	1.00	11.8	10	118.00	E	\$212.49	incl. in rate	incl. in rate	\$25,073.29
Acetylene Torches	Active	2.00	11.8	10	236.00	Е	\$0.44	incl. in rate	incl. in rate	\$103.84
				Labor Hours	1,102				TOTAL LABOR	\$77,807.71
				Equipment Hours	1,574				TOTAL EQUIPMENT	\$114,098.15

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$3,890.39	\$3,890.39
Blasting Material	16,400.00	CY	1.050	17,220.00	\$5.56	\$95,777.64
Drill Bit Wear Allowance (10% of Drilling Eq)	1.00	LS	1.000	1.00	\$2,507.33	\$2,507.33
			1.000	0.00		\$0.00
			1.000	0.00		\$0.00
			1.000	0.00		\$0.00

SUBCONTRACT COSTS					
Description	Quantity	Units Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	2 EA	Cost per Mob	\$5,000.00		\$10,000.00
Reinforcement Disposal Fee	148,500 lbs.	90lbs Rebar per CY of Concret	te		\$0.00
Rebar Hauling to Facility (30 Miles)	120 Miles	Yreka Recycle			\$0.00
Hauling Cost by Load	4.00 loads	40,000lbs per load	\$400.00		\$1,600.00
				TOTAL SUBCONTRACTS	\$11,600,00

SUMMARY OF COSTS				
Labor Cost	\$77,807.71 Labor Burden @	0.0% \$0.00 Included in hourly labor r	ate.	\$77,807.71
Material Cost	\$102,175.35 Material Tax @	7.75% \$7,918.59		110,093.94
Equipment Cost	\$114,098.15 Equipment Tax @	7.75% \$8,842.61	\$	122,940.76
Subcontractors	\$11,600.00	· ·		\$11,600.00
DIRECT COST SUBTOTALS	\$305,681	\$16,761	DIRECT COST SUBTOTALS	\$322,442
Additional Pay Item Notes :				

PAY ITEM INFORMATION
PAY ITEM NUMBER Description Quantity Daily Production Work Days iated with 16-foot I.D. Wood Stave Pipe Group : D05 8.00 cy per 10.2 Days : 3 : Eric Jones Total Cost Unit Price Per cy 10.2 cy per 147.2 \$85.38 \$115.51 Unit Price \$100.45 per cy Probable Low Cost Parameter \$111,846 **Total Cost** \$131.584 Probable High Cost Parameter 108.8 \$151,321

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	10.2	10	102.00	L	\$58.87	incl. in rate	incl. in rate	\$6,004.94
Laborer	Active	3.00	10.2	10	306.00	L	\$51.07	incl. in rate	incl. in rate	\$15,628.34
Equipment Operator (medium)	Active	2.00	10.2	10	204.00	L	\$72.34	incl. in rate	incl. in rate	\$14,756.54
Truck Driver (heavy)	Active	1.00	6.9	10	69.30	L	\$66.92	incl. in rate	incl. in rate	\$4,637.83
Air Compressor 600 cfm	Active	1.00	10.2	10	102.00	E	\$21.74	incl. in rate	incl. in rate	\$2,217.37
Air Tool, Chipping Hammer	Active	1.00	10.2	10	102.00	E	\$1.64	incl. in rate	incl. in rate	\$167.18
Acetylene Torches	Active	1.00	10.2	10	102.00	E	\$0.44	incl. in rate	incl. in rate	\$44.88
Hydraulic Excavator (5.0cy)	Active	1.00	10.2	10	102.00	E	\$276.50	incl. in rate	incl. in rate	\$28,203.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	10.2	10	102.00	E	\$63.28	incl. in rate	incl. in rate	\$6,454.56
Hydraulic Excavator (2.5cy)	Active	1.00	10.2	10	102.00	E	\$205.40	incl. in rate	incl. in rate	\$20,950.80
Loader, FE Rubber Tire (5.25cy)	Active	1.00	10.2	10	102.00	E	\$76.00	incl. in rate	incl. in rate	\$7,752.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	6.9	10	69.30	Е	\$117.28	incl. in rate	incl. in rate	\$8,127.50

l			_	
ĺ	Labor Hours	681	TOTAL LABOR	\$41,027.66
l	Equipment Hour	783	TOTAL EQUIPMENT	\$73,917.30

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$2,051.38		\$2,051.38
						TOTAL MATERIAL	\$2.051.38

SUBCONTRACT COSTS					
Description Quantity Units		Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	3 EA	Cost per Mob	\$2,500.00		\$7,500.00
Reinforcement Disposal Fee	117,900 lbs.	90lbs Rebar per CY of Concrete			\$0.00
Rebar Hauling to Facility (30 Miles)	90 Miles	Yreka Recycle			\$0.00
Hauling Cost by Load	3.00 loads	40,000lbs per load	\$400.00		\$1,200.00
				TOTAL SUBCONTRACTS	\$8,700.00

SUMMARY OF COSTS									
Labor Cost	\$41,027.66 Labor Burden @	0.0%	\$0.00	Included in hourly labor rate.	\$41,027.66				
Material Cost	\$2,051.38 Material Tax @	7.75%	\$158.98		\$2,210.37				
Equipment Cost	\$73,917.30 Equipment Tax @	7.75%	\$5,728.59		\$79,645.89				
Subcontractors	\$8,700.00				\$8,700.00				
DIRECT COST SUBTOTALS	\$125,696	•	\$5,888	DIRECT COST SUBTOTALS	\$131,584				
Additional Pay Item Notes :									

Demolition is done using hydraulic chipping hammers and excavator mounted claw. Allowance for saw cutting sub is included at one mobilization a week. Blasting method is not found to be feasible for this work. A cusing RS Means was used: reference 03055110 (\$224/CY, excludes hauling, sawing, and dumping) - Selective concrete demolition, reinforcing more than 2% cross-sectional area.

\$37,003.81

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.063	Project	: KRRP - Copco 2			
Description	:	Place Concrete Plugs for Tunnels	Group	: D05			
Quantity	:	100.00 cy	_				
Daily Production	:	13.75 cy per 10 hour shift	Project #	: 3			
Work Days	:	7.3 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$1,536.52 per cy	Probable Low	Cost Parameter	15.8125	\$130,604	\$1,306.04
Total Cost	:	\$153,652	Probable High	Cost Parameter	11.6875	\$176,700	\$1,767.00

Active Active Active Active Active	2.00 6.00 4.00 2.00	7.3 7.3 7.3	10 10 10	146.00 438.00	L L	\$85.49	incl. in rate	incl. in rate	\$12,481.83
Active Active	4.00			438.00	L				
Active		7.3	10			\$85.49	incl. in rate	incl. in rate	\$37,445.50
	2.00		10	292.00	L	\$77.54	incl. in rate	incl. in rate	\$22,641.39
Active		7.3	10	146.00	L	\$72.34	incl. in rate	incl. in rate	\$10,561.06
7101170	1.00	7.3	10	73.00	L	\$66.92	incl. in rate	incl. in rate	\$4,885.45
Active	1.00	7.3	10	73.00	E	\$76.00	incl. in rate	incl. in rate	\$5,548.00
Active	1.00	7.3	10	73.00	E	\$205.40	incl. in rate	incl. in rate	\$14,994.20
Active	1.00	7.3	10	73.00	E	\$27.09	incl. in rate	incl. in rate	\$1,977.57
								TOTAL LABOR	\$88,015.22 \$22,519.77
	Active	Active 1.00	Active 1.00 7.3 Active 1.00 7.3	Active 1.00 7.3 10 Active 1.00 7.3 10 Labor Hours	Active 1.00 7.3 10 73.00 Active 1.00 7.3 10 73.00 Labor Hours 1,095	Active 1.00 7.3 10 73.00 E Active 1.00 7.3 10 73.00 E	Active 1.00 7.3 10 73.00 E \$205.40 Active 1.00 7.3 10 73.00 E \$27.09 Labor Hours 1,095	Active 1.00 7.3 10 73.00 E \$205.40 incl. in rate Active 1.00 7.3 10 73.00 E \$27.09 incl. in rate Labor Hours 1,095	Active 1.00 7.3 10 73.00 E \$205.40 incl. in rate incl. in rate Active 1.00 7.3 10 73.00 E \$27.09 incl. in rate incl. in rate Incl. in rate Incl. in rate Incl. in rate Incl. in rate Incl. in rate Incl. in rate

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (25% labor)	1.00	LS	1.000	1.00	\$22,003.81	\$22,003.81
Concrete	100.00	CY	1.200	120.00	\$150.00	\$15,000.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Pump		1 LS	1 Mobilization	\$1,500.00		\$1,500.00
						\$0.00
						\$0.00
					_	\$0.00
					TOTAL SUBCONTRACTS	\$1,500.00

SUMMARY OF COSTS				
Labor Cost	\$88,015.22 Labor Burden @	0.0% \$0.0	Included in hourly labor rate.	\$88,015.22
Material Cost	\$37,003.81 Material Tax @	7.75% \$2,867.7°		\$39,871.60
Equipment Cost	\$22,519.77 Equipment Tax @	7.75% \$1,745.2	3	\$24,265.05
Subcontractors	\$1,500.00			\$1,500.00
DIRECT COST SUBTOTALS	\$149,039	\$4,61	B DIRECT COST SUBTOTA	LS \$153,652
Additional Pay Item Notes :				

There will be 2 crews work in two locations at 1 time. The loaders will support crews for providing materials/ equipment that a pick up truck can not handle. There is a total of 9 plugs and figured roughly 1 day per plug.

PAY ITEM INFORMATION									
PAY ITEM NUMBER	PAY ITEM NUMBER : 3.064				Project	: KRRP - Copco 2			
		Remove Concrete Items	associate	ed with Penstocks					
Description	:	D/S from Tunnel No. 2			Group	: D05			
Quantity	:	3,500.00 cy							
Daily Production	:	100.00 cy pe	10	hour shift	Project #	: 3			
Work Days	:	35.0 D	ays	<u>.</u>	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$131.62 per c			Probable Lov	v Cost Parameter	115	\$391,571	\$111.88
Total Cost		\$460,672			Probable Hig	h Cost Parameter	80	\$552.806	\$157.94

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	35.0	10	350.00	L	\$58.87	incl. in rate	incl. in rate	\$20,605.20
Laborer	Active	4.00	35.0	10	1,400.00	L	\$51.07	incl. in rate	incl. in rate	\$71,502.20
Equipment Operator (medium)	Active	2.00	35.0	10	700.00	L	\$72.34	incl. in rate	incl. in rate	\$50,635.20
Truck Driver (heavy)	Active	1.00	35.0	10	350.00	L	\$66.92	incl. in rate	incl. in rate	\$23,423.40
Air Compressor 900 cfm	Active	1.00	35.0	10	350.00	E	\$38.87	incl. in rate	incl. in rate	\$13,604.12
Air Compressor 600 cfm	Active	1.00	35.0	10	350.00	E	\$21.74	incl. in rate	incl. in rate	\$7,608.62
Air Tool, Chipping Hammer	Active	4.00	35.0	10	1,400.00	E	\$1.64	incl. in rate	incl. in rate	\$2,294.65
Generator, Small Generator, 10 - 15 kW	Active	2.00	35.0	10	700.00	E	\$7.04	incl. in rate	incl. in rate	\$4,928.00
Hydraulic Excavator (2.5cy)	Active	2.00	35.0	10	700.00	E	\$205.40	incl. in rate	incl. in rate	\$143,780.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	35.0	10	350.00	E	\$63.28	incl. in rate	incl. in rate	\$22,148.00
Hydraulic Thumbs/Shear Attachment	Active	1.00	35.0	10	350.00	E	\$24.92	incl. in rate	incl. in rate	\$8,722.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	35.0	10	350.00	E	\$117.28	incl. in rate	incl. in rate	\$41,048.00

Luboi riodis	2,000	TOTAL LABOR	\$100,100.00
Equipment Hours	4,550	TOTAL EQUIPMENT	\$244,133.39
MATERIAL COSTS			

MATERIAL CUSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$8,308.30	\$8,308.30

TOTAL MATERIAL \$8,308.30

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Concrete Saw Cutting	9	EA	Cost per Mob	\$2,500.00	\$22,500.00

			TOTAL SUBCONTRACTS	\$22,500.00
SUMMARY OF COSTS				
Labor Cost	\$166,166.00 Labor Burden @	0.0% \$0.00 Included in hourly labor ra	ite.	\$166,166.0
Material Cost	\$8,308.30 Material Tax @	7.75% \$643.89		\$8,952.1
Equipment Cost	\$244,133.39 Equipment Tax @	7.75% \$18,920.34		\$263,053.7
Subcontractors	\$22,500.00			\$22,500.00
DIRECT COST SUBTOTALS	\$441,108	\$19,564	DIRECT COST SUBTOTALS	\$460,67
Additional Pay Item Notes :				
uninerial ruy nom riotos r				

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 : D07 Project Group Description 50,000.00 LBS 31,250.00 LBS per Quantity Daily Production 10 hour shift Project # 1.6 Days \$0.66 per LBS \$33,075 Work Days : Mihaela Tomulescu Unit Price Per LBS Estimator LBS per **Total Cost** Probable Low Cost Parameter Probable High Cost Parameter Unit Price Total Cost 34375 28125 \$29,767 \$36,382 \$0.60 \$0.73

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.35	incl. in rate	incl. in rate	\$933.55
Laborer	Active	4.00	1.6	10	64.00	L	\$51.01	incl. in rate	incl. in rate	\$3,264.64
Steelworker	Active	2.00	1.6	10	32.00	L	\$77.55	incl. in rate	incl. in rate	\$2,481.66
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.6	10	16.00	E	\$76.00	incl. in rate	incl. in rate	\$1,216.00
Hydraulic Crane (120tn)	Active	1.00	1.6	10	16.00	E	\$242.08	incl. in rate	incl. in rate	\$3,873.28
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.39	incl. in rate	incl. in rate	\$1,158.21
Equipment Operator (crane)	Active	1.00	1.6	10	16.00	L	\$81.02	incl. in rate	incl. in rate	\$1,296.34

-			
Labor Hours	144	TOTAL LABOR	\$9,134.40
Equipment Hours	32	TOTAL EQUIPMENT	\$5,089.28

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$456.72	\$456.72
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	2,500.00	LF	1.000	2,500.00	\$0.85	\$2,125.00

TOTAL MATERIAL \$2,581.72

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	25.00	ton	1.000	25.00	\$595.00	\$14,875.00
Hauling to Disposal Site Or Recycle Site	2.00	Loads	20 tons a load		\$400.00	\$800.00
					TOTAL SUBCONTRACTS	\$15,675.00

SUMMARY OF COSTS					
Labor Cost	\$9,134.40 Labor Burden @	0.0%	\$0.00		\$9,134.40
Material Cost	\$2,581.72 Material Tax @	7.8%	\$200.08		\$2,781.80
Equipment Cost	\$5,089.28 Equipment Tax @	7.8%	\$394.42		\$5,483.70
Subcontractors	\$15,675.00				\$15,675.00
DIRECT COST SUBTOTALS	\$32,480		\$595	DIRECT COST SUBTOTALS	\$33,075
Additional Pay Item Notes :					

Assumed hazardous waste cleanup 100% disposal because of the engine Oil and Transmission Oil used for cranes .

\$2,237.16

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER Project Group : KRRP - Copco 2 : D10 Description
Quantity
Daily Production Project # Estimator : Mihaela Tomulescu Probable Low Cost Parameter Probable High Cost Parameter Days LBS per 41250 30000 Work Days **Total Cost** Unit Price Per LBS Unit Price Total Cost \$0.44 per LBS \$37,773 \$33,996 \$45,327 \$0.40 \$0.53

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.3	10	23.00	L	\$58.35	incl. in rate	incl. in rate	\$1,341.98
Laborer	Active	4.00	2.3	10	92.00	L	\$51.01	incl. in rate	incl. in rate	\$4,692.92
Steelworker	Active	3.00	2.3	10	69.00	L	\$77.55	incl. in rate	incl. in rate	\$5,351.09
Equipment Operator (medium)	Active	1.00	2.3	10	23.00	L	\$72.39	incl. in rate	incl. in rate	\$1,664.92
Equipment Operator (crane)	Active	1.00	2.3	10	23.00	L	\$81.02	incl. in rate	incl. in rate	\$1,863.48
Hydraulic Excavator (5.0cy)	Active	1.00	2.3	10	23.00	E	\$276.50	incl. in rate	incl. in rate	\$6,359.50
Hydraulic Crane (120tn)	Active	1.00	2.3	10	23.00	E	\$242.08	incl. in rate	incl. in rate	\$5,567.84
				Labor Hours	230			т	OTAL LABOR	\$14,914.40
				Equipment Hours	46			TOTAL	_ EQUIPMENT	\$11,927.34

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 15% labor (saw blades, drill bits, electrodes, wrenches, hard hats etc)	1.00	LS	1.000	1.00	\$2,237.16	\$2,237.1

Quantity	Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
10.75	ton	1.000	10.75	\$595.00	\$6,396
3.00	Loads	20 tons a load	\$400.00		\$1,200
	10.75	10.75 ton	. Company 10.75 ton 1.000	Company Price 10.75 ton 1.000 10.75	Company Price 10.75 ton 1.000 10.75 \$595.00

SUMMARY OF COSTS					
Labor Cost	\$14,914.40 Labor Burden @	0.0%	\$0.00		\$14,914.40
Material Cost	\$2,237.16 Material Tax @	7.8%	\$173.38		\$2,410.54
Equipment Cost	\$11,927.34 Equipment Tax @	7.8%	\$924.37		\$12,851.71
Subcontractors	\$7,596.25				\$7,596.25
DIRECT COST SUBTOTALS	\$36,675		\$1,098	DIRECT COST SUBTOTALS	\$37,773
Additional Pay Item Notes :					

TOTAL SUBCONTRACTS

\$2,853.19

\$11,200.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D03 Quantity
Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost 27500 20000 \$0.49 \$0.66 \$0.55 per LBS Probable Low Cost Parameter \$108,459 \$120,510 Probable High Cost Parameter \$144,612

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.8	10	88.00	L	\$58.35	incl. in rate	incl. in rate	\$5,134.54
Laborer	Active	4.00	8.8	10	352.00	L	\$51.01	incl. in rate	incl. in rate	\$17,955.52
Steelworker	Active	3.00	8.8	10	264.00	L	\$77.55	incl. in rate	incl. in rate	\$20,473.73
Equipment Operator (medium)	Active	1.00	8.8	10	88.00	L	\$72.39	incl. in rate	incl. in rate	\$6,370.14
Equipment Operator (crane)	Active	1.00	8.8	10	88.00	L	\$81.02	incl. in rate	incl. in rate	\$7,129.85
Hydraulic Excavator (5.0cy)	Active	1.00	8.8	10	88.00	E	\$276.50	incl. in rate	incl. in rate	\$24,332.00
Hydraulic Crane (120tn)	Active	1.00	8.8	10	88.00	E	\$242.08	incl. in rate	incl. in rate	\$21,303.04
				Labor Hours	880				TOTAL LABOR	\$57,063.78
				Equipment Hours	176			TOTA	L EQUIPMENT	\$45,635.04

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$2,853.19	\$2,853.19

SUBCONTRACT COSTS Description Quantity Units Contract or Quote Company Price Amount Stop log lifter - Rent per day Hauling to Disposal Site Or Recycle Site 1.000 8.80 \$1,000.00 \$8,800.00 8.80 day Loads 6.00 20 tons a load \$400.00 \$2,400.00

UMMARY OF COSTS				
abor Cost	\$57,063.78 Labor Burden @	0.0%	\$0.00	
Material Cost	\$2,853.19 Material Tax @	7.8%	\$221.12	
Equipment Cost	\$45,635.04 Equipment Tax @	7.8%	\$3,536.72	
Subcontractors	\$11,200.00			
DIRECT COST SUBTOTALS	\$116,752		\$3,758	DIRECT COST SUBTOTALS
Additional Pay Item Notes :				

The process of removing top logs is not manual, but done with hydraulic stop log lifters. The gate side guides and invert shall have a minimum weight of 4 lbs./ft. for wall mounted. The gate invert should contain a removable neoprene seal. Including stop log grooves, lifter, guide - weight around 220,000 lbs. This activity will be completed during the concrete demolition of the stop log area.

\$72,605.54

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Group Description : D03 Quantity
Daily Production Project # Work Days 22.0 Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost \$0.59 per LBS \$646,878 60000 40000 \$517,502 \$776,253 \$0.47 \$0.71 Probable Low Cost Parameter Probable High Cost Parameter

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	22.0	10	220.00	L	\$58.35	incl. in rate	incl. in rate	\$12,836.34
Laborer	Active	6.00	22.0	10	1,320.00	L	\$51.01	incl. in rate	incl. in rate	\$67,333.20
Carpenters	Active	6.00	22.0	10	1,320.00	L	\$84.98	incl. in rate	incl. in rate	\$112,173.60
Equipment Operator (crane)	Active	1.00	22.0	10	220.00	L	\$81.02	incl. in rate	incl. in rate	\$17,824.62
Equipment Operator (medium)	Active	2.00	22.0	10	440.00	L	\$72.39	incl. in rate	incl. in rate	\$31,850.72
Hydraulic Crane (80tn)	Active	1.00	22.0	10	220.00	E	\$197.66	incl. in rate	incl. in rate	\$43,485.20
Loader, FE Rubber Tire (5.25cy)	Active	2.00	22.0	10	440.00	E	\$76.00	incl. in rate	incl. in rate	\$33,440.00
				Labor Hours	3520				TOTAL LABOR	\$242,018.48
				Equipment Hours	660			тс	TAL EQUIPMENT	\$76,925.20

Mana	Ouder	Commencian	Order	Ouder	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$72,605.54	\$72,605.54
	Item Quantity 1.00	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hazardous waste for metal bands (allowance)			1 . ,				
	232.00	ton	1.000	232.00	\$595.00		\$138,040.0
Disposal fees -RCRA hazardous waste treated							
be a non-RCRA or nonhazardous waste	550	Ton	1.000	550.00	\$74.00		\$40,700.0
ide Load Hauling to Disposal Site Or Recycle te	65.00	Loads	65 each 20' loads	\$	1,000.00		\$65,000.0
						TOTAL SUBCONTRACTS	\$243,740.0

SUMMARY OF COSTS					
Labor Cost	\$242,018.48 Labor Burden @	0.0%	\$0.00		\$242,018.4
Material Cost	\$72,605.54 Material Tax @	7.8% \$5,63	26.93		\$78,232.4
Equipment Cost	\$76,925.20 Equipment Tax @	7.8% \$5,96	61.70		\$82,886.90
Subcontractors	\$243,740.00	·			\$243,740.0
DIRECT COST SUBTOTALS	\$635,289	\$1·	1,589	DIRECT COST SUBTOTALS	\$646,87
Additional Pay Item Notes :				_	
It is expected that the grow will	cut the penetock into 20' sections and a crane will load	Lantire coation on to truck. Due to cooper	the costions of ponetock wi	Il only he oble to be out into 20' costions. The total	

It is expected that the crew will cut the penstock into 20' sections and a crane will load entire section on to truck. Due to access the sections of penstock will only be able to be cut into 20' sections. The total length of the penstock is 1300'. The hauling cost is expected to be higher due to due to needing a lead car and potential permits and added. It is expected 2 loader will be used to support 3 demolition crews.

TOTAL SUBCONTRACTS

\$46,337.50

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Copco 2 Project Description Quantity
Daily Production Project #

Days Work Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS 37500 25000 \$127,421 \$191,131 \$0.44 \$0.66 **Unit Price** \$0.55 per LBS Probable Low Cost Parameter **Total Cost** \$159,276 Probable High Cost Parameter

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	9.3	10	93.00	L	\$58.35	incl. in rate	incl. in rate	\$5,426.27
Laborer	Active	6.00	9.3	10	558.00	L	\$51.01	incl. in rate	incl. in rate	\$28,463.58
Steelworker	Active	3.00	9.3	10	279.00	L	\$77.55	incl. in rate	incl. in rate	\$21,637.01
Equipment Operator (crane)	Active	1.00	9.3	10	93.00	L	\$81.02	incl. in rate	incl. in rate	\$7,534.95
Equipment Operator (medium)	Active	2.00	9.3	10	186.00	L	\$72.39	incl. in rate	incl. in rate	\$13,464.17
Hydraulic Crane (80tn)	Active	1.00	9.3	10	93.00	E	\$197.66	incl. in rate	incl. in rate	\$18,382.38
Loader, FE Rubber Tire (5.25cy)	Active	2.00	9.3	10	186.00	E	\$76.00	incl. in rate	incl. in rate	\$14,136.00

Labor Hours 1209 TOTAL LABOR \$76,525.98 TOTAL EQUIPMENT \$32,518.38 Equipment Hours 279

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Selective demolition, torch cutting, steel, 1" thick plate (assumption)	1,500.00	LF	1.000	1,500.00	\$0.85	\$1,275.00

TOTAL MATERIAL \$1,275.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (50% of total QTY)						
	72.50	ton	1.000	72.50	\$595.00	\$43,137.50
Hauling to Disposal Site Or Recycle Site	8.00	Loads	20 tons a load	\$400.00		\$3,200.00

SUMMARY OF COSTS \$76,525.98 Labor Burden @ \$1,275.00 Material Tax @ Labor Cost \$76,525.98 \$32,518.38 Equipment Tax @ 7.8% Equipment Cost \$2,520,17 \$35,038,55 \$46,337.50 Subcontractors \$46,337.50 \$2,619 DIRECT COST SUBTOTALS \$156,657 DIRECT COST SUBTOTALS \$159,276 al Pay Item Notes

\$0.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION PAY ITEM NUMBER Project Group : KRRP - Copco 2 : D10 Description Quantity
Daily Production Project # Work Days 6.0 Days Estimator : Mihaela Tomulescu LBS per Total Cost Unit Price Per LBS Unit Price Total Cost Probable Low Cost Parameter Probable High Cost Parameter \$0.31 per LBS \$142,543 97500 65000 \$114,034 \$171,051 \$0.25 \$0.37

CREW COSTS										
Description	Active Idle	# in	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
	idie	CIEW	Worked	ruay	Hours		Nate	COST	Nate	COSI
						1				
				Labor Hours					OTAL LABOR	
				Equipment Hours	0			TOTAL	EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)	231.50	ton	1.000	231.50	\$595.00	\$137,742.50
Hauling to Disposal Site Or Recycle Site	12.00	Loads	20 tons a load	\$400.00		\$4,800.00
					TOTAL SUDCONTRACTS	\$142.542.50

SUMMARY OF COSTS									
Labor Cost	\$0.00 Labor Burden @	0.0%	\$0.00		\$0.00				
Material Cost	\$0.00 Material Tax @	7.8%	\$0.00		\$0.00				
Equipment Cost	\$0.00 Equipment Tax @	7.8%	\$0.00		\$0.00				
Subcontractors	\$142,542.50				\$142,542.50				
DIRECT COST SUBTOTALS	\$142,543		\$0	DIRECT COST SUBTOTALS	\$142,543				
Additional Pay Item Notes :									
This item is to account for the extra cost associated with hauling the weight of the bands. The demolition of the bands are accounted for under Pay Item 3.068									
This term is to account for the extra cost associated with hadning the weight of the barios. The definition of the barios are accounted for under Pay item 3,006									

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.071	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose of Penstock after bifurcation to butterfly valves	Group	: D07			
Quantity	:	860,000.00 LBS					
Daily Production	:	30,300.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	28.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.80 per LBS	Probable Low	Cost Parameter	36360	\$547,203	\$0.64
Total Cost	:	\$684.003	Probable High	h Cost Parameter	24240	\$820.804	\$0.95

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	28.4	10	284.00	L	\$58.35	incl. in rate	incl. in rate	\$16,570.55
Laborer	Active	4.00	28.4	10	1,136.00	L	\$51.01	incl. in rate	incl. in rate	\$57,947.36
Steelworker	Active	2.00	28.4	10	568.00	L	\$77.55	incl. in rate	incl. in rate	\$44,049.54
Equipment Operator (crane)	Active	2.00	28.4	10	568.00	L	\$81.02	incl. in rate	incl. in rate	\$46,019.93
Equipment Operator (medium)	Active	2.00	28.4	10	568.00	L	\$72.39	incl. in rate	incl. in rate	\$41,116.38
Crawler Crane (90tn)	Active	1.00	28.4	10	284.00	E	\$211.22	incl. in rate	incl. in rate	\$59,986.48
Crawler Crane (270tn)	Active	1.00	28.4	10	284.00	E	\$454.10	incl. in rate	incl. in rate	\$128,964.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	28.4	10	284.00	E	\$76.00	incl. in rate	incl. in rate	\$21,584.00
Hydraulic Excavator (5.0cy)	Active	1.00	28.4	10	284.00	E	\$276.50	incl. in rate	incl. in rate	\$78,526.00
Boomlift (JLG 60')	Active	2.00	28.4	10	568.00	E	\$52.87	incl. in rate	incl. in rate	\$30,030.16
Acetylene Torches	Active	4.00	28.4	10	1,136.00	E	\$0.47	incl. in rate	incl. in rate	\$533.92
Air Compressor 600 cfm	Active	2.00	28.4	10	568.00	E	\$21.74	incl. in rate	incl. in rate	\$12,348.32
Generator, Small Generator, 10 - 15 kW	Active	2.00	28.4	10	568.00	E	\$7.04	incl. in rate	incl. in rate	\$3,998.72
Hepa Vac System	Active	4.00	28.4	10	1,136.00	E	\$0.47	incl. in rate	incl. in rate	\$533.92
				Labor Hours	3124				TOTAL LABOR	\$205,703.76
				Equipment Hours	5112			тот	AL EQUIPMENT	\$336,505.92

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$16,825.30	\$16,825.30

TOTAL MATERIAL \$16,825.30

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit	·	Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	43.00	ton	1.000	43.00	\$595.00	\$25,585.00
Hauling to Disposal Site Or Recycle Site Shoring Allowance	22.00	Loads AL	20 tons a load	\$1,000.00 \$50,000.00		\$22,000.00 \$50,000.00
					TOTAL SUBCONTRACTS	\$97,585.00

SUMMARY OF COSTS					
Labor Cost	\$205,703.76 Labor Burden @	0.0%	\$0.00		\$205,703.76
Material Cost	\$16,825.30 Material Tax @	7.8%	\$1,303.96		\$18,129.26
Equipment Cost	\$336,505.92 Equipment Tax @	7.8%	\$26,079.21		\$362,585.13
Subcontractors	\$97,585.00				\$97,585.00
DIRECT COST SUBTOTALS	\$656,620	•	\$27,383	DIRECT COST SUBTOTALS	\$684,003
Additional Pay Item Notes :					

TOTAL SUBCONTRACTS

\$980.13

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	3.072	Project	: KRRP - Copco 2			
Description	:	Remove & Dispose of Bifurcated vent pipes and support structure	Group	: D02			
Quantity	:	19,500.00 LBS					
Daily Production	:	53,750.00 LBS per 10 hour shift	Project #	: 3			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.43 per LBS	Probable Low (Cost Parameter	64500	\$6,761	\$0.35
Total Cost	:	\$8,451	Probable High	Cost Parameter	43000	\$10,141	\$0.52

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.35	incl. in rate	incl. in rate	\$233.39
Laborer	Active	4.00	0.4	10	16.00	L	\$51.01	incl. in rate	incl. in rate	\$816.16
Steelworker	Active	2.00	0.4	10	8.00	L	\$77.55	incl. in rate	incl. in rate	\$620.42
Equipment Operator (crane)	Active	2.00	0.4	10	8.00	L	\$81.02	incl. in rate	incl. in rate	\$648.17
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.39	incl. in rate	incl. in rate	\$579.10
Crawler Crane (90tn)	Active	1.00	0.4	10	4.00	E	\$211.22	incl. in rate	incl. in rate	\$844.88
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.4	10	4.00	E	\$76.00	incl. in rate	incl. in rate	\$304.00
Hydraulic Excavator (5.0cy)	Active	1.00	0.4	10	4.00	E	\$276.50	incl. in rate	incl. in rate	\$1,106.00
				Labor Hours					OTAL LABOR	\$2,897.24
				Equipment Hours	12			TOTAL	. EQUIPMENT	\$2,254.88

Quantity		Factor / Waste	Quantity	Price	Cost
	Unit	1 dotor / Waste	Quantity	THE	0031
1.00	LS	1.000	1.00	\$289.72	\$289.72
2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00

					TOTAL MATERIAL	\$1,989.72
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote

Company Price Amount Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum 1.000 0.98 \$595.00 \$580.13 0.98 ton \$400.00 1.00 Loads \$400.00

Hauling to Disposal Site Or Recycle Site 20 tons a load

SUMMARY OF COSTS						
Labor Cost	\$2,897.24	Labor Burden @	0.0%	\$0.00		\$2,897.24
Material Cost	\$1,989.72	Material Tax @	7.8%	\$154.20		\$2,143.93
Equipment Cost	\$2,254.88	Equipment Tax @	7.8%	\$174.75		\$2,429.63
Subcontractors	\$980.13					\$980.13
DIRECT COST SUBTOTALS	\$8,122	•		\$329	DIRECT COST SUBTOTALS	\$8,451
Additional Pay Item Notes :						

Assumed the process of removing pipes, expansion joints and support rings encased in concrete is done in around 20 days by 3 crew formed of 1 foreman, 4 journeymen, 4 steelworkers;6 equipment operators 1 for each excavator, crane and loader. We dispose pipes with 1 trucks per day for each crew. Assumed contains paint with heavy metals 10% of the total lbs, 36 miles from Copco lake to Yreka transfer recycling. Based on the current production rate, only 1 trips a day would be necessary. Demolition is done using one crawler crane, excavator and welding machine.

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description Quantity Daily Production Project # Work Days Days Estimator : Mihaela Tomulescu LBS per **Total Cost** Unit Price Per LBS 37500 25000 \$116,144 \$174,216 \$0.78 \$1.18 **Unit Price** \$0.98 per LBS **Probable Low Cost Parameter** \$145,180 **Total Cost** Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.7	10	47.00	L	\$58.35	incl. in rate	incl. in rate	\$2,742.31
Laborer	Active	4.00	4.7	10	188.00	L	\$51.01	incl. in rate	incl. in rate	\$9,589.88
Steelworker	Active	2.00	4.7	10	94.00	L	\$77.55	incl. in rate	incl. in rate	\$7,289.89
Equipment Operator (crane)	Active	2.00	4.7	10	94.00	L	\$81.02	incl. in rate	incl. in rate	\$7,615.97
Equipment Operator (medium)	Active	2.00	4.7	10	94.00	L	\$72.39	incl. in rate	incl. in rate	\$6,804.47
Crawler Crane (90tn)	Active	1.00	4.7	10	47.00	E	\$211.22	incl. in rate	incl. in rate	\$9,927.34
Crawler Crane (270tn)	Active	1.00	4.7	10	47.00	E	\$454.10	incl. in rate	incl. in rate	\$21,342.70
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.7	10	47.00	E	\$76.00	incl. in rate	incl. in rate	\$3,572.00
Hydraulic Excavator (5.0cy)	Active	1.00	4.7	10	47.00	Е	\$276.50	incl. in rate	incl. in rate	\$12,995.50
Boomlift (JLG 60')	Active	2.00	4.7	10	94.00	Е	\$52.87	incl. in rate	incl. in rate	\$4,969.78
Acetylene Torches	Active	4.00	4.7	10	188.00	E	\$0.47	incl. in rate	incl. in rate	\$88.36
Air Compressor 600 cfm	Active	2.00	4.7	10	94.00	E	\$21.74	incl. in rate	incl. in rate	\$2,043.56
Generator, Small Generator, 10 - 15 kW	Active	2.00	4.7	10	94.00	E	\$7.04	incl. in rate	incl. in rate	\$661.76
Hepa Vac System	Active	4.00	4.7	10	188.00	Е	\$0.47	incl. in rate	incl. in rate	\$88.36
				Labor Hours	517				TOTAL LABOR	\$34,042.52
				Equipment Hours	846			TOTA	AL EQUIPMENT	\$55,689.36

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, electrodes, drill bits, etc)	1.00	LS	1.000	1.00	\$5,106.38	\$5,106.38

TOTAL MATERIAL \$5,106.38

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	74.00	ton	1.000	74.00	\$595.00	\$44,030.00
Hauling to Disposal Site Or Recycle Site	4.00	Loads	20 tons a load	\$400.00		\$1,600.00
					TOTAL SUBCONTRACTS	\$45 630 00

SUMMARY OF COSTS					
Labor Cost	\$34,042.52 Labor Burden @	0.0%	\$0.00		\$34,042.52
Material Cost	\$5,106.38 Material Tax @	7.8%	\$395.74		\$5,502.12
Equipment Cost	\$55,689.36 Equipment Tax @	7.8%	\$4,315.93		\$60,005.29
Subcontractors	\$45,630.00	•			\$45,630.00
DIRECT COST SUBTOTALS	\$140,468		\$4,712	DIRECT COST SUBTOTALS	\$145,180
Additional Pay Item Notes :					

Assumed the process of removing 138" butterfly valves is done in around 6 days by 2 crew formed of 1 foreman, 2 journeymen, 2 steelworkers; We dispose cradles with 1 trucks per day for each crew. Assumed contains paint with heavy metals 100% of the total lbs, 36 miles from Copco lake to Yreka transfer recycling. Based on the current production rate, only 1 trips a day would be necessary. Demolition is done using one crawler crane, excavator and welding machine.

\$64.70

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 Project Description Disconnect and remove MV Transformers 115 KV @ Substation Group : D10 Quantity
Daily Production 2.00 EA 2.24 EA per 10 hour shift Project # : 3 Work Days 0.9 Days Estimator : Mihaela Tomulescu EA per Total Cost Unit Price Per EA \$3,162 \$4,216 Unit Price \$1,756.68 per EA Probable Low Cost Parameter 2.46125 \$1,581.01 Total Cost \$3,513 Probable High Cost Parameter 1.79 \$2,108.01

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.9	10	8.90	L	\$55.45	incl. in rate	incl. in rate	\$493.53
Electrician	Active	1.00	0.9	10	8.90	L	\$55.25	incl. in rate	incl. in rate	\$491.75
Hydraulic Excavator (1.5cy)	Active	1.00	0.9	10	8.90	E	\$140.73	incl. in rate	incl. in rate	\$1,252.50
Equipment Operator (light)	Active	0.50	0.9	10	4.45	L	\$69.39	incl. in rate	incl. in rate	\$308.79
				Labor Hours	22.25			1	TOTAL LABOR	\$1,294.07
				Equipment Hours	8.9			тота	L EQUIPMENT	\$1,252.50

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$64.70	\$64.70

SUBCONTRACT COSTS Description Quantity Units Unit Contract or Quote Notes / Company Price Amount Hauling to Disposal Site Or Recycle Site \$400.00 2.00 20 tons a load \$800.00 Loads TOTAL SUBCONTRACTS \$800.00

SUMMARY OF COSTS						
Labor Cost	\$1,294.07	Labor Burden @	0.0%	\$0.00		\$1,294.07
Material Cost	\$64.70	Material Tax @	7.8%	\$5.01		\$69.72
Equipment Cost	\$1,252.50	Equipment Tax @	7.8%	\$97.07		\$1,349.57
Subcontractors	\$800.00					\$800.00
DIRECT COST SUBTOTALS	\$3,411			\$102	DIRECT COST SUBTOTALS	\$3,513
Additional Pay Item Notes :						

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	5.018		Project	: KRRP - Copco 2				į
		Disconnect and remove Medium \	Voltage Circuit Breakers 69KV @						
Description	:	Substation		Group	: D10				
Quantity	:	5.00 EA							
Daily Production	:	2.50 EA per	10 hour shift	Project #	: 3				
Work Days	:	2.0 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA	
Unit Price	:	\$1,906.65 per EA		Probable Low	Cost Parameter	2.75	\$8,580	\$1,715.99	
Total Cost		\$9.533		Probable High	Cost Parameter	2	\$11 440	\$2 287 98	

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.35	incl. in rate	incl. in rate	\$1,166.94
Electrician	Active	1.00	2.0	10	20.00	L	\$55.25	incl. in rate	incl. in rate	\$1,105.06
Hydraulic Crane (35tn)	Active	1.00	2.0	10	20.00	E	\$117.77	incl. in rate	incl. in rate	\$2,355.40
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.39	incl. in rate	incl. in rate	\$1,447.76
Laborer	Active	1.00	2.0	10	20.00	L	\$51.01	incl. in rate	incl. in rate	\$1,020.20
				The state of the s						
				Labor Hours	80			Т	OTAL LABOR	\$4,739.96

WATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$237.00	\$237.00

TOTAL MATERIAL \$237.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
Hauling to Disposal Site Or Recycle Site	5.00	Loads	20 tons a load	\$400.00		\$2,000.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$2,000.00

SUMMARY OF COSTS					
Labor Cost	\$4,739.96 Labor Burden @	0.0%	\$0.00		\$4,739.9
Material Cost	\$237.00 Material Tax @	7.8%	\$18.37		\$255.3
Equipment Cost	\$2,355.40 Equipment Tax @	7.8%	\$182.54		\$2,537.9
Subcontractors	\$2,000.00				\$2,000.0
DIRECT COST SUBTOTALS	\$9,332		\$201	DIRECT COST SUBTOTALS	\$9,5
Additional Pay Item Notes :					

Production is based off of RSMs using Crew formed of 1 Forman, 1 Electrician, 1 Crane. Considered 1 laborer to help loading circuit breakers in the truck for saving it in the designated place.

\$24.56

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	5.019		Project	: KRRP - Copco 2			
Description	:	Disconnect and remove MV Transforme	ers 12 KV @ Substation	Group	: D10			
Quantity	: [1.00 EA		_				
Daily Production	: [5.00 EA per 10	hour shift	Project #	: 3			
Work Days	:	0.2 Days	<u> </u>	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,403.33 per EA		Probable Low Co	ost Parameter	5.5	\$1,263	\$1,262.99
Total Cost	:	\$1,403		Probable High C	ost Parameter	4	\$1,684	\$1,683.99

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.2	10	2.00	L	\$55.45	incl. in rate	incl. in rate	\$110.91
Electrician	Active	1.00	0.2	10	2.00	L	\$55.25	incl. in rate	incl. in rate	\$110.51
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.2	10	2.00	E	\$225.40	incl. in rate	incl. in rate	\$450.80
Equipment Operator (light)	Active	1.00	0.2	10	2.00	L	\$69.39	incl. in rate	incl. in rate	\$138.78
Truck Driver (light)	Active	1.00	0.2	10	2.00	L	\$65.47	incl. in rate	incl. in rate	\$130.94
				l abaa Hawa		1			OTAL LABOR	\$404.41
				Labor Hours					OTAL LABOR	\$491.13
				Equipment Hours	2			TOTAL	. EQUIPMENT	\$450.8

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$24.56	\$24.5

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit	Con	ract or Quote
			Company	Price		Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads		\$400.00		\$400.00
					TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS				
Labor Cost	\$491.13 Labor Burden @	0.0% \$0.00		\$491.13
Material Cost	\$24.56 Material Tax @	7.8% \$1.90		\$26.46
Equipment Cost	\$450.80 Equipment Tax @	7.8% \$34.94		\$485.74
Subcontractors	\$400.00			\$400.00
DIRECT COST SUBTOTALS	\$1,366	\$37	DIRECT COST SUBTOTALS	\$1,403
Additional Pay Item Notes :				
Production is based off of RSMs using C	rew formed of 1 Forman, 1 Electrician,1 Loader to	o discharge the transformer in the truck for disp	osal.	

\$132.77

TOTAL MATERIAL

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	5.020		Project	: KRRP - Copco 2			
			nnection between Copco#2 sub and HE					
Description	:	plant @ Substation		Group	: D10			
Quantity	: [0.10 Mile		_				
Daily Production	: [0.06 Mile per	10 hour shift	Project #	: 3			
Work Days	:	1.6 Days		Estimator	: Mihaela Tomulescu	Mile per	Total Cost	Unit Price Per Mile
Unit Price	:	\$97,483.57 per Mile		Probable Low	Cost Parameter	0.06875	\$8,774	\$87,735.21
Total Cost	:	\$9,748		Probable High	Cost Parameter	0.05	\$11,698	\$116,980.28

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.45	incl. in rate	incl. in rate	\$887.25
Electrician	Active	2.00	1.6	10	32.00	L	\$55.25	incl. in rate	incl. in rate	\$1,768.10
Truck, Utility, with Man-Basket	Active	1.00	1.6	10	16.00	E	\$31.90	incl. in rate	incl. in rate	\$510.40
				Labor Hours	48	1		1	TOTAL LABOR	\$2,655.34
				Equipment Hours					L EQUIPMENT	\$510.40

m	Order	Conversion	Order	Order	Material
ntity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$132.77	\$132.77
	ntity	ntity Unit	ntity Unit Factor / Waste	ntity Unit Factor / Waste Quantity	ntity Unit Factor / Waste Quantity Price

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high					
voltage line work - Rent per day	2.00	days		\$3,000.00	\$6,000.00
Hauling to Disposal Site Or Recycle Site	1.00	Loads		\$400.00	\$400.00
				TOTAL S	UBCONTRACTS \$6,400.00

SUMMARY OF COSTS				
Labor Cost	\$2,655.34 Labor Burden @	0.0% \$0.00		\$2,655.34
Material Cost	\$132.77 Material Tax @	7.8% \$10.29		\$143.06
Equipment Cost	\$510.40 Equipment Tax @	7.8% \$39.56		\$549.96
Subcontractors	\$6,400.00			\$6,400.00
DIRECT COST SUBTOTALS	\$9,699	\$50	DIRECT COST SUBTOTALS	\$9,748
Additional Pay Item Notes :				
Production is based off of RSMs using	Crew formed of 1 Forman, 1 Electrician. Equipment"	: 1 Utility Man-Basket Truck, Trailer with cable pulling ri	ig, for high voltage line work.	

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Copco 2 Project Description : D03 Quantity **Daily Production** Project # Work Days 2.0 Days Estimator : Mihaela Tomulescu LS per **Total Cost** Unit Price Per LS **Unit Price** \$25,473.07 per LS **Probable Low Cost Parameter** 1.375 \$22,926 \$22,925.76 Total Cost \$25,473 Probable High Cost Parameter \$30,568 \$30,567.68

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.0	10	20.00	L	\$55.45	incl. in rate	incl. in rate	\$1,109.06
Electrician	Active	4.00	2.0	10	80.00	L	\$55.25	incl. in rate	incl. in rate	\$4,420.24
Truck, Utility, with Man-Basket	Active	1.00	2.0	10	20.00	E	\$31.90	incl. in rate	incl. in rate	\$638.00
Laborer	Active	2.00	2.0	10	40.00	L	\$51.01	incl. in rate	incl. in rate	\$2,040.40
Hydraulic Excavator (1.5cy)	Active	1.00	2.0	10	20.00	E	\$140.73	incl. in rate	incl. in rate	\$2,814.60
Hydraulic Crane (17tn)	Active	1.00	2.0	10	20.00	E	\$82.43	incl. in rate	incl. in rate	\$1,648.60
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$81.02	incl. in rate	incl. in rate	\$1,620.42
Equipment Operator (light)	Active	1.00	2.0	10	20.00	L	\$69.39	incl. in rate	incl. in rate	\$1,387.80
Vibratory Hammer & Extractor	Active	1.00	2.0	10	20.00	E	\$94.14	incl. in rate	incl. in rate	\$1,882.80

l	\$10,577.92	TOTAL LABOR	180	Labor Hours
l	\$6,984.00	TOTAL EQUIPMENT	80	Equipment Hours

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$528.90	\$528.90

TOTAL MATERIAL \$528.90

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent trailer with cable pulling rig, for high						
voltage line work - Rent per day	2.00	days		\$3,000.0	00	\$6,000.00
Hauling to Disposal Site Or Recycle Site	2.00	Loads		\$400.00		\$800.00
					TOTAL SUBCONTRACTS	\$6,800.00

SUMMARY OF COSTS						
Labor Cost	\$10,577.92	Labor Burden @	0.0%	\$0.00		\$10,577.92
Material Cost	\$528.90	Material Tax @	7.8%	\$40.99		\$569.89
Equipment Cost	\$6,984.00	Equipment Tax @	7.8%	\$541.26		\$7,525.26
Subcontractors	\$6,800.00					\$6,800.00
DIRECT COST SUBTOTALS	\$24,891			\$582	DIRECT COST SUBTOTALS	\$25,473
Additional Pay Item Notes :						

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator& 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete) for demo: 4 Electrician,, 1 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.022	Project	: KRRP - Copco 2			
		Demolish overhead transmission line and structure 69 KV Copco#1 to Iron					
Description	:	Gate	Group	: D03			
Quantity	:	5.00 Miles					
Daily Production	:	0.13 Miles per 10 hour shift	Project #	: 3			
Work Days	:	40.0 Days	Estimator	: Mihaela Tomulescu	Miles per	Total Cost	Unit Price Per Miles
Unit Price	:	\$106,556.17 per Miles	Probable Low C	Cost Parameter	0.1375	\$479,503	\$95,900.55
Total Cost		\$532 781	Probable High (Cost Parameter	0.1	\$639 337	\$127.867.40

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	40.0	10	400.00	L	\$55.45	incl. in rate	incl. in rate	\$22,181.20
Electrician	Active	2.00	40.0	10	800.00	L	\$55.25	incl. in rate	incl. in rate	\$44,202.40
Truck, Utility, with Man-Basket	Active	2.00	40.0	10	800.00	E	\$31.90	incl. in rate	incl. in rate	\$25,520.00
Laborer	Active	2.00	40.0	10	800.00	L	\$51.01	incl. in rate	incl. in rate	\$40,808.00
Hydraulic Excavator (1.5cy)	Active	1.00	40.0	10	400.00	E	\$140.73	incl. in rate	incl. in rate	\$56,292.00
Hydraulic Crane (80tn)	Active	1.00	40.0	10	400.00	E	\$197.66	incl. in rate	incl. in rate	\$79,064.00
Equipment Operator (crane)	Active	1.00	40.0	10	400.00	L	\$81.02	incl. in rate	incl. in rate	\$32,408.40
Equipment Operator (light)	Active	1.00	40.0	10	400.00	L	\$69.39	incl. in rate	incl. in rate	\$27,756.00
Vibratory Hammer & Extractor	Active	1.00	40.0	10	400.00	E	\$94.14	incl. in rate	incl. in rate	\$37,656.00

Labor Hours	2800	TOTAL LABOR	\$167,356.00
Equipment Hours	2000	TOTAL EQUIPMENT	\$198,532.00

TOTAL MATERIAL

\$8,822.84

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$8,367.80	\$8,367.80
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	96.00	СҮ	1.000	96.00	\$4.74	\$455.04

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent trailer with cable pulling rig, for high						
voltage line work - Rent per day	40.00	days		\$3,000.00		\$120,000.00
Hauling to Disposal Wire	5.00	Loads	1 load per mile of wire	\$400.00		\$2,000.00
Hauling to Disposal Structures	50.00	Loads	2 Structures per Load	\$400.00		\$20,000.00
					TOTAL SUBCONTRACTS	\$142,000.00

SUMMARY OF COSTS				
Labor Cost	\$167,356.00 Labor Burden @	0.0%	\$0.00	
Material Cost	\$8,822.84 Material Tax @	7.8%	\$683.77	
Equipment Cost	\$198,532.00 Equipment Tax @	7.8%	\$15,386.23	
Subcontractors	\$142,000.00			
DIRECT COST SUBTOTALS	\$516,711	•	\$16,070	DIRECT COST SUBTOTALS
Additional Pay Item Notes :				

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo :2 Electrician, 1 utility truck to access poles, string conductor, modify structure ams, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission line poles or structures are commonly between 60 and 140 feet tall. There are several different kinds of transmission structures. Transmission structures can be constructed of metal or wood. They can be single-poled or multi-poled. They can be single-circuited, carrying one set of transmission lines or double-circuited with two sets of lines. Assumed based on RSMs we have "Communications transmission tower, radio towers self-supporting, wind load 70 mph basic wind speed, 120 high" (33811310). Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 5 miles of overhead transmission we will have approximately 96 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or guy wires may be required. Poles with guy wires impact a much larger area. Angle structures are usually formed the diameter of the pole and the depth the base is buried depends on the condition of the soils and the voltage of the line. Assumed the

\$132.77

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	5.023		Project	: KRRP - Copco 2			
		Demolish transmission conductor	from existing structure pole. Structures					
Description	:	remain.		Group	: D03			
Quantity	:	1.50 Miles						
Daily Production	:	0.94 Miles per	10 hour shift	Project #	: 3			
Work Days	:	1.6 Days		Estimator	: Mihaela Tomulescu	Miles per	Total Cost	Unit Price Per Miles
Unit Price	:	\$7,132.21 per Miles		Probable Low	Cost Parameter	1.03125	\$9,628	\$6,418.99
Total Cost	:	\$10,698		Probable High	Cost Parameter	0.75	\$12,838	\$8,558.65

CREW COSTS										
Description	Active	# in	Days Worked	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew		/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.45	incl. in rate	incl. in rate	\$887.25
Electrician	Active	2.00	1.6	10	32.00	L	\$55.25	incl. in rate	incl. in rate	\$1,768.10
Truck, Utility, with Man-Basket	Active	2.00	1.6	10	32.00	Е	\$31.90	incl. in rate	incl. in rate	\$1,020.80
				Labor Hours					FOTAL LABOR	\$2,655.34
				Equipment Hours	32			IOIA	L EQUIPMENT	\$1,020.80

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$ 132.77	\$132.77

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent trailer with cable pulling rig, for high voltage line work - Rent per day Hauling to Disposal Site Or Recycle Site	2.00 2.00	days Loads	1 load per mile of wire	\$3,000.00 \$400.00		\$6,000.00 \$800.00
					TOTAL SUBCONTRACTS	\$6,800.00

SUMMARY OF COSTS					
Labor Cost	\$2,655.34 Labor Burden @	0.0%	\$0.00		\$2,655.34
Material Cost	\$132.77 Material Tax @	7.8%	\$10.29		\$143.06
Equipment Cost	\$1,020.80 Equipment Tax @	7.8%	\$79.11		\$1,099.91
Subcontractors	\$6,800.00				\$6,800.00
DIRECT COST SUBTOTALS	\$10,609		\$89	DIRECT COST SUBTOTALS	\$10,698
Additional Pay Item Notes :					

Production is based off of RSMs using Crew Elec2: 2 Electrician,, 2 utility truck to access poles, string conductor, etc. assumed they need to rent trailer with cable pulling rig, for high voltage line work. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. This estimate is made as the best AECOM assumption, as actual pricing would occur during the detailed engineering and construction bid process.

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Copco 2 Project Description Group : D03 Remove structures between pole 2/007 and Iron Gate Quantity 10 hour shift **Daily Production** Project # **Work Days** 2.4 Days Estimator : Mihaela Tomulescu EA per **Total Cost** Unit Price Per EA \$3,334.27 per EA Probable Low Cost Parameter \$18,005 \$24,007 Unit Price 2.75 \$3,000.84 \$4,001.13 **Total Cost** \$20,006 **Probable High Cost Parameter**

CREW COSTS	<u> </u>		_				<u></u>			
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	2.4	10	24.00	L	\$55.45	incl. in rate	incl. in rate	\$1,330.87
Electrician	Active	1.00	2.4	10	24.00	L	\$55.25	incl. in rate	incl. in rate	\$1,326.07
Truck, Utility, with Man-Basket	Active	1.00	2.4	10	24.00	E	\$31.90	incl. in rate	incl. in rate	\$765.60
Laborer	Active	2.00	2.4	10	48.00	L	\$51.01	incl. in rate	incl. in rate	\$2,448.48
Hydraulic Excavator (1.5cy)	Active	1.00	2.4	10	24.00	Е	\$140.73	incl. in rate	incl. in rate	\$3,377.52
Hydraulic Crane (50tn)	Active	1.00	2.4	10	24.00	Е	\$136.20	incl. in rate	incl. in rate	\$3,268.80
Equipment Operator (crane)	Active	1.00	2.4	10	24.00	L	\$81.02	incl. in rate	incl. in rate	\$1,944.50
Equipment Operator (light)	Active	1.00	2.4	10	24.00	L	\$69.39	incl. in rate	incl. in rate	\$1,665.36
Vibratory Hammer & Extractor	Active	1.00	2.4	10	24.00	Е	\$94.14	incl. in rate	incl. in rate	\$2,259.36

Labor Hours	144	TOTAL LABOR	\$8,715.29
Equipment Hours	96	TOTAL EQUIPMENT	\$9,671.28

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$435.76	\$435.76

TOTAL MATERIAL \$435.76

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling to Disposal Site Or Recycle Site	1.00	Loads	20 tons a load	\$400.00		\$400.00
					TOTAL SUBCONTRACTS	\$400.00

SUMMARY OF COSTS						
Labor Cost	\$8,715.29	Labor Burden @	0.0%	\$0.00		\$8,715.29
Material Cost	\$435.76	Material Tax @	7.8%	\$33.77		\$469.54
Equipment Cost	\$9,671.28	Equipment Tax @	7.8%	\$749.52		\$10,420.80
Subcontractors	\$400.00					\$400.00
DIRECT COST SUBTOTALS	\$19,222	•		\$783	DIRECT COST SUBTOTALS	\$20,006
Additional Pay Item Notes :						

The switchyard site and transmission line rights-of-way will be restored to the natural conditions. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator& 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 4 Electrician,, 1 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment. Assumed the structures are disposed to Yreka recycling, 34 miles away. These are only estimates as actual pricing would occur during the detailed engineering and construction bid process.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	5.035	Project : KRRP	- Copco 2		
Description	:	Copco Village Building Demolition	Group : D03			
Quantity	:	31,680.00 SF				
Daily Production	:	2,000.00 SF per 10 hour shift	Project # : 3			
Work Days	:	15.8 Days	Estimator : Eric Jo	ones SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$12.34 per SF	Probable Low Cost Paran	neter 2300	\$332,165	\$10.48
Total Cost	:	\$390,782	Probable High Cost Parar	neter 1700	\$449,399	\$14.19

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	15.8	10	158.00	L	\$48.27	incl. in rate	incl. in rate	\$7,626.6
Laborer	Active	4.00	15.8	10	632.00	L	\$45.80	incl. in rate	incl. in rate	\$28,945.6
Equipment Operator (medium)	Active	2.00	15.8	10	316.00	L	\$66.28	incl. in rate	incl. in rate	\$20,944.4
Hydraulic Excavator (5.0cy)	Active	1.00	15.8	10	158.00	E	\$274.63	incl. in rate	incl. in rate	\$43,391.5
Loader, FE Rubber Tire (3.5cy)	Active	1.00	15.8	10	158.00	Е	\$64.23	incl. in rate	incl. in rate	\$10,148.3
				Labor Hours	1106				TOTAL LABOR	\$57,516.7
				Equipment Hours	316			1	OTAL EQUIPMENT	\$53,539.8

MATERIAL COSTS								
Description	ltem	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
								\$0.00
								\$0.00
								\$0.00
								\$0.00
						TOTAL MATERIAL		\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Conversion (SFXH*.33/27)	4,646 CY				\$0.00
Conversion CY to Tons (2 tons per CY)	2,324.00 tons	Klamath County Landfill	\$74.00		\$171,976.00
Hauling cost to landfill	259.00 Loads	18 CY per load	\$400.00		\$103,600.00
					\$0.00
				TOTAL SUBCONTRACTS	\$275,576.00

SUMMARY OF COSTS						
Labor Cost	\$57,516.74 Labor B	Burden @	49.7%	\$0.00		\$57,516.74
Material Cost	\$0.00 Material	al Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$53,539.88 Equipme	nent Tax @	7.75%	\$4,149.34		\$57,689.22
Subcontractors	\$275,576.00					\$275,576.00
DIRECT COST SUBTOTALS	\$386,633			\$4,149	DIRECT COST SUBTOTALS	\$390,782
Additional Pay Item Notes :						_

IRON GATE DAM REMOVAL

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.001	Project	: KRRP - Iron Gate			
		Furnish, Install, and Remove Barge-Mounted Crane in Reservoir					
Description	:		Group	: D02			
Quantity	:	1.00 ls	 '				
Daily Production	:	0.13 Is per 10 hour shift	Project #	: 4			
Work Days		8.0 Days	Estimator	: Eric Jones	Is per	Total Cost	Unit Price Per Is
Unit Price	:	\$151,385.72 per ls	Probable Low 0	Cost Parameter	0.1375	\$136,247	\$155,648.74
Total Cost	:	\$151,386	Probable High	Cost Parameter	0.10625	\$174,094	\$198,884.50

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	8.0	10	80.00	L	\$53.10	incl. in rate	incl. in rate	\$4,247.76
Laborer	Active	2.00	8.0	10	160.00	L	\$50.38	incl. in rate	incl. in rate	\$8,060.80
Equipment Operator (crane)	Active	1.00	8.0	10	80.00	L	\$75.25	incl. in rate	incl. in rate	\$6,020.08
Equipment Operator (oiler)	Active	1.00	8.0	10	80.00	L	\$69.23	incl. in rate	incl. in rate	\$5,538.72
Tugboat Captain	Active	1.00	8.0	10	80.00	L	\$74.54	incl. in rate	incl. in rate	\$5,962.88
Tugboat Hand	Active	1.00	8.0	10	80.00	L	\$50.38	incl. in rate	incl. in rate	\$4,030.40
Barge Operator	Active	1.00	8.0	10	80.00	L	\$44.33	incl. in rate	incl. in rate	\$3,546.40
Barge, Deck Engineer, Winch Operator	Active	1.00	8.0	10	80.00	L	\$70.69	incl. in rate	incl. in rate	\$5,654.88
Crawler Crane (270tn)	Active	2.00	8.0	10	160.00	E	\$399.50	incl. in rate	incl. in rate	\$63,920.00
				Labor Hours	720				TOTAL LABOR	\$43,061.92
				Equipment Hours	160				TOTAL EQUIPMENT	\$63,920.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	-	Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Uni	t		Contract or Quote
			Company	Pric	e		Amount
Barge Rental 3 Months	3.00	month	1.000	3.00	\$9,600.00		\$28,800.00
Tug Boat Rental 3 Months	3.00	month	1.000	3.00	\$3,550.00		\$10,650.00
						TOTAL SUBCONTRACTS	\$39,450.00

SUMMARY OF COSTS					
Labor Cost	\$43,061.92 Labor Burden @	0.0%	\$0.00		\$43,061.92
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$63,920.00 Equipment Tax @	7.75%	\$4,953.80		\$68,873.80
Subcontractors	\$39,450.00				\$39,450.00
DIRECT COST SUBTOTALS	\$146,432		\$4,954	DIRECT COST SUBTOTALS	\$151,386
Additional Pay Item Notes :					

PAY ITEM INFORMATION											
PAY ITEM NUMBER	:	4.002	Project	: KRRP - Iron Gate							
		Furnish, Install, and Remove Temporary Air Vent Hose									
Description	:	from Barge to Diversion Tunnel Intake Structure	Group	: D02							
Quantity	:	1.00 LS									
Daily Production	:	1.00 LS per 10 hour shift	Project #	: 4							
Work Days	: '	1.0 Days	Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS				
Unit Price	:	\$19,693.52 per LS	Probable Low Cost Parameter		1.15	\$16,739	\$19,123.20				
Total Cost	:	\$19,694	Probable High Cost Parameter		0.8	\$23,632	\$26,997.45				

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Barge, Bargeman, Deckhand, Fireman, Oiler	Active	2.00	1.0	10	20.00	L	\$67.06	incl. in rate	incl. in rate	\$1,341.12
Barge, Deck Engineer, Winch Operator	Active	8.00	1.0	10	80.00	L	\$70.69	incl. in rate	incl. in rate	\$5,654.88
Barge, Sectional, 20'x10'	Active	2.00	1.0	10	20.00	E	\$4.48	incl. in rate	incl. in rate	\$89.60
Barge, Sectional, 40'x10', includes ramp	Active	1.00	1.0	10	10.00	E	\$16.48	incl. in rate	incl. in rate	\$164.80
Carpenter Foreman (out)	Active	1.00	1.0	10	10.00	L	\$51.04	incl. in rate	incl. in rate	\$510.40
Carpenters	Active	1.00	1.0	10	10.00	L	\$79.86	incl. in rate	incl. in rate	\$798.60
Carpenters, Journeyman	Active	4.00	1.0	10	40.00	L	\$71.91	incl. in rate	incl. in rate	\$2,876.28
Cement finisher	Active	2.00	1.0	10	20.00	L	\$79.86	incl. in rate	incl. in rate	\$1,597.20
Conc Bucket (1cy)	Active	2.00	1.0	10	20.00	E	\$2.83	incl. in rate	incl. in rate	\$56.60
Conc Pump (large, 196 cy/hr, 111' & over)	Active	1.00	1.0	10	10.00	E	\$139.74	incl. in rate	incl. in rate	\$1,397.40
Conc Saw (19 - 36 hp)	Active	1.00	1.0	10	10.00	E	\$6.89	incl. in rate	incl. in rate	\$68.90

		_	
Labor Ho	rs 180	TOTAL LABOR	\$12,778.48
Equipment Ho	rs 70	TOTAL EQUIPMENT	\$1,777.30

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		laterial Cost
	-						
						TOTAL MATERIAL	\$n nr

Quantity Units	Notes /	Unit	Contract or Quote
	Company	Price	Amount
1 EA	Cost per Mob	\$5,000.00	\$5,000.00
		Company	. Company Price

			_	
			TOTAL SUBCONTRACTS	\$5,000.00
SUMMARY OF COSTS				
Labor Cost	\$12,778.48 Labor Burden @	0.0%		\$12,778.48
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$1,777.30 Equipment Tax @	7.75% \$137.74		\$1,915.04
Subcontractors	\$5,000.00			\$5,000.00
DIRECT COST SUBTOTALS	\$19,556	\$138	DIRECT COST SUBTOTALS	\$19,694
Additional Pay Item Notes :			·	

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.003		Project	: KRRP - Iron Gate			
		Remove Reinforced Concrete R	ting Located D/S of Closure					
Description	:	Gate and U/S for Flap Gate		Group	: D02			
Quantity	:	46.00 CY						
Daily Production	:	11.56 CY per	10 hour shift	Project #	: 4			
Work Days	:	4.0 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$331.68 per CY		Probable Low	Cost Parameter	13.296875	\$12,969	\$322.08
Total Cost	:	\$15,257		Probable High	n Cost Parameter	8.671875	\$19,072	\$473.64

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.0	10	40.00	L	\$53.10	incl. in rate	incl. in rate	\$2,123.88
Equipment Operator (medium)	Active	1.00	4.0	10	40.00	L	\$72.91	incl. in rate	incl. in rate	\$2,916.32
Laborer	Active	4.00	4.0	10	160.00	L	\$50.38	incl. in rate	incl. in rate	\$8,060.80
Air Tool, Chipping Hammer	Active	4.00	4.0	10	160.00	E	\$1.64	incl. in rate	incl. in rate	\$262.25
Air Compressor 600 cfm	Active	2.00	4.0	10	80.00	E	\$21.74	incl. in rate	incl. in rate	\$1,739.11
				Labor Hours	240				TOTAL LABOR	\$13,101.00
				Equipment Hours	240				TOTAL EQUIPMENT	\$2,001.36

Description	Item	Order	Conversion	Order	Order	Materia
	Quantity	Unit	Factor / Waste	Quantity	Price	 Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
i					TOTAL SUBCONTRACTS	\$0.00

			1017/200200111181010	40.00
SUMMARY OF COSTS				
Labor Cost	\$13,101.00 Labor Burden @	0.0%		\$13,101.00
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$2,001.36 Equipment Tax @	7.75% \$155.11		\$2,156.46
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$15,102	\$155	DIRECT COST SUBTOTALS	\$15,257
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.004		Project	: KRRP - Iron Gate			
Description	:	Remove Reinforced Concrete S	toplog Structure	Group	: D07			
Quantity	: [6.00 CY						
Daily Production	:	6.00 CY per	10 hour shift	Project #	: 4			
Work Days	:	1.0 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$997.75 per CY		Probable Low C	ost Parameter	6.6	\$5,388	\$1,025.84
Total Cost	:	\$5,986		Probable High C	ost Parameter	5.1	\$6,884	\$1,310.80

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours	L/E	Rate	Cost	Rate	Cost
Labor Foreman (out)	Active	1.00	1.0	10	10.00	L	\$50.90	incl. in rate	incl. in rate	\$508.97
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.91	incl. in rate	incl. in rate	\$729.08
Laborer	Active	4.00	1.0	10	40.00	L	\$50.38	incl. in rate	incl. in rate	\$2,015.20
Hydraulic Excavator (2.5cy)	Active	1.00	1.0	10	10.00	Е	\$203.63	incl. in rate	incl. in rate	\$2,036.30
Air Tool, Chipping Hammer	Active	4.00	1.0	10	40.00	Е	\$1.64	incl. in rate	incl. in rate	\$65.56
Air Compressor 600 cfm	Active	2.00	1.0	10	20.00	E	\$21.74	incl. in rate	incl. in rate	\$434.78
				Labor Hours	60				TOTAL LABOR	\$3,253.25
				Equipment Hours	70				TOTAL EQUIPMENT	\$2,536.64

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	***
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					<u>.</u>	
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$3,253.25 Labor Burden @	0.0%		\$3,253.2
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.0
Equipment Cost	\$2,536.64 Equipment Tax @	7.75% \$196.59		\$2,733.2
Subcontractors	\$0.00			\$0.0
DIRECT COST SUBTOTALS	\$5,790	\$197	DIRECT COST SUBTOTALS	\$5,98
Additional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.005	Project	: KRRP - Iron Gate			
Description	: [Remove Water from behind Tailrace Cofferdam	Group	: D02			
Quantity	: [300,000.00 GAL					
Daily Production	: [191,400.00 GAL per 10 hour shift	Project #	: 4			
Work Days	: '	1.6 Days	Estimator	: Eric Jones	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$0.02 per GAL	Probable Low	Cost Parameter	220110	\$4,240	\$0.02
Total Cost	:	\$4,988	Probable High	Cost Parameter	162690	\$5,737	\$0.02

CREW COSTS				<u>.</u>			<u> </u>			
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	1.6	10	16.00	L	\$50.90	incl. in rate	incl. in rate	\$814.35
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.91	incl. in rate	incl. in rate	\$1,166.53
Laborer	Active	2.00	1.6	10	32.00	L	\$50.38	incl. in rate	incl. in rate	\$1,612.16
Pump, Centrifugal, 3"	Active	2.00	1.6	10	32.00	E	\$2.76	incl. in rate	incl. in rate	\$88.18
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.6	10	16.00	E	\$75.42	incl. in rate	incl. in rate	\$1,206.72
				Labor Hours	64				TOTAL LABOR	\$3,593.04
				Equipment Hours	48				TOTAL EQUIPMENT	\$1,294.90

Description	Item	Order	Conversion	Order	Order	Material
·	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
		•				

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					_	
	•	•	•		TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$3,593.04	Labor Burden @	0.0%			\$3,593.04
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$1,294.90	Equipment Tax @	7.75%	\$100.35		\$1,395.26
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$4,888			\$100	DIRECT COST SUBTOTALS	\$4,988
Additional Pay Item Notes :						_
						ı

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.006		Project	: IRONGATE			
		Provide Dewatering behind Tailra	ce Cofferdam for removal of Powerhouse in		D02			
Description		the dry		Group	:			
Quantity	:	1.00 LS		_				
Daily Production	:	0.04 LS per	10 hour shift	Project #	: KRRP - Iron Gate			
Work Days	: '	25.0 Days		Estimator	: Mihaela Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$25,775.56 per LS		Probable Low	Cost Parameter	0.046	\$21,909	\$25,029
Total Cost	:	\$25,776		Probable High	Cost Parameter	0.034	\$29,642	\$33,863

: \$25,776 Active Idle				rameter	0.046 0.034	\$21,909 \$29,642	\$25,029 \$33,863
			Probable High Cost Pa	· umoto:	0.001	420,012	400,000
iuic	# in Days crew Worke		Total L/E Hours	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Active	1.00 25.0	10	250.00 E	\$2.76	incl. in rate	incl. in rate	\$688.
Active	1.00 25.0	10	250.00 L	\$49.75	incl. in rate	incl. in rate	\$12,438
Active	1.00 25.0	10	250.00 L	\$50.38	incl. in rate	incl. in rate	\$12,595
					тот	TOTAL LABOR AL EQUIPMENT	\$25,033 \$688
Item	Order	Conversion	Order	Order			Material Cost
					то	TAL MATERIAL	\$0.
Quantity	Units	Notes /	Ur	nit .			Contract or Quote
quantity	Office	Company	Pri				Amount
					TOTAL S	UBCONTRACTS	\$0
\$25,033,25	.abor Burden @	49.7	% \$0.00 		TOTAL S	UBCONTRACTS	
\$0.00 N	.abor Burden @ Material Tax @	7.75	% \$0.00		TOTAL S	UBCONTRACTS	\$25,033 \$0
\$0.00 N \$688.92 E			% \$0.00		TOTAL SI	UBCONTRACTS	\$25,033 \$0 \$742
\$0.00 N \$688.92 E \$0.00	Material Tax @	7.75	% \$0.00 % \$53.39				\$25,033 \$0 \$742 \$0
\$0.00 N \$688.92 E	Material Tax @	7.75	% \$0.00			UBCONTRACTS ST SUBTOTALS	\$25,033 \$0 \$742
	Quantity	Quantity Unit	Equipment Hou Item Order Conversion Quantity Unit Factor / Waste	ltem Order Conversion Order Quantity Unit Factor / Waste Quantity	Requipment Hours 250 Item Order Conversion Order Order Quantity Unit Factor / Waste Quantity Price	Item Order Conversion Order Order Quantity Unit Factor / Waste Quantity Price	Equipment Hours 250 TOTAL EQUIPMENT



Total Cost .	\$173,41	J			Tobable High	COSL Faran	ietei	4.23	φ133,424	\$11,391.12
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.0	20	80.00	L	\$53.10	incl. in rate	incl. in rate	\$4,247.7
Laborer	Active	1.00	4.0	20	80.00	L	\$50.38	incl. in rate	incl. in rate	\$4,030.4
Equipment Operator (medium)	Active	1.00	4.0	20	80.00	L	\$72.91	incl. in rate	incl. in rate	\$5,832.64
Equipment Operator (crane)	Active	1.00	4.0	20	80.00	L	\$75.25	incl. in rate	incl. in rate	\$6,020.08
Crawler Crane (130tn)	Active	1.00	4.0	20	80.00	E	\$258.66	incl. in rate	incl. in rate	\$20,692.80
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.0	20	80.00	E	\$75.42	incl. in rate	incl. in rate	\$6,033.60
Pile Driver					400.00		ATO 50			240 500 0
Pile Driver	Active	2.00	4.0	20	160.00	L	\$78.56	incl. in rate	incl. in rate	\$12,569.60
				Labor Hours	480				TOTAL LABOR	\$32,700.4
				Equipment Hours	160				TOTAL EQUIPMENT	\$26,726.4

/ Waste Quantity	Price	Cost
060 848.00	\$25.00	\$21,200.00
060 78,948.80	\$0.50	\$39,474.40
000 1.00	\$6,067.44	\$6,067.44
1.	1.060 78,948.80	1.060 78,948.80 \$0.50

TOTAL MATERIAL \$66,741.84

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Load Allowance	20 LD		\$1,000.00		\$20,000.00
Crane Mobilization	1 LS		\$20,000.00		\$20,000.00
				TOTAL SUBCONTRACTS	\$40,000.00

SUMMARY OF COSTS				
Labor Cost	\$32,700.48 Labor Burden @	49.7% \$0.00		\$32,700.48
Material Cost	\$66,741.84 Material Tax @	7.75% \$5,172.49		\$71,914.33
Equipment Cost	\$26,726.40 Equipment Tax @	7.75% \$2,071.30		\$28,797.70
Subcontractors	\$40,000.00			\$40,000.00
DIRECT COST SUBTOTALS	\$166,169	\$7,244	DIRECT COST SUBTOTALS	\$173,413
Additional Pay Item Notes :				
This estimate is for furnishing and unload co	offer cell pile material			

PAY ITEM COST DETAIL WORKSHEET 4.007.1 Tailrace Coffer Dam- Drive Pile

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.007.1	Project : KRRP - Iron Gate			
Description	:	Tailrace Coffer Dam- Drive Pile	Group : D02			
Quantity	:	7,840.00 SF				
Daily Production	:	700.00 SF per 10 hour shift	Project # : 4			
Work Days	:	11.2 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$32.49 per SF	Probable Low Cost Parameter	770	\$229,251	\$33.41
Total Cost	:	\$254,723	Probable High Cost Parameter	595	\$292,932	\$42.68

	φ20 1,1 20	,			resusie riigii	Ooot i ai aii	10101	300	4202,002	ψ-12.00
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	11.2	10	112.00	L	\$53.10	incl. in rate	incl. in rate	\$5,946.8
Laborer	Active	3.00	11.2	10	336.00	L	\$50.38	incl. in rate	incl. in rate	\$16,927.6
Equipment Operator (crane)	Active	1.00	11.2	10	112.00	L	\$75.25	incl. in rate	incl. in rate	\$8,428.11
Equipment Operator (oiler)	Active	1.00	11.2	10	112.00	L	\$69.23	incl. in rate	incl. in rate	\$7,754.21
/ibratory Hammer & Extractor	Active	1.00	11.2	10	112.00	E	\$94.34	incl. in rate	incl. in rate	\$10,566.08
Welder, Portable	Active	1.00	11.2	10	112.00	E	\$7.84	incl. in rate	incl. in rate	\$877.80
Crawler Crane (130tn)	Active	1.00	11.2	10	112.00	E	\$258.66	incl. in rate	incl. in rate	\$28,969.92
Pile Driver	Active	4.00	11.2	10	448.00	L	\$78.56			\$35,194.88
D36 Hammer 36X100' Leads	Active	1.00	11.2	10	112.00	E	\$102.44	incl. in rate	incl. in rate	\$11,473.28
				Labor Hours	1120				TOTAL LABOR	\$74,251.7
				Labor Hours	0					

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
PDA Allowance	1.00	AL	1.000	1.00	\$15,000.00	\$15,000.00
Welding materials Allowance (10% of Labor)	1.00	AL	1.000	1.00	\$7,425.17	\$7,425.17

 TOTAL MATERIAL
 \$22,425.17

 SUBCONTRACT COSTS

 Description
 Quantity
 Units
 Notes / View
 Unit Company
 Contract or Quote Amount

 Predrilling for Pipe Pile (20' deep at 20 locations)
 400 VLFT
 \$126.00
 \$50,400.00

 Predrilling Equipment Mob and Demob
 1 LS
 \$50,000.00
 \$50,000.00

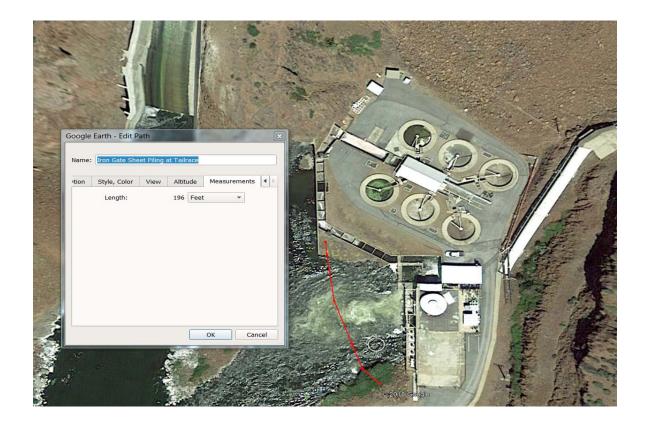
Predrilling Equipment Mob and Demob 1 LS \$50,000.00 \$50,000.00 \$50,000.00 \$70

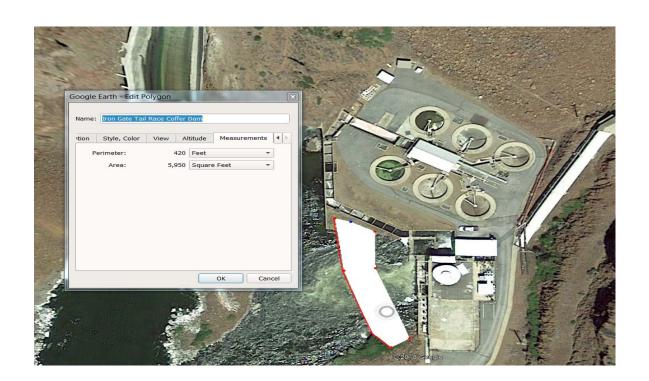
This estimate is to drive pile for coffer dam at the tailrace. It is expected that the wall will be a combi pile wall. Utilizing pipe pile and sheet pile.

4.007.1 Tailrace Coffer Dam- Drive Pile Details High Cost Factors Bad Weather 0% No Bad Weather 0% Gas Price Increase 10% Gas Price Decrease 10% Unforeseen Contaminated Mats/ Access Issues 5% No Unforeseen Contaminated Mats/ Access Issues 0% 15% 10%

Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)

1500 100





4.007.2 Tailrace Coffer Dam-Extract Pile

PAY ITE	EM INFORMATION								
	PAY ITEM NUMBER	:	4.007.2		Project	: KRRP - Iron Gate			
	Description	:	Tailrace Coffer Dam-Extract Pile		Group	: D02			
(Quantity	:	7,840.00 SF		_'				
	Daily Production	:	1,050.00 SF per	10 hour shift	Project #	: 4			
١	Work Days	:	7.5 Days		Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
ı	Unit Price	:	\$15.85 per SF		Probable Low Cos	st Parameter	1155	\$111,816	\$16.29
1	Total Cost	:	\$124,240		Probable High Co	st Parameter	892.5	\$142,876	\$20.82

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	7.5	10	75.00	L	\$53.10	incl. in rate	incl. in rate	\$3,982.28
Laborer	Active	3.00	7.5	10	225.00	L	\$50.38	incl. in rate	incl. in rate	\$11,335.50
Equipment Operator (crane)	Active	1.00	7.5	10	75.00	L	\$75.25	incl. in rate	incl. in rate	\$5,643.83
Equipment Operator (oiler)	Active	1.00	7.5	10	75.00	L	\$69.23	incl. in rate	incl. in rate	\$5,192.55
/ibratory Hammer & Extractor	Active	1.00	7.5	10	75.00	E	\$94.34	incl. in rate	incl. in rate	\$7,075.50
Welder, Portable	Active	1.00	7.5	10	75.00	E	\$7.84	incl. in rate	incl. in rate	\$587.81
Crawler Crane (130tn)	Active	1.00	7.5	10	75.00	Е	\$258.66	incl. in rate	incl. in rate	\$19,399.50
Pile Driver	Active	4.00	7.5	10	300.00	L	\$78.56			\$23,568.00
				_					_	
				Labor Hours	750				TOTAL LABOR	\$49,722.15
				Equipment Hours	225				TOTAL EQUIPMENT	\$27,062.81

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Welding materials Allowance (10% of Labor)	1.00	AL	1.000	1.00	\$4,972.22		\$4,972.22
						· ·	
						TOTAL MATERIAL	\$4,972.22

SUBCONTRACT COSTS										
Description	Quantity Units	Notes /	Unit		Contract or Quote					
		Company	Price		Amount					
Load Allowance	20 LD		\$1,000.00		\$20,000.00					
Crane Mobilization	1 LS		\$20,000.00		\$20,000.00					
				TOTAL SUBCONTRACTS	\$40,000.00					

SUMMARY OF COSTS				
Labor Cost	\$49,722.15 Labor Burden @	49.7% \$0.00		\$49,722.15
Material Cost	\$4,972.22 Material Tax @	7.75% \$385.35		\$5,357.56
Equipment Cost	\$27,062.81 Equipment Tax @	7.75% \$2,097.37		\$29,160.18
Subcontractors	\$40,000.00			\$40,000.00
DIRECT COST SUBTOTALS	\$121,757	\$2,483	DIRECT COST SUBTOTALS	\$124,240
Additional Pay Item Notes :				
This estimate is for extracting pile and loadi	ing out coffer dam material.			

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.010	Project	: KRRP - Iron Gate			
		Upstream Cofferdam to be Removed in the Wet					
Description	:		Group	: D08			
Quantity	:	10,000.00 cy					
Daily Production	:	1,560.00 cy per 20 hour shift	Project #	: 4			
Work Days	:	6.4 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$17.00 per cy	Probable Low Co	ost Parameter	1794	\$144,466	\$16.50
Total Cost	:	\$169,960	Probable High Co	ost Parameter	1326	\$195,454	\$22.33

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	6.4	20	128.00	E	\$274.63	incl. in rate	incl. in rate	\$35,152.64
Dozer (235hp)(CATD7)	Active	1.00	6.4	20	128.00	E	\$165.11	incl. in rate	incl. in rate	\$21,134.08
Loader, FE Rubber Tire (5.25cy)	Active	1.00	6.4	20	128.00	E	\$75.42	incl. in rate	incl. in rate	\$9,653.76
Truck Driver (heavy)	Active	2.00	5.7	20	229.44	L	\$63.35	incl. in rate	incl. in rate	\$14,534.79
Labor Foreman	Active	1.00	6.4	20	128.00	L	\$53.10	incl. in rate	incl. in rate	\$6,796.42
Laborer	Active	1.00	6.4	20	128.00	L	\$50.38	incl. in rate	incl. in rate	\$6,448.64
Equipment Operator (medium)	Active	3.00	6.4	20	384.00	L	\$72.91	incl. in rate	incl. in rate	\$27,996.67
CAT 745 (32 CY) OFF ROAD TRUCK	Active	2.00	5.7	20	229.44	E	\$174.47	incl. in rate	incl. in rate	\$40,030.40
				abor Hours	869.44 613.44				TOTAL LABOR	\$55,776.52 \$105,970.88

						+ ,
TERIAL COSTS						
Description	Item Order	Conversion	Order	Order		Material
	Quantity Unit	Factor / Waste	Quantity	Price		Cost
					TOTAL MATERIAL	\$
					TOTAL WATERIAL	

SUBCONTRACT COSTS	SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit		Contract or Quote					
			Company	Price		Amount					
					TOTAL SUBCONTRACTS	\$0.00					

SUMMARY OF COSTS			
Labor Cost	\$55,776.52 Labor Burden @	49.7% \$0.00	\$55,
Material Cost	\$0.00 Material Tax @	7.75% \$0.00	
Equipment Cost	\$105,970.88 Equipment Tax @	7.75% \$8,212.74	\$114
Subcontractors	\$0.00		
DIRECT COST SUBTOTALS	\$161,747	\$8,213	DIRECT COST SUBTOTALS \$1
Additional Pay Item Notes :			

4.010 Upstream Cofferdam Deta	to be Removed in the Wet	
High Cost Factors	Low Cost Factors	Г
Bad Weather 0%	No Bad Weather	0%
Gas Price Increase 10% Unforeseen Contaminated Mats/ Access Issues 5%		10%
Unforeseen Contaminated Matty Access issues 57	NO Unforeseen Contaminated Mats/ Access Issues	5% 15%
		1070
	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) Overall Production	
120		
2.	65% 1560	
Haul Notes	Excavator Loading Production per shift	
	Excavator Losaing Production per snift CY per Hour 57	
	CF Buckt Size 5.00	
	Buckets Per Hour 11	
	1.00 1.00	
# of Haul Vehicles	CY per Hour (5 CY Bucket) 57	
	CF Per Hour Ideal Production Per 8 Hour Shift 160	
	Efficient Compared to Ideal Production 35%	
	Illustificiencies Compared to Ideal Production 65%	
Return Speed (Unloaded MPH) 15	mentionides Compared to facial Froduction	
Haul Distance (Wiles) 1.00c		
Shift Length (Hours) 20		
omit Lengui (nouis)		
Cycle Time		
Updat Time (Load Time Minutes / 60mins) 0.00		
Local Time (Local Time anniver Fermins) 4.14 Time (House Time Anniver Fermins) 6.15 All Time (House Time Anniver Fermins)		
Dump Time (Dump Time Minutes / 60 Mins)		
Return Time (Haul Distance / Return Speed)		
Hours Per Cycle Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) 65%		
Cartal Hours Per Cycle (Hours per Cycle (Hours per Cycle)		
Number of Cycles/ Bulk CV/ (Haul Vehicle Cap X # of Haul Vehicles) 239		
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) 2.06		
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) 2.06 Number of Haul Days 5.7		
Speed Loaded		
Speed Loaded Max Weight Ibs of loaded 745 164,500.00		
Tons 82.25		
20lbs/Ton Rolling weight 4		
Rolling Resistance (1% for each 20lbs/Ton) Slope Grade 8%		
Total Resistance 12%		
Max Gear per CAT Chart		
Max MPH 8.6 Speed Empty		
Max Weight Ibs of Empty 745 74,100.00		
Tons Empty 37.05		
20lbs/Ton Rolling weight Empty 2		
Rolling Resitance (1% per 20lbs/Ton) Empty 2%		
Average Stope Empty 8% Total Resistance Empty 10%		
Total Resistance Empty 107 Max Gear per CAT Chart Empty N/A		
Max MPH Empty N/A		
	A control of the cont	
Dither Notes		

\$21,093.84

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION KRRP - Iron Gate Project Description Quantity
Daily Production 19,000.00 LBS 9,500.00 LBS per 10 hour shift : Mihaela Tomulescu Work Days 2.0 Days \$3.20 per LBS Estimator LBS per 10925 Total Cost Unit Price Per LBS \$3.10 Probable Low Cost Parameter \$51,624 **Total Cost** \$60,734 Probable High Cost Parameter 7600 \$72,881 \$4.38

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$53.10	incl. in rate	incl. in rate	\$1,061.94
Laborer	Active	4.00	2.0	10	80.00	L	\$50.38	incl. in rate	incl. in rate	\$4,030.40
Steelworker	Active	2.00	2.0	10	40.00	L	\$72.07	incl. in rate	incl. in rate	\$2,882.88
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.91	incl. in rate	incl. in rate	\$1,458.16
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$75.25	incl. in rate	incl. in rate	\$1,505.02
Hydraulic Crane (80tn)	Active	1.00	2.0	10	20.00	E	\$190.46	incl. in rate	incl. in rate	\$3,809.20
Loader, FE Rubber Tire (3.5cy)	Active	1.00	2.0	10	20.00	E	\$64.23	incl. in rate	incl. in rate	\$1,284.60
Forklift, Rough Terrain (9,000 lb capacity)	Active	1.00	2.0	10	20.00	Е	\$54.70	incl. in rate	incl. in rate	\$1,094.00
	•		•	Labor Hours	180		•	•	TOTAL LABOR	\$10,938.40
				Equipment Hours	60			TO	TAL EQUIPMENT	\$6,187.80

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,093.84	\$1,093.84
Skid Allowance	1.00	AL	1.00	1.00	\$20,000.00	\$20,000.00

Company Price Hauling Disposal Cost 40 Miles to Yreka 1.00 Loads 20 tons a load \$400.00 Cutting, steel, to 1/4" thick, by hand, incl prep, torch	SUBCONTRACT COSTS											
Cutting, steel, to 1/4" thick, by hand, incl prep, torch	Description	Quantity	Units					Contract or Quote Amount				
Cutting, steel, to 1/4" thick, by hand, incl prep, torch cutting & grinding, excl staging (assumed qty) 1,000.00 If 1.000 1,000.00 \$20.00	Disposal Cost 40 Miles to Yreka	1.00	Loads	20 tons a load	\$400.00			\$400.00				
		1,000.00	If	1.000	1,000.00	\$20.00		\$20,000.00				

SUMMARY OF COSTS									
Labor Cost	\$10,938.40 Labor Burden	@ 49.7%	\$0.00		\$10,938.40				
Material Cost	\$21,093.84 Material Tax @	2 7.75%	\$1,634.77		\$22,728.61				
Equipment Cost	\$6,187.80 Equipment Tax	x @ 7.75%	\$479.55		\$6,667.35				
Subcontractors	\$20,400.00				\$20,400.00				
DIRECT COST SUBTOTALS	\$58,620		\$2,114	DIRECT COST SUBTOTALS	\$60,734				
Additional Pay Item Notes :									

Turning of the actuating bolts and nuts - accomplished by steelworker / welder crew using only standard hand tools - spreads the yoke halves until they are fully separated, allowing the head to be swung open on its hinge. Contact surfaces of the clamping yokes, head and hub are tapered and when the head is closed and the yoke bolts are tightened, the head and hub are wedged together, compressing the 0-ring and effecting a leakproof seal. Removing flanges is cumbersome and time consuming because of the tunnel work and the rusted fasteners. There is need to tug or hammer at bulky flanges or to struggle with bulky lugs and threads. Using loader, crane to load the flange and associated metal work in the truck. Included 5 of pipe spool. Expecting flange to be removed with a combination of a forkfilt and skids.

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate : D03 Description Remove 18" plug valve and 7' of 18" drainage pipe 2,620.00 LBS Group Quantity Daily Production Work Days 10 hour shift 3,275.00 LBS per Project # Estimator : Mihaela Tomulescu Probable Low Cost Parameter Days LBS per 3766.25 **Total Cost** Unit Price Per LBS 0.8 \$2.18 per LBS \$4,852 \$2.12 **Total Cost** \$5,708 Probable High Cost Parameter 2620 \$6,850 \$2.99

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Truck Driver (heavy)	Active	1.00	0.8	10	8.00	L	\$63.35	incl. in rate	incl. in rate	\$506.79
Trencher	Active	2.00	0.8	10	16.00	E	\$4.07	incl. in rate	incl. in rate	\$65.12
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.0
Hydraulic Crane (17tn)	Active	1.00	0.8	10	8.00	E	\$81.52	incl. in rate	incl. in rate	\$652.10
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.8	10	8.00	E	\$70.35	incl. in rate	incl. in rate	\$562.80
Hydraulic Excavator (1.5cy)	Active	1.00	0.8	10	8.00	E	\$141.92	incl. in rate	incl. in rate	\$1,135.36
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Steelworker	Active	2.00	0.8	10	16.00	L	\$72.07	incl. in rate	incl. in rate	\$1,153.1

Labor Hours	40	TOTAL LABOR	\$2,845.22
Equipment Hours	40	TOTAL EQUIPMENT	\$2,415.44

Description	Item	Order	Conversion	Order	Order	Material
·	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, e	1.00	LS	1.000	1.00	\$241.54	\$241.54

TOTAL MATERIAL \$241.54

\$0.00

TOTAL SUBCONTRACTS

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount

SUMMARY OF COSTS \$2,845.22 Labor Burden @ \$0.00 \$2,845.22 Material Cost Equipment Cost Material Tax @ \$18.72 \$260.26 \$241.54 \$2,415.44 Equipment Tax @ \$187.20 \$2,602.64 Subcontractors \$0.00 DIRECT COST SUBTOTALS \$5,502 DIRECT COST SUBTOTALS \$5,708

Additional Pay Item Notes :

This is tunnel work. Assumed 7" ductile iron 18" pipe at 78.5LBS /LF= 550 LBS, weight of the valve assumed API 600 gate valve for 18" is 2070 LBS.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.013.1	Project	: KRRP - Iron Gate			
Description	:	Installation of 15.5'w X 16.5't Roller Gate and Gate Structure	Group	: D02			
Quantity	:	1.00 LS					
Daily Production	:	0.03 LS per 20 hour shift	Project #	: 4			
Work Days	:	40.0 Days	Estimator	: Mihaela Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$3,791,299.91 per LS	Probable Low	Cost Parameter	0.0275	\$3,412,170	\$3,898,063
Total Cost		\$2.704.200	Droboble High	Cost Parameter	0.0225	\$4 170 430	\$4.764.200

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	40.0	20	800.00	L	\$53.10	incl. in rate	incl. in rate	\$42,477.60
Laborer	Active	3.00	40.0	20	2,400.00	L	\$50.38	incl. in rate	incl. in rate	\$120,912.00
Carpenter Foreman (out)	Active	1.00	40.0	20	800.00	L	\$51.04	incl. in rate	incl. in rate	\$40,832.00
Carpenters	Active	4.00	40.0	20	3,200.00	L	\$79.86	incl. in rate	incl. in rate	\$255,552.00
Equipment Operator (crane)	Active	1.00	40.0	20	800.00	L	\$75.25	incl. in rate	incl. in rate	\$60,200.80
Steelworker	Active	2.00	40.0	20	1,600.00	L	\$72.07	incl. in rate	incl. in rate	\$115,315.20
Electrician	Active	1.00	40.0	20	800.00	L	\$49.75	incl. in rate	incl. in rate	\$39,802.40
Crawler Crane (270tn)	Active	1.00	40.0	20	800.00	E	\$399.50	incl. in rate	incl. in rate	\$319,600.00
Conc Pump (small)	Active	1.00	3.0	20	60.00	E	\$121.58	incl. in rate	incl. in rate	\$7,294.80
Equipment Operator (light)	Active	1.00	3.0	20	60.00	L	\$71.39	incl. in rate	incl. in rate	\$4,283.40

Labor Hours	10460	TOTAL LABOR	\$679,375.40
Equipment Hours	860	TOTAL EQUIPMENT	\$326,894.80

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Furnish one-15.5w'x16.5t' roller gate and Controler						
	1.00	LS	1.000	1.00	2,007,691.21	\$2,007,691.21
	1.00		1.000	1.00	2,007,001.21	Ψ <u>Ε</u> ,007,001.Ε1
Welding structural steel in field, cost per welder, 8# per ton,						
1/8" dia, type 6011, incl 1 operating engineer	55.00	ton	1.000	55.00	\$250.00	\$13,750.00
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$67,937.54	\$67,937.54
Misc Mats/ Thinmble/ Slides Allowance 10% of Gate	0.10	%	1.000	0.10	\$2,331,511.00	\$233,151.10
Concrete Material, Form Material, and Reinforcement						
Allowance	0.25	%	1.000	0.25	\$679,375.40	\$169,843.85
Rock Anchor Dowel Allowance for Tunnel and Bulkhead	0.10	%	1.000	0.10	\$679,375.40	\$67,937.54
						\$0.00
						TOTAL MATERIAL
						TOTAL MATERIAL \$2,560,311.24

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Welding inspection technician, per day	2.00	EA	1.000	2.00	\$480.00	\$960.00

					TOTAL SUBCONTRACTS	\$960.00
SUMMARY OF COSTS						
Labor Cost	\$679,375.40 Lab	bor Burden @	49.7%	\$0.00		\$679,375.40
Material Cost	\$2,560,311.24 Ma	aterial Tax @	7.75%	\$198,424.12		\$2,758,735.36
Equipment Cost	\$326,894.80 Equ	uipment Tax @	7.75%	\$25,334.35		\$352,229.15
Subcontractors	\$960.00					\$960.00
DIRECT COST SUBTOTALS	\$3,567,541	•		\$223,758	DIRECT COST SUBTOTALS	\$3,791,300

This item is to build the diversion roller gate structure for the Iron Gate reservoir draw down. It is expected that the fish bays will be backfilled and a crane will be placed near the existing diversion tunnel down stream end to support construction of the roller gate structure. Material items have been accounted for using allowance amounts. Concrete pump is expected to be used 3 days to accommodate pouring concrete

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.013.2	Project : KRRP - Iron Gate			
Description	:	Remove Existing Sluice Gate and Grating by divers	Group : D02			
Quantity	:	110,000.00 LBS				
Daily Production	:	30,000.00 LBS per 20 hour shift	Project # : 4			
Work Days	:	3.7 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$2.68 per LBS	Probable Low Cost Parameter	33000	\$265,596	\$3
Total Cost	:	\$295,107	Probable High Cost Parameter	27000	\$324.618	\$3

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.7	20	74.00	L	\$53.10	incl. in rate	incl. in rate	\$3,929.18
Laborer	Active	3.00	3.7	20	222.00	L	\$50.38	incl. in rate	incl. in rate	\$11,184.36
Equipment Operator (crane)	Active	2.00	3.7	20	148.00	L	\$75.25	incl. in rate	incl. in rate	\$11,137.15
Diver, Wet	Active	9.00	3.7	20	666.00	L	\$137.03	incl. in rate	incl. in rate	\$91,259.98
Diver, Tender	Active	9.00	3.7	20	666.00	L	\$87.14	incl. in rate	incl. in rate	\$58,036.57
Barge Operator	Active	2.00	3.7	20	148.00	L	\$44.33	incl. in rate	incl. in rate	\$6,560.84
Barge, Deck Engineer, Winch Operator	Active	2.00	3.7	20	148.00	L	\$70.69	incl. in rate	incl. in rate	\$10,461.53
Barge, Sectional, 40'x10', includes ramp	Active	2.00	3.7	20	148.00	E	\$16.48	incl. in rate	incl. in rate	\$2,439.04
Crawler Crane (270tn)	Active	2.00	3.7	20	148.00	E	\$399.50	incl. in rate	incl. in rate	\$59,126.00
Hydraulic Crane (50tn)	Active	1.00	3.7	20	74.00	E	\$134.32	incl. in rate	incl. in rate	\$9,939.68

İ	Labor Hours	2072	TOTAL LABOR	\$192,569.61
ı	Equipment Hours	370	TOTAL EQUIPMENT	\$71,504.72

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Welding structural steel in field, cost per welder, 8# per						
ton, 1/8" dia, type 6011, incl 1 operating engineer	1.00	ton	1.000	1.00	\$250.00	\$250.00
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$19,256.96	\$19,256.96

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)						
	5.50	ton	1.000	5.50	\$595.00	\$3,272.50
Hauling Disposal Cost 40 Mile to Yreka	3.00	Loads	20 tons a load	\$400.00		\$1,200.00
					TOTAL SUBCONTRACTS	\$4,472.50

SUMMARY OF COSTS					
Labor Cost	\$192,569.61 Labor Burden @	49.7%	\$0.00		\$192,569.61
Material Cost	\$19,506.96 Material Tax @	7.75%	\$1,511.79		\$21,018.75
Equipment Cost	\$71,504.72 Equipment Tax @	7.75%	\$5,541.62		\$77,046.34
Subcontractors	\$4,472.50	·			\$4,472.50
DIRECT COST SUBTOTALS	\$288,054		\$7,053	DIRECT COST SUBTOTALS	\$295,107
Additional Pay Item Notes :					
This estimate is to remove the gratin	og and gates on the existing diversion tunnel. Due to	the depth of the and distance to the gate it is expe	cted that the dive	ers will only be able to spend 20 mins at the location of the grates or the	

This estimate is to remove the grating and gates on the existing diversion tunnel. Due to the depth of the and distance to the gate it is expected that the divers will only be able to spend 20 mins at the location of the grates or the gates. Extra divers have been added to account for the circulation due to the depth restriction. it is expected that there will be a total of 3 divers working on the removal at each time. A total of 9 divers will be need to ensure coverage for the demolition operation. This accounts for 3 divers needing to rotate every 20 mins.

TOTAL LABOR

\$39,943.86

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.013.3	Project	: KRRP - Iron Gate			
Description	:	Remove New Roller Gate Structure	Group	: D02			
Quantity	:	300.00 CY					
Daily Production	:	100.00 CY per 20 hour shift	Project #	: 4			
Work Days	:	3.0 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$424.46 per CY	Probable Low C	ost Parameter	110	\$114,605	\$436
Total Cook		¢427.220	Droboble High (Cont Doromotor	00	6440.072	6522

CREW COSTS	A ation	# !	Davis	Hours	Total	L/E	Harrie	Hele and	Develop	Labas / Environant
Description	Active Idle	# in crew	Days Worked	/day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.0	20	60.00	L	\$53.10	incl. in rate	incl. in rate	\$3,185.82
Equipment Operator (medium)	Active	2.00	3.0	20	120.00	L	\$72.91	incl. in rate	incl. in rate	\$8,748.96
Equipment Operator (crane)	Active	1.00	3.0	20	60.00	L	\$75.25	incl. in rate	incl. in rate	\$4,515.06
Crawler Crane (270tn)	Active	1.00	3.0	20	60.00	E	\$399.50	incl. in rate	incl. in rate	\$23,970.00
Laborer	Active	4.00	3.0	20	240.00	L	\$50.38	incl. in rate	incl. in rate	\$12,091.20
Truck Driver (heavy)	Active	3.00	3.0	20	180.00	L	\$63.35	incl. in rate	incl. in rate	\$11,402.82
Hydraulic Excavator (5.0cy)	Active	2.00	3.0	20	120.00	E	\$274.63	incl. in rate	incl. in rate	\$32,955.60
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	2.00	3.0	20	120.00	E	\$62.72	incl. in rate	incl. in rate	\$7,526.40
Truck, On-Highway Dump (6x4, 12cy)	Active	3.00	3.0	20	180.00	E	\$70.35	incl. in rate	incl. in rate	\$12,663.00

-		
Order	Order Price	Material Cost
Quantity	Filce	Cost
1.00	\$3,994.39	\$3,994.39
	Quantity	Quantity Price

Labor Hours

TOTAL MATERIAL \$3,994.39

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$39,943.86 Labor Burden @	49.7%	\$0.00	
Material Cost	\$3,994.39 Material Tax @	7.75%	\$309.56	
Equipment Cost	\$77,115.00 Equipment Tax @	7.75%	\$5,976.41	
Subcontractors	\$0.00			
IRECT COST SUBTOTALS	\$121,053		\$6,286	DIRECT COST SUBTOTALS
Additional Pay Item Notes :				

Crane will be used to remove gate material as it because free from gate structure. Estimated 300 CY of concrete to be removed and the production reflected are adjusted to account for other items that need to be removed in regards to the gate. It is expected access for equipment will be where the existing fish bays are. This item is double shifted with two 10 hour shifts due to the California in water work restrictions.

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate Remove Concrete in Observation Platform, Crest Wall and Wall Extension Description 780.00 cy 150.00 cy per 5.2 Days Group : D07 Quantity
Daily Production Project # : 4
Estimator : Eric Jones
Probable Low Cost Parameter Total Cost \$74,469 Unit Price Per cy \$109.07 Work Days Unit Price cy per 165 \$106.08 per cy 135 \$91,017 \$133.31 Total Cost \$82,743 Probable High Cost Parameter

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	5.2	10	52.00	L	\$53.10	incl. in rate	incl. in rate	\$2,761.04
Laborer	Active	3.00	5.2	10	156.00	L	\$50.38	incl. in rate	incl. in rate	\$7,859.28
Equipment Operator (medium)	Active	4.00	5.2	10	208.00	L	\$72.91	incl. in rate	incl. in rate	\$15,164.86
Truck Driver (heavy)	Active	1.00	2.9	10	29.25	L	\$63.35	incl. in rate	incl. in rate	\$1,852.96
Hydraulic Excavator (2.5cy)	Active	1.00	5.2	10	52.00	E	\$203.63	incl. in rate	incl. in rate	\$10,588.76
Hydraulic Excavator (5.0cy)	Active	1.00	5.2	10	52.00	E	\$274.63	incl. in rate	incl. in rate	\$14,280.76
Loader, FE Rubber Tire (3.5cy)	Active	1.00	5.2	10	52.00	E	\$64.23	incl. in rate	incl. in rate	\$3,339.96
Hydraulic Thumbs/Shear Attachment	Active	1.00	2.9	10	29.25	E	\$16.39	incl. in rate	incl. in rate	\$479.41
Air Tool, Chipping Hammer	Active	2.00	5.2	10	104.00	E	\$1.64	incl. in rate	incl. in rate	\$170.46
Air Compressor 600 cfm	Active	1.00	5.2	10	52.00	E	\$21.74	incl. in rate	incl. in rate	\$1,130.42
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	5.2	10	52.00	E	\$89.29	incl. in rate	incl. in rate	\$4,643.08
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.9	10	29.25	E	\$174.47	incl. in rate	incl. in rate	\$5,103.25
				Labor Hours	44!	5			TOTAL LABOR	\$27,638.15
			Equ	uipment Hours	423	3			TOTAL EQUIPMENT	\$39,736.10
				•		-				

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$1,381.91		\$1,381.91
						TOTAL MATERIAL	\$1,381.91

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Concrete Saw Cutting	2 E/	A	Cost per Mob	\$5,000.00	\$10,000.0
auling Disposal Cost 40 Mile to Yreka	2.00	Loads	90lbs per CY	\$400.00	\$800.

SUMMARY OF COSTS				
Labor Cost	\$27,638.15 Labor Burden @	0.0% \$0.00		\$27,638.15
Material Cost	\$1,381.91 Material Tax @	7.75% \$107.10		\$1,489.01
Equipment Cost	\$39,736.10 Equipment Tax @	7.75% \$3,079.55		\$42,815.65
Subcontractors	\$10,800.00			\$10,800.00
DIRECT COST SUBTOTALS	\$79,556	\$3,187	DIRECT COST SUBTOTALS	\$82,743
Additional Pay Item Notes :				

h Cost Factors			Low Cost Factors	
d Weather s Price Increase	0% 5%		No Bad Weather Gas Price Decrease	
foreseen Contaminated Mats/ Access Issues	5%		No Unforeseen Contaminated Mats/ Access Issues	
al	10%		Total	
destina Destina		Overall Production	¬	
fuction Per Hour Hours 15	8	Overall Production 120.	00	
	10	150.	00	
I Notes		Excavator Loading Production per shift		
		CY per Hour		42.67
ell Factor		CY Bucket Size		2.50
CCY		Buckets Per Hour		17
I Vehicle 60% Capacity (2 tons per CY)		of Excavators		1.00
Haul Vehicles		CY per Hour (2.5 CY Bucket)		42.6666667
d Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift		95
p Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		Efficient Compared to Ideal Production		45%
I Speed (Loaded MPH)		nefficiencies Compared to Ideal Production		55%
urn Speed (Unloaded MPH) I Distance (Miles)	20			
	1			
t Length (Hours)	10			
e Time		Breaker Production		
d Time (Load Time Minutes / 60mins)		Hydraulic Hammer CY per Hour		15
Time (Haul Distance / Haul Speed)		of Hammers		1.00
np Time (Dump Time Minutes / 60 Mins)		CY per Hour		42.66666667
Jrn Time (Haul Distance / Return Speed) rs Per Cycle	0.05	CY per Hour Back Check IZCY per HR per 8hr shift (Ideal prod)		15 32
ican en Gyude Ciency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		Efficient Compared to Ideal Production		45%
ual Hours Per Cycle (Hours per Cycle / Efficency Factor)		nefficiencies Compared to Ideal Production		55%
nber of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Il Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	65 29.25			
dS Per Hour (Number of Cycles / Total Number of Haul Hours)	29.25			
mber of Haul Days	2.925			
ned Loaded				
Max Weight Ibs of loaded 745	164,500.00			
Tons 20lbs/Ton Rolling weigth	82 4			
Rolling Resitance (1% for each 20lbs/Ton)	4%			
Average Slope	2%			
Total Resistance Max Gear per CAT Chart	6% 4			
Max MPH	8.8			
ed Empty	0			
Max Weight Ibs of Empty 745 Tons Empty	74,100.00 37			
20lbs/Ton Rolling weight Empty Rolling Resitance (1% per 20lbs/Ton) Empty	2 2%			
Average Slope Empty	2%			
Total Resistance Empty	0%			
Max Gear per CAT Chart Empty N/A Max MPH Empty N/A				
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er Notes				
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PAY IT	EM INFORMATION								
	PAY ITEM NUMBER	:	4.015		Project	: KRRP - Iron Gate			
	Description	:	Remove Concrete in Diversion	Tunnel Intake Structure	Group	: D07			
	Quantity	:	715.00 cy						
	Daily Production	:	150.00 cy per	10 hour shift	Project #	: 4			
	Work Days	: -	4.8 Days		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
	Unit Price	:	\$102.15 per cy		Probable Low	Cost Parameter	165	\$65,734	\$105.03
	Total Cost	:	\$73,038		Probable High	Cost Parameter	135	\$80,342	\$128.37

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.8	10	48.00	L	\$53.10	incl. in rate	incl. in rate	\$2,548.66
Laborer	Active	3.00	4.8	10	144.00	L	\$50.38	incl. in rate	incl. in rate	\$7,254.72
Equipment Operator (medium)	Active	4.00	4.8	10	192.00	L	\$72.91	incl. in rate	incl. in rate	\$13,998.34
Truck Driver (heavy)	Active	1.00	2.9	10	28.80	L	\$63.35	incl. in rate	incl. in rate	\$1,824.45
Hydraulic Excavator (2.5cy)	Active	1.00	4.8	10	48.00	E	\$203.63	incl. in rate	incl. in rate	\$9,774.24
Hydraulic Excavator (5.0cy)	Active	1.00	4.8	10	48.00	E	\$274.63	incl. in rate	incl. in rate	\$13,182.24
Loader, FE Rubber Tire (3.5cy)	Active	1.00	4.8	10	48.00	E	\$64.23	incl. in rate	incl. in rate	\$3,083.04
Hydraulic Thumbs/Shear Attachment	Active	1.00	4.8	10	48.00	E	\$16.39	incl. in rate	incl. in rate	\$786.72
Air Tool, Chipping Hammer	Active	2.00	4.8	10	96.00	E	\$1.64	incl. in rate	incl. in rate	\$157.35
Air Compressor 600 cfm	Active	1.00	4.8	10	48.00	E	\$21.74	incl. in rate	incl. in rate	\$1,043.47
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	4.8	10	48.00	E	\$89.29	incl. in rate	incl. in rate	\$4,285.92
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.9	10	28.80	E	\$174.47	incl. in rate	incl. in rate	\$5,024.74
				Labor Hours	413				TOTAL LABOR	\$25,626.16
			Equ	ipment Hours	413				TOTAL EQUIPMENT	\$37,337.71

Description	Item	Order	Conversion	Order	Order	Ma	terial
	Quantity	Unit	Factor / Waste	Quantity	Price	С	ost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$1,281.31		\$1,281.
						OTAL MATERIAL	\$

act or Quote	Contract		Unit	Notes /	Units	Quantity	Description
Amount	Ame		Price	Company			
\$5,000.00			\$5,000.00	Cost per Mob	EA	1	Concrete Saw Cutting
\$800.00		\$400.00		90lbs per CY	Loads	2.00	Hauling Disposal Cost 40 Mile to Yreka
_	TOTAL SUBCONTRACTS						

\$25,626.16 Labor Bur	en @ 0.0% \$0.00	Included in hourly labor rate.	\$25,626.16
\$1,281.31 Material T	(@ 7.75% \$99.30		\$1,380.61
\$37,337.71 Equipmen	Tax @ 7.75% \$2,893.67		\$40,231.38
\$5,800.00			\$5,800.00
\$70,045	\$2,993	DIRECT COST SUBTOTALS	\$73,038
			_
	\$1,281.31 Material Tax \$37,337.71 Equipment \$5,800.00	\$1,281.31 Material Tax @ 7,75% \$99.30 \$37,337.71 Equipment Tax @ 7,75% \$2,893.67	\$1,281.31 Material Tax @ 7.75% \$99.30 \$37,337.71 Equipment Tax @ 7.75% \$2,893.67 \$5,800.00

		Diversion Tunnel Intake Structure Details	
		Petalis	
h Cost Factors			Low Cost Factors
d Weather	0%		No Bad Weather
s Price Increase	5%		Gas Price Decrease
foreseen Contaminated Mats/ Access Issues	5%		No Unforeseen Contaminated Mats/ Access Issues
al	10%	·	Total
duction Per Hour Hours		Overall Production]
15	8	120.00	
	10	150.00	
ul Notes		Excavator Loading Production per shift	
		CY per Hour	40.00
ell Factor k CY		CY Bucket Size	2.50
וא כץ ul Vehicle 60% Capacity (2 tons per CY)		Buckets Per Hour # of Excavators	16 1.00
f Haul Vehicles		CY per Hour (2.5 CY Bucket)	40
ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift	95
mp Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		Efficient Compared to Ideal Production	42%
Il Speed (Loaded MPH)		Inefficiencies Compared to Ideal Production	58%
turn Speed (Unloaded MPH)	20	Toda Compared to talear i roudelloir	36 /6
ul Distance (Miles)	20		
ft Length (Hours)	10		
ce Time		Breaker Production	
ad Time (Load Time Minutes / 60mins)	0.15	Hydraulic Hammer CY per Hour	15
Il Time (Haul Distance / Haul Speed)		# of Hammers	1.00
mp Time (Dump Time Minutes / 60 Mins)		CY per Hour	40
turn Time (Haul Distance / Return Speed)			
urs Per Cycle		CY per Hour Back Check 32CY per HR per 8hr shift (Ideal prod)	15 32
iciency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		Efficient Compared to Ideal Production	42%
tual Hours Per Cycle (Hours per Cycle / Efficcency Factor)		Inefficiencies Compared to Ideal Production	58%
mber of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) al Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	60 28.8		
ads Per Hour (Number of Cycles / Total Number of Haul Hours)	20.0		
mber of Haul Days	2.88		
eed Loaded			
Max Weight lbs of loaded 745	164,500.00		
Tons 20lbs/Ton Rolling weigth	82 4		
Rolling Resitance (1% for each 20lbs/Ton)	4%		
Average Slope	2%		
Total Resistance Max Gear per CAT Chart	6% 4		
Max Geal per CAT Chart	8.8		
eed Empty	0		
Max Weight lbs of Empty 745 Tons Empty	74,100.00 37		
20lbs/Ton Rolling weight Empty	2 2%		
Rolling Resitance (1% per 20lbs/Ton) Empty Average Slope Empty	2%		
Total Resistance Empty	0%		
Max Gear per CAT Chart Empty	N/A		
Max MPH Empty	N/A	·	
er Notes			
ner Notes			

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.016	Project	: KRRP - Iron Gate			
Description	:	Remove Concrete in Diversion Tunnel Gate Tower	Group	: D07			
Quantity	:	650.00 CY					
Daily Production	:	200.00 CY per 10 hour shift	Project #	: 4			
Work Days	:	3.3 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$74.98 per CY	Probable Low (Cost Parameter	230	\$41,428	\$73
Total Cost	:	\$48,738	Probable High	Cost Parameter	170	\$56.049	\$99

Unit Price :	\$74.98	per CY	, .		Probable Low		oter	230	\$41,428	\$73
Total Cost					Probable High			170	\$56,049	\$99
										•
REW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.3	10	33.00	L	\$53.10	incl. in rate	incl. in rate	\$1,75
Equipment Operator (medium)	Active	3.00	3.3	10	99.00	L	\$72.91	incl. in rate	incl. in rate	\$7,2
Steelworker	Active	3.00	3.3	10	99.00	L	\$72.07	incl. in rate	incl. in rate	\$7,13
Electrician	Active	1.00	3.3	10	33.00	L	\$49.75	incl. in rate	incl. in rate	\$1,64
Truck Driver (heavy)	Active	1.00	3.3	10	33.00	L	\$63.35	incl. in rate	incl. in rate	\$2,09
Vibratory Hammer & Extractor	Active	1.00	3.3	10	33.00	E	\$94.34	incl. in rate	incl. in rate	\$3,11
Hydraulic Excavator (6.0cy)	Active	1.00	3.3	10	33.00	E	\$322.48	incl. in rate	incl. in rate	\$10,64
Loader, FE Rubber Tire (8.6cy)	Active	1.00	3.3	10	33.00	E	\$221.50	incl. in rate	incl. in rate	\$7,30
AT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	3.3	10	33.00	E	\$174.47	incl. in rate	incl. in rate	\$5,7
				Labor Hours	297				TOTAL LABOR	\$19,8
				Equipment Hours	132			TO:	TAL EQUIPMENT	\$26,82
				Equipment frout	.02				THE EQUI III III	\$25 ,51
ATERIAL COSTS				Conversion	Order		Order			Material
ATERIAL COSTS Description	Item	Order		001110101011						

							TOTAL MATERIAL	\$0.00
SUBCONTRACT COSTS								
Description	Quantity	Units	Notes /			Unit		Contract or Quote
			Company			Price		Amount
							_	
							TOTAL SUBCONTRACTS	\$0.00
							•	
SUMMARY OF COSTS								
Labor Cost	\$19,837,59	Labor Burden @		49.7%	\$0.00	•		\$19,837.59
Material Cost		Material Tax @		7.75%	\$0.00			\$0.00

 Material Cost
 \$0.00 | Material Tax @ | 7.75% | \$0.00 |
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TOTAL SUBCONTRACTS

\$257.09

\$1,384.00

PAY ITEM COST DETAIL WORKSHEET

CREW COSTS

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Iron Gate Description : D10 Quantity
Daily Production 12,500.00 LBS per 10 hour shift Project # 1.0 Days \$0.72 per LBS Work Days Unit Price Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 14375 **Total Cost** Unit Price Per LBS \$0.70 \$7,960 Probable High Cost Parameter **Total Cost** \$9,365 10625 \$10,770 \$0.95

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.0	10	10.40	L	\$53.10	incl. in rate	incl. in rate	\$552.21
Electrician	Active	1.00	1.0	10	10.40	L	\$49.75	incl. in rate	incl. in rate	\$517.43
Hydraulic Crane (50tn)	Active	1.00	1.0	10	10.40	E	\$134.32	incl. in rate	incl. in rate	\$1,396.93
Equipment Operator (crane)	Active	1.00	1.0	10	10.40	L	\$75.25	incl. in rate	incl. in rate	\$782.61
Vibratory Hammer & Extractor	Active	1.00	1.0	10	10.40	E	\$94.34	incl. in rate	incl. in rate	\$981.14
Laborer	Active	2.00	1.0	10	20.80	L	\$50.38	incl. in rate	incl. in rate	\$1,047.90
Equipment Operator (light)	Active	1.00	1.0	10	10.40	L	\$71.39	incl. in rate	incl. in rate	\$742.46
Steelworker	Active	2.00	1.0	10	20.80	L	\$72.07	incl. in rate	incl. in rate	\$1,499.10
				Labor Hours	83.2			1	OTAL LABOR	\$5,141.71
				Equipment Hours	20.8			TOTA	L EQUIPMENT	\$2,378.06

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$257.09	\$257.09

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent aerial lift, articulating boom, to 80' high, 500 lb. capacity, diesel - Rent per day (RS Means 01543340)	1.00	days	1.000	1.00	\$584.00	\$584.00
Hauling Disposal Cost 40 Mile to Yreka	2.00	Loads		\$400.00		\$800.00

SUMMARY OF COSTS				
Labor Cost	\$5,141.71 Labor Burden @	49.7% \$0.00		\$5,141
Material Cost	\$257.09 Material Tax @	7.75% \$19.92		\$277
Equipment Cost	\$2,378.06 Equipment Tax @	7.75% \$184.30		\$2,562
Subcontractors	\$1,384.00			\$1,384.
DIRECT COST SUBTOTALS	\$9,161	\$204	DIRECT COST SUBTOTALS	\$9,3
Additional Day Itam Natas .				

The bridge steel grid, excess steel members and similar materials shall be removed from each span prior to removing the main supporting beams, girders or trusses over land. Assumed crew is formed of 1 Forman, 1 Electrician (temporary power for tools), 2 steelworkers to cut steel in the articulated boom and 2 Laborers (Load, Haul, help with the crane ropes, etc).

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Iron Gate Description
Quantity
Daily Production
Work Days
Unit Price Group : D07 39.00 CY 62.50 CY per 0.6 Days \$132.89 per CY 10 hour shift Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter CY per 71.875 Total Cost \$4,405 Unit Price Per CY \$129 Probable High Cost Parameter \$5,960 **Total Cost** \$5,183 53.125 \$175

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$53.10	incl. in rate	incl. in rate	\$318.58
Laborer	Active	3.00	0.6	10	18.00	L	\$50.38	incl. in rate	incl. in rate	\$906.84
Equipment Operator (medium)	Active	1.00	0.6	10	6.00	L	\$72.91	incl. in rate	incl. in rate	\$437.45
Truck Driver (heavy)	Active	1.00	0.6	10	6.00	L	\$63.35	incl. in rate	incl. in rate	\$380.09
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	0.6	10	6.00	E	\$36.58	incl. in rate	incl. in rate	\$219.48
Hydraulic Excavator (5.0cy)	Active	1.00	0.6	10	6.00	E	\$274.63	incl. in rate	incl. in rate	\$1,647.78
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	0.6	10	6.00	E	\$174.47	incl. in rate	incl. in rate	\$1,046.82
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	0.6	10	6.00	E	\$174.47	incl. in rate	incl. in rate	\$1,046.82
				Labor Hours	36				TOTAL LABOR	\$2,042.96
				Equipment Hours	18			TOT	AL EQUIPMENT	\$2,914.08

Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

			TOTAL SUBCONTRACTS	\$0.
UMMARY OF COSTS				
abor Cost	\$2,042.96 Labor Burden @	49.7% \$0.00		\$2,04
laterial Cost	\$0.00 Material Tax @	7.75% \$0.00		\$
quipment Cost	\$2,914.08 Equipment Tax @	7.75% \$225.84		\$3,13
ubcontractors	\$0.00			\$
ECT COST SUBTOTALS	\$4,957	\$226	DIRECT COST SUBTOTALS	\$5
litional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.019	Project	: KRRP - Iron Gate			
Description	:	Place Concrete Plugs for Diversion Tunnel	Group	: D02			
Quantity	:	86.00 CY					
Daily Production	:	3.00 CY per 10 hour shift	Project #	: 4			
Work Days	:	28.7 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$2,769.61 per CY	Probable Low	Cost Parameter	3.3	\$214,368	\$2,848
Total Cost	:	\$238.186	Probable High	Cost Parameter	2.7	\$262,005	\$3.480

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Carpenter Foreman (out)	Active	1.00	28.7	10	287.00	L	\$51.04	incl. in rate	incl. in rate	\$14,648.48
Carpenters	Active	2.00	28.7	10	574.00	L	\$79.86	incl. in rate	incl. in rate	\$45,839.64
Carpenters, Journeyman	Active	2.00	28.7	10	574.00	L	\$71.91	incl. in rate	incl. in rate	\$41,274.62
Equipment Operator (crane)	Active	2.00	14.4	10	287.00	L	\$75.25	incl. in rate	incl. in rate	\$21,597.04
Equipment Operator (light)	Active	2.00	2.0	10	40.00	L	\$71.39	incl. in rate	incl. in rate	\$2,855.60
Hydraulic Crane (80tn)	Active	1.00	14.4	10	143.50	Е	\$190.46	incl. in rate	incl. in rate	\$27,331.01
Conc Pump (small)	Active	1.00	2.0	10	20.00	E	\$121.58	incl. in rate	incl. in rate	\$2,431.60
Steelworker	Active	2.00	5.0	10	100.00	L	\$72.07	incl. in rate	incl. in rate	\$7,207.20
Welder	Active	1.00	28.7	10	287.00	Е	\$7.84	incl. in rate	incl. in rate	\$2,249.36

Labor Hours	1862	TOTAL LABOR	\$133,422.58
Equipment Hours	450.5	TOTAL EQUIPMENT	\$32,011.97

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Concrete	86.00	CY	1.100	94.60	\$159.23		\$15,063.16
Reinforcement (At 90lbs per CY)	3.87	Ton	1.100	4.26	\$1,000.00		\$4,257.00
FormWork Allowance (20% of Labor)	1.00	LS	1.100	1.10	\$26,684.52		\$29,352.97
Consumables (10% of Equip & Labor)	1.00	LS	1.000	1.00	\$16,543.45		\$16,543.45
						TOTAL MATERIAL	\$65.216.59

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00
-					-	

SUMMARY OF COSTS			
Labor Cost	\$133,422.58 Labor Burden @	49.7%	\$0.00
Material Cost	\$65,216.58 Material Tax @	7.75%	\$5,054.28
Equipment Cost	\$32,011.97 Equipment Tax @	7.75%	\$2,480.93
Subcontractors	\$0.00		
DIRECT COST SUBTOTALS	\$230,651		\$7,535
Additional Day Itam Natas			

The 2 Plugs are expected to be formed in two sections. The inner section will be formed and braced off of the tunnel walls. After the inner form (set form) is installed the face form will be built similar to the set form by bracing off of the tunnel walls. To ensure consolidation a high stump small aggregate mix will be used and concrete vibrators will have access through the Bat opening block out at the top. One 5 man crew will be used to construct the formwork, place the concrete, and strip the form work. One crew of 3 rodbusters will be used to tie and brace reinforcement. Expected duration is 5 days to form the plug, 2 days to reinforce the plug, 1 days to strip the plug. Crane will be used 1/2 of time to support crew by flying material close to plug location. A small pump will be used to install concrete. Please note the production is adjusted to account for the duration as listed above.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.020	Project	: KRRP - Iron Gate			
Description	:	Remove Concrete Closure Gates in Gate Tower	Group	: D07			
Quantity	:	85.00 CY					
Daily Production	:	40.00 CY per 10 hour shift	Project #	: 4			
Work Days	:	2.1 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$408.92 per CY	Probable Low	Cost Parameter	46	\$29,544	\$397
Total Cost	:	\$34,758	Probable High	Cost Parameter	34	\$39.972	\$537

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.1	10	21.00	L	\$53.10	incl. in rate	incl. in rate	\$1,115.04
Equipment Operator (medium)	Active	2.00	2.1	10	42.00	L	\$72.91	incl. in rate	incl. in rate	\$3,062.14
Steelworker	Active	2.00	2.1	10	42.00	L	\$72.07	incl. in rate	incl. in rate	\$3,027.02
Electrician	Active	1.00	2.1	10	21.00	L	\$49.75	incl. in rate	incl. in rate	\$1,044.81
Truck Driver (heavy)	Active	1.00	2.1	10	21.00	L	\$63.35	incl. in rate	incl. in rate	\$1,330.33
Vibratory Hammer & Extractor	Active	1.00	2.1	10	21.00	E	\$94.34	incl. in rate	incl. in rate	\$1,981.14
Hydraulic Excavator (6.0cy)	Active	1.00	2.1	10	21.00	E	\$322.48	incl. in rate	incl. in rate	\$6,772.08
Loader, FE Rubber Tire (8.6cy)	Active	1.00	2.1	10	21.00	E	\$221.50	incl. in rate	incl. in rate	\$4,651.50
Diver, Wet	Active	2.00	2.1	10	42.00	L	\$137.03	incl. in rate	incl. in rate	\$5,755.13
Barge, Sectional, 20'x10'	Active	1.00	2.1	10	21.00	E	\$4.48	incl. in rate	incl. in rate	\$94.08
Barge Operator	Active	1.00	2.1	10	21.00	L	\$44.33	incl. in rate	incl. in rate	\$930.93
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.1	10	21.00	E	\$174.47	incl. in rate	incl. in rate	\$3,663.87
				ī		_				
				Labor Hours	210				TOTAL LABOR	\$16,265.40
				Equipment Hours	105			TO	TAL EQUIPMENT	\$17,162.67

ATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					ſ	
					TOTAL SUBCONTRACTS	\$0.0

SUMMARY OF COSTS						
Labor Cost	\$16,265.40	Labor Burden @	49.7%	\$0.00		\$16,265.40
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$17,162.67	Equipment Tax @	7.75%	\$1,330.11		\$18,492.78
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$33,428			\$1,330	DIRECT COST SUBTOTALS	\$34,758
Additional Pay Item Notes :						
-						

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.021		Project	: KRRP - Iron Gate			
	ĺ	Remove Upstream Riprap (1	10' thick upstream side of					
		Dam)						
Description	:			Group	: D08			
Quantity	: [92,400.00 cy						
Daily Production	: [8,800.00 cy per	20 hour shift	Project #	: 4			
Work Days	: '	10.5 Days		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$6.21 per cy		Probable Low C	ost Parameter	9680	\$516,836	\$6.39
Total Cost	:	\$574,262		Probable High C	Cost Parameter	7040	\$689,115	\$8.52

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	10.5	20	210.00	Е	\$274.63	incl. in rate	incl. in rate	\$57,672.30
Loader, FE Rubber Tire (5.25cy)	Active	1.00	10.5	20	210.00	E	\$75.42	incl. in rate	incl. in rate	\$15,838.20
Equipment Operator (medium)	Active	3.00	10.5	20	630.00	L	\$72.91	incl. in rate	incl. in rate	\$45,932.04
Truck Driver (heavy)	Active	8.00	9.4	20	1,501.44	L	\$63.35	incl. in rate	incl. in rate	\$95,114.72
Laborer	Active	4.00	10.5	20	840.00	L	\$50.38	incl. in rate	incl. in rate	\$42,319.20
Labor Foreman	Active	1.00	10.5	20	210.00	L	\$53.10	incl. in rate	incl. in rate	\$11,150.37
Grader, 180hp, 13' blade	Active	1.00	10.5	20	210.00	E	\$80.79	incl. in rate	incl. in rate	\$16,965.90
CAT 745 (22 CV) OFF BOAD TRUCK	Anthro	9.00	0.4	20	4 504 44	E	\$174.47	inal in rate	incl. in rate	#204.0F0.0
CAT 745 (32 CY) OFF ROAD TRUCK	Active	8.00	9.4	20	1,501.44	E	\$174.47	incl. in rate	inci. In rate	\$261,956.24
				Labor Hours	3181.44				TOTAL LABOR	\$194,516.3
			Ec	uipment Hours	2131.44				TOTAL EQUIPMENT	\$352,432.64

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	***
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$194,516.33 Labor Burden @	49.7% \$0.00		\$194,516.33
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$352,432.64 Equipment Tax @	7.75% \$27,313.53		\$379,746.17
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$546,949	\$27,314	DIRECT COST SUBTOTALS	\$574,262
Additional Pay Item Notes :				
See production and sequence notes				

Cost Factors	Lew Cost Factors No Bad Westhers On Picconsens On Picconsens On Industrial Matel Access Issues Oversal Production 50%	3520 8800
	No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Overall Production 89%	
100 100	Gas Price Decrease No Uniforeseen Contaminated Mats/ Access Issues Overall Production 80%	
100 100	Gas Price Decrease No Uniforeseen Contaminated Mats/ Access Issues Overall Production 80%	
Section Fee Hour Hours Efficiency Factor (Access, Activity, Gry, High Rebar Density, Breaks, Ect) Section Fee Hour Section Fee Hour Section Fee Hours Se	Overall Production 80%	
Nove Nove Nove Efficiency Factor (Access, Activity, Oby., High Rehar Density, Breaks, Ect)	80%	
Second S	80%	
Notes Street Looding Production per shift		
	ov n	5500
\$2,400.0 (** per Nour ** 100.0 (** per Nou	•	
\$2,400.0 (** per Nour ** 100.0 (** per Nou	,	
Factor 30% CV Bucket Star CY Vehicle 89% Capacity (1.3 tons per CY) 212, 8 of Exzavators Stat Vehicles Sub Vehicles Sub Vehicles Sub Vehicles Sub Vehicles Sub Cy per Totor (5 CV Bucket) Sub (CY per Hotor (Side Sport Time, Manerover Time, & Loading) (Minutes) Sub Vehicles Sub Cy per Hotor (Side Sport Time, Manerover Time, & Loading) (Minutes)		
Vehicle SPo. Clapacity (1.3 tons per CY) 27.2 of a Exercators Bast Vehicle SPo. Clapacity (1.3 tons per CY) 8 CY per Hour (5 CY Bucket) Time (Includes Spo. Time, Maneuver Time, & Loading) (Minutes) 8.0 (Y Per Hour Ealer Production Per 8 Hour Shift		5.00
taul Vehicles 8 CV per Hour (S CV Bucket) Time (Includes Spot Time, Maneuver Time, & Loszling) (Minutes) 5.0 CV Per Hour folial Production Per 8 Hour Shift		26
Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		1.00
		128
Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) 3.0 Efficient Compared to Ideal Production		160
		80%
Speed (Loaded MPH)		20%
n Speed (Unloaded MPH) 20		
Distance (Miles) 1.00		
Length (Hours) 20		
Time		
TITURE (LAST Time Kinotes / Sónica) 0.08		
Time (Naul Dissance / Naul Speed)		
Time (Dump Tens Minosar 769 Mins) 0.05		
Time plant lineare / Interns Spans) 0,05		
1 time glass transmit speed) (0.00)		
ency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT) 85%		
I Hours Per Cycle (Hours per Cycle (Hours per Cycle)		
Number of Maul Moura (Austral Chronic Reviews Cycles) 502 Number of Maul Moura (Austral Chronic Reviews Cycles) 187.68		
S Per Hour (Number of Cycles / Total Number of Heal Hours)		
per of Haul Days 9.384		
1 Lasted Max Weight lbs of loaded 745 164,500.00		
Tons 82		
20tbs/Ton Rolling weigth 4		
Rolling Resitance (1% for sech 2016#70n) 4%. Slops Grade 7%.		
Total Resistance 11%		
Max Ger per CAT Chart 4 Max WH 8.8		
d Empty		
Max Weight the of Empty 745 74,100,000 Tons Empty 37		
2 Zulbs/Ton Rolling weight Empty 2		
Max Gear per CAT Chart Empty WA		
Max MPH Empty N/A		
Notes true to weight and Grade Speed Calculation is not applicable		
Rolling Resitance (11/per 2016erTon) Empty 21/L Average Slope Empty 71/L Total Resistance Empty 51/L		

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.022	Project	: KRRP - Iron Gate			
Description	:	Remove Downstream Riprap	Group	: D08			
Quantity	:	23,400.00 cy					
Daily Production	:	8,000.00 cy per 20 hour shift	Project #	: 4			
Work Days	:	2.9 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$6.41 per cy	Probable Low	Cost Parameter	8800	\$135,081	\$6.59
Total Cost	:	\$150,090	Probable High	n Cost Parameter	6400	\$180,107	\$8.79

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	2.9	20	58.00	E	\$274.63	incl. in rate	incl. in rate	\$15,928.54
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.9	20	58.00	E	\$75.42	incl. in rate	incl. in rate	\$4,374.36
Equipment Operator (medium)	Active	3.00	2.9	20	174.00	L	\$72.91	incl. in rate	incl. in rate	\$12,685.99
Truck Driver (heavy)	Active	7.00	2.7	20	380.80	L	\$63.35	incl. in rate	incl. in rate	\$24,123.30
Laborer	Active	4.00	2.9	20	232.00	L	\$50.38	incl. in rate	incl. in rate	\$11,688.16
Labor Foreman	Active	1.00	2.9	20	58.00	L	\$53.10	incl. in rate	incl. in rate	\$3,079.63
Grader, 180hp, 13' blade	Active	1.00	2.9	20	58.00	E	\$80.79	incl. in rate	incl. in rate	\$4,685.82
CAT 745 (32 CY) OFF ROAD TRUCK	Active	7.00	2.7	20	380.80	E	\$174.47	incl. in rate	incl. in rate	\$66,438.18
S B (22.5.) S NOTO 110001	7 Cive	7.50		20	33.00		Ç 			\$00,400.10
				Labor Hours	844.8				TOTAL LABOR	\$51,577.08
			Equi	pment Hours	554.8				TOTAL EQUIPMENT	\$91,426.90

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost

						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$51,577.08 Labor Burden @	49.7% \$0.00		\$51,577.08
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$91,426.90 Equipment Tax @	7.75% \$7,085.58		\$98,512.48
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$143,004	\$7,086	DIRECT COST SUBTOTALS	\$150,090
Additional Pay Item Notes :				
See production and sequence notes				

4.022 Rem		nstream Riprap		
	Detai	s		
High Cost Factors			Low Cost Factors	
Bad Weather	0%		No Bad Weather	0%
Gas Price Increase Unforeseen Contaminated Mats/ Access issues	10% 10%		Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues	10%
Unforeseen Contaminated Mats/ Access Issues	10%		No Unforeseen Contaminated Mats/ Access issues	10%
Production Per Hour Hours 500	8	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	3200
300	20		80%	8000
Haul Notes		Excavator Loading Production per shift		
		CY per Hour		128
Swell Factor		CY Bucket Size		5.00
Bulk CY Haul Vehicle 85% Capacity (1.3 tons per CY)		Buckets Per Hour # of Excavators		26 1.00
raut venue du capacity (1.3 toils per C1) 8 of Haul Vehicles		CY per Hour (5 CY Bucket)		128
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift		160
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		Efficient Compared to Ideal Production		80%
Haul Speed (Loaded MPH)	8.8	Inefficiencies Compared to Ideal Production		20%
Return Speed (Unloaded MPH)	20			
Haul Distance (Miles)	1.00			
Shift Length (Hours)	20			
Cyce Time				
Lyce Ilme Load Time (Load Time Minutes / 60mins)	0.08			
Local time (condition minuse) and (condition minuse) Hall Time (Hall Distance) Hall Distance (Ha	0.11			
Dump Time (Dump Time Minutes / 60 Mins)	0.05			
Return Time (Haad Distance) Return Speedy	0.05			
Hours Per Cycle	0.29			
Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)	85%			
Actual Hours Per Cycle (Hours per Cycle / Efficeancy Factor) Number of Cycles/ Bulk CY/ (Hau) Vehicle Cao X # of Hauf Vehicles)	0.34 160			
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	54.4 2.94			
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days	2.94 2.72			
Number of naturbays	2.12			
Speed Loaded				
Max Weight lbs of loaded 745	164,500.00			
Tons	82			
20lbs/Ton Rolling weigth Rolling Resitance (1% for each 20lbs/Ton)	4 4%			
Slope Grade	7%			
Total Resistance Max Gear per CAT Chart	11%			
Max MPH	8.8			
Speed Empty Max Weight lbs of Empty 745	74,100.00			
Tons Empty	37			
20lbs/Ton Rolling weight Empty	2			
Rolling Resitance (1% per 20lbs/Ton) Empty	2%			
Average Slope Empty	7%			
Total Resistance Empty	-5%			
Max Gear per CAT Chart Empty Max MPH Empty	N/A N/A			
nad merit crippy Notes Due to weight and Grade Speed Calculation is not applicable				
Other Notes				
This estimate is for excavating the rip rap off of the earth dam at Iron Gate. This activity is expected to have similar production as 4.023.1.				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.023	Project : KRRP - Iron Gate			
		Dam Fill Excavation to Spillway				
Description	:		Group : D08			
Quantity	:	270,000.00 cy				
Daily Production	:	8,000.00 cy per 20 hour shift	Project # : 4			
Work Days	: '	33.8 Days	Estimator : Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$6.09 per cy	Probable Low Cost Parameter	8800	\$1,479,189	\$6.26
Total Cost	:	\$1,643,543	Probable High Cost Parameter	6400	\$1,972,251	\$8.34

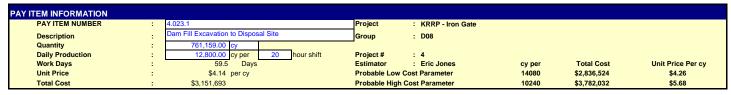
Work Days : Unit Price : Total Cost :	33 \$6.09 \$1,643,54	per cy	8		Estimator Probable Low Probable High		neter	cy per 8800 6400	Total Cost \$1,479,189 \$1,972,251	Unit Price Per cy \$6.26 \$8.34
Total Cost :	\$1,043,34)			Probable nigh	Cost Parai	neter	6400	\$1,972,251	\$0.34
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	33.8	20	676.00	E	\$274.63	incl. in rate	incl. in rate	\$185,649.8
Loader, FE Rubber Tire (5.25cy)	Active	1.00	33.8	20	676.00	E	\$75.42	incl. in rate	incl. in rate	\$50,983.9
Equipment Operator (medium)	Active	4.00	33.8	20	2,704.00	L	\$72.91	incl. in rate	incl. in rate	\$197,143.2
Truck Driver (heavy)	Active	6.00	33.8	20	4,056.00	L	\$63.35	incl. in rate	incl. in rate	\$256,943.5
Laborer	Active	4.00	33.8	20	2,704.00	L	\$50.38	incl. in rate	incl. in rate	\$136,227.5
Labor Foreman	Active	1.00	33.8	20	676.00	L	\$53.10	incl. in rate	incl. in rate	\$35,893.5
Dozer (235hp)(CATD7)	Active	1.00	33.8	20	676.00	E	\$165.11	incl. in rate	incl. in rate	\$111,614.3
Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn)	Active	1.00	33.8	20	676.00	Е	\$72.79	incl. in rate	incl. in rate	\$49,206.0
CAT 745 (32 CY) OFF ROAD TRUCK	Active	6.00	33.8	20	4,056.00	E	\$134.79	incl. in rate	incl. in rate	\$546,708.2
				Labor Hours	10140				TOTAL LABOR	\$626,207.8
				Equipment Hours	6760				TOTAL EQUIPMENT	\$944,162.4
						-			•	
MATERIAL COSTS										
Description	Item Quantity	Order		onversion	Order		Order			Material
	Quantity	Unit	Fac	tor / Waste	Quantity		Price			Cost

TERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material
Description	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
	Quantity	Offic	Factor / Waste	Quantity	FIICE		CUSI
						TOTAL MATERIAL	

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
	•					
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$626,207.87 La	ahor Burden @	49.7%	\$0.00		\$626,207.87
Material Cost		aterial Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$944,162.44 Ec		7.75%	\$73,172.59		\$1,017,335.03
Subcontractors	\$0.00					\$0.00
			I.			
DIRECT COST SUBTOTALS	\$1,570,370			\$73,173	DIRECT COST SUBTOTALS	\$1,643,543
Additional Pay Item Notes :						

Low Cost Factors No Bad Weather Gas Price Decrease No Uniforesem Contaminated Mata' Access Issues Factor (Access, Activity, Ocy, High Rebar Density, Breaks, Ect) Soys, Soy	1 1 3200 8000
No Bad Weather Gas Price Decrease No Uniforeseen Contaminated Matal Access Issues Overall Production	3200 8000 68 5.00
No Bad Weather Gas Price Decrease No Uniforeseen Contaminated Matal Access Issues Overall Production	3200 8000 68 5.00
Case Price Decrease No Uniforeseen Contaminated Mats/ Access Issues No Unifore	3200 8000 68 5.00
No Universeen Contaminated Matal Access Issues icidency Factor (Access, Activity, Osy, High Rebar Density, Breaks, Ect) Overall Production 50%, 50%. cavater Loading Production per shift per Hour Blocket Size Clear Fer Hour Excervators Fig. 100 August 100 A	3200 8000 68 5.00
iciency Factor (Access, Activity, Oxy, High Reber Density, Breaks, Ect) 50% 50% 50% 50% Consistor Loading Production per shift per Hour Bucket Size 6 Excensions 6 Excensions 6 Excensions	3200 8000 68 5.00
50% 50% 50% 50% Service Leading Production per shift per Hour Bucket Size Clear Fer Hour Excensions	3200 8000 68 5.00
50% 50% 50% 50% Service Leading Production per shift per Hour Bucket Size Clear Fer Hour Excensions	68 5.00
50% cavator Leading Production per shift per Hour Bucked Size chels Per Hour Elecandros For Hour (Control of the Control	68 5.00
per Hour Blocket Size Chets Per Hour Elscwetors Fer Hour Control of Strucket)	5.00
per Hour Blocket Size Chets Per Hour Elscwetors Fer Hour Control of Strucket)	5.00
Bucket Size ckets Per Nour Excevators per Hour (5 CY Bucket)	5.00
ckets Per Hour Excevators Fer Hour (S O' Bucket)	
f Excavators per Hour (S CY Bucket)	
per Hour (5 CY Bucket)	14 1.00
	68
Per Hour Ideal Production Per 8 Hour Shift	160
icient Compared to Ideal Production	43%
fficiencies Compared to Ideal Production	58%



Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	59.5	20	1,190.00	E	\$274.63	incl. in rate	incl. in rate	\$326,809.70
Loader, FE Rubber Tire (5.25cy)	Active	1.00	59.5	20	1,190.00	E	\$75.42	incl. in rate	incl. in rate	\$89,749.80
Equipment Operator (medium)	Active	4.00	59.5	20	4,760.00	L	\$72.91	incl. in rate	incl. in rate	\$347,042.08
Truck Driver (heavy)	Active	7.00	59.5	20	8,330.00	L	\$63.35	incl. in rate	incl. in rate	\$527,697.17
Laborer	Active	4.00	59.5	20	4,760.00	L	\$50.38	incl. in rate	incl. in rate	\$239,808.80
Labor Foreman	Active	1.00	59.5	20	1,190.00	L	\$53.10	incl. in rate	incl. in rate	\$63,185.43
Grader, 180hp, 13' blade	Active	1.00	59.5	20	1,190.00	E	\$80.79	incl. in rate	incl. in rate	\$96,140.10
Dozer (235hp)(CATD7)	Active	1.00	59.5	20	1,190.00	E	\$165.11	incl. in rate	incl. in rate	\$196,480.90
CAT 745 (32 CY) OFF ROAD TRUCK	Active	7.00	59.5	20	8,330.00	E	\$134.79	incl. in rate	incl. in rate	\$1,122,800.70
	, isang	7.00	00.0		C,GCC.CC	_	\$ 10 0			\$1,12 ,000.00
				Labor Hours	19040				TOTAL LABOR	\$1,177,733.48
				Equipment Hours	13090				TOTAL EQUIPMENT	\$1,831,981.20

ATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS			
Labor Cost	\$1,177,733.48 Labor Burden @	49.7% \$0.00	\$1,177,733.48
Material Cost	\$0.00 Material Tax @	7.75% \$0.00	\$0.00
Equipment Cost	\$1,831,981.20 Equipment Tax @	7.75% \$141,978.54	\$1,973,959.74
Subcontractors	\$0.00		\$0.00
DIRECT COST SUBTOTALS	\$3,009,715	\$141,979	DIRECT COST SUBTOTALS \$3,151,693
Additional Pay Item Notes :			
See production notes			

	4.023.1 Dam Fill Exc	avation to Disposal Site		
	De	tails		
High Cost Factors			Low Cost Factors	
Bad Weather	0%		No Bad Weather	0%
Gas Price Increase Unforeseen Contaminated Mats/ Access Issues	109 109		Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues	10% 0%
Uniforeseen Contaminated Mats/ Access issues	20%		No Unioreseen Contaminated Mats/ Access issues	10%
Production Per Hour Hours		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production 80%	5120
	20		80%	12800
Haul Notes CY	764 150 00	Excavator Loading Production per shift CY per Hour		128
Swell Factor		CY Bucket Size		5.00
Bulk CY		Buckets Per Hour		26
Haul Vehicle 85% Capacity (1.3 tons per CY)		0 III of Excavators		1.00
# of Haul Vehicles	1	CY per Hour (5 CY Bucket)		128
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift		160
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		Efficient Compared to Ideal Production		80%
Haul Speed (Loaded MPH)	8.1	Inefficiencies Compared to Ideal Production		20%
Return Speed (Unloaded MPH) Haul Distance (Miles)	1.0			
Shift Length (Hours)	1.0			
omit congui (noma)	-			
Cyce Time				
Load Time (Load Time Minutes / 60mins)	0.0	2		
Haul Time (Haul Distance / Haul Speed)	0.1	1		
Dump Time (Dump Time Minutes / 60 Mins)	0.03	2		
Return Time (Haul Distance / Return Speed)	0.0			
Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)	0.2i			
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	0.2			
Number of Cycles(Bulk CY/(Haul Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	519			
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)	1299.2 4.0			
Number of Haul Days	64.962	5		
Speed Loaded				
Max Weight lbs of loaded 745 Tons	164,500.00 82			
20lbs/Ton Rolling weigth	4			
Rolling Resitance (1% for each 20lbs/Ton) Slope Grade	49/ 79/			
Total Resistance	119			
Max Gear per CAT Chart Max MPH	a.			
Speed Empty	-			
Max Weight lbs of Empty 745	74,100.00 37			
Tons Empty				
20lbs/Ton Rolling weight Empty Rolling Resitance (1% per 20lbs/Ton) Empty	2 2%			
Average Slope Empty	79			
Total Resistance Empty	-5%			
Max Gear per CAT Chart Empty Max MPH Empty	N/A N/A			
Notes Due to weight and Grade Speed C		`		

ther Notes

This sectional accounts for exclusing the remaining intention to the first related that the section operation will be exclusively the remaining intention to the first related that the section operation will be exclusively as the related transfer of the section operation will be exclusively as the related transfer of the section operation will be exclusively as the related transfer of the section operation will be exclusively as the related transfer of the section operation will be exclusively as the related transfer of the section operation will be exclusively as the related to the section of the related transfer of the re

\$3,014.58

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.024	Project	: KRRP - Iron Gate			
Description	:	Cutoff Wall Concrete Demolition	Group	: D07			
Quantity	:	2,440.00 cy	_				
Daily Production	:	187.50 cy per 10 hour shift	Project #	: 4			
Work Days	:	13.0 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$72.83 per cy	Probable Low	Cost Parameter	206.25	\$159,931	\$74.88
Total Cost	:	\$177,701	Probable High	n Cost Parameter	159.375	\$204,356	\$95.68

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	13.0	10	130.00	L	\$53.10	incl. in rate	incl. in rate	\$6,902.6
Laborer	Active	4.00	13.0	10	520.00	L	\$50.38	incl. in rate	incl. in rate	\$26,197.60
Equipment Operator (medium)	Active	2.00	13.0	10	260.00	L	\$72.91	incl. in rate	incl. in rate	\$18,956.08
Truck Driver (heavy)	Active	1.00	13.0	10	130.00	L	\$63.35	incl. in rate	incl. in rate	\$8,235.37
Air Compressor 900 cfm	Active	1.00	13.0	10	130.00	E	\$38.87	incl. in rate	incl. in rate	\$5,052.96
Air Compressor 600 cfm	Active	1.00	13.0	10	130.00	E	\$21.74	incl. in rate	incl. in rate	\$2,826.06
Air Tool, Chipping Hammer	Active	4.00	13.0	10	520.00	E	\$1.64	incl. in rate	incl. in rate	\$852.30
Generator, Small Generator, 10 - 15 kW	Active	1.00	13.0	10	130.00	E	\$7.04	incl. in rate	incl. in rate	\$915.20
Hydraulic Excavator (2.5cy)	Active	2.00	13.0	10	260.00	E	\$203.63	incl. in rate	incl. in rate	\$52,943.80
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	13.0	10	130.00	E	\$62.72	incl. in rate	incl. in rate	\$8,153.60
Hydraulic Thumbs/Shear Attachment	Active	1.00	13.0	10	130.00	E	\$16.39	incl. in rate	incl. in rate	\$2,130.70
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	13.0	10	130.00	Е	\$174.47	incl. in rate	incl. in rate	\$22,681.10
			L	abor Hours	1,040				TOTAL LABOR	\$60,291.66
			Equipr	nent Hours	1,560				TOTAL EQUIPMENT	\$95,555.72

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$3,014.58	\$3,014.58

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	4 EA	Cost per Mob	\$2,500.00		\$10,000.00
Hauling Disposal Cost	6.00 Loads	90lbs per CY	\$200.00		\$1,200.00
				TOTAL CURCONTRACTS	£44 200 00

CUMMARY OF COSTS				
SUMMARY OF COSTS				
Labor Cost	\$60,291.66 Labor Burden @	0.0% \$0.00	Included in hourly labor rate.	\$60,291.6
Material Cost	\$3,014.58 Material Tax @	7.75% \$233.63		\$3,248.2
Equipment Cost	\$95,555.72 Equipment Tax @	7.75% \$7,405.57		\$102,961.29
Subcontractors	\$11,200.00			\$11,200.0
DIRECT COST SUBTOTALS	\$170,062	\$7,639	DIRECT COST SUBTOTAL	\$ \$177,70
Additional Pay Item Notes :				

This item will be double shifted with two 10 hours shifts due to work window restrictions established by the California in water work permit.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.025	Project : KRRP - Iron Gate			
Description	:	Earth Fill Crest Raise Demolition	Group : D08			
Quantity	:	13,000.00 cy				
Daily Production	:	2,750.00 cy per 20 hour shift	Project # : 4			
Work Days	:	4.7 Days	Estimator : Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$12.56 per cy	Probable Low Cost Parameter	3162.5	\$138,745	\$12.19
Total Cost	:	\$163,229	Probable High Cost Parameter	2337.5	\$187,713	\$16.50

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Dozer (310hp)(CATD8)	Active	2.00	4.7	20	188.00	E	\$197.60	incl. in rate	incl. in rate	\$37,148.80
Hydraulic Excavator (5.0cy)	Active	1.00	4.7	20	94.00	E	\$274.63	incl. in rate	incl. in rate	\$25,815.22
Truck, Pickup (4x4, 3/4tn)	Active	4.00	4.7	20	376.00	E	\$16.94	incl. in rate	incl. in rate	\$6,369.44
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.7	20	94.00	E	\$75.42	incl. in rate	incl. in rate	\$7,089.48
Truck Driver (heavy)	Active	2.00	4.7	20	188.00	L	\$63.35	incl. in rate	incl. in rate	\$11,909.61
Equipment Operator (medium)	Active	4.00	4.7	20	376.00	L	\$72.91	incl. in rate	incl. in rate	\$27,413.41
Labor Foreman (out)	Active	1.00	4.7	20	94.00	L	\$50.90	incl. in rate	incl. in rate	\$4,784.32
Laborer	Active	2.00	4.7	20	188.00	L	\$50.38	incl. in rate	incl. in rate	\$9,471.44
CAT 745 (32 CY) OFF ROAD TRUCK	Active	2.00	4.7	20	188.00	E	\$134.79	incl. in rate	incl. in rate	\$25,340.52
	7.63.10	2,00			. 23.00	_	Ţo			V -0,0 (8.62
				Labor Hours	846				TOTAL LABOR	\$53,578.78
			Fauir	oment Hours	940				TOTAL EQUIPMENT	\$101,763.46

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL WATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$53,578.78 Labor Burden @	49.7% \$0.00		\$53,578.78
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$101,763.46 Equipment Tax @	7.75% \$7,886.67		\$109,650.13
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$155,342	\$7,887	DIRECT COST SUBTOTALS	\$163,229
Additional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER		4.026	Project	: KRRP - Iron Gate			
Description	:	Sheetpile Crest Raise Demolition	Group	: D08			
Quantity	:	800.00 If					
Daily Production	:	100.00 If per 10 hour shi	ift Project #	: 4			
Work Days	:	8.0 Days	Estimator	: Eric Jones	If per	Total Cost	Unit Price Per If
Unit Price	:	\$286.40 per If	Probable Low	Cost Parameter	115	\$194,755	\$278.11
Total Cost	:	\$229,123	Probable High	n Cost Parameter	85	\$263,492	\$376.27

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (1.5cy)	Active	1.00	8.0	10	80.00	E	\$141.92	incl. in rate	incl. in rate	\$11,353.60
Hydraulic Excavator (5.0cy)	Active	3.00	8.0	10	240.00	E	\$274.63	incl. in rate	incl. in rate	\$65,911.20
Dozer (125hp)(CATD6)	Active	1.00	8.0	10	80.00	Е	\$82.17	incl. in rate	incl. in rate	\$6,573.60
Drill Rig & Augers	Active	1.00	8.0	10	80.00	E	\$333.31	incl. in rate	incl. in rate	\$26,664.80
Steelworker	Active	1.00	8.0	10	80.00	L	\$72.07	incl. in rate	incl. in rate	\$5,765.76
Truck Driver (heavy)	Active	1.00	8.0	10	80.00	L	\$63.35	incl. in rate	incl. in rate	\$5,067.92
Carpenter Foreman (out)	Active	1.00	8.0	10	80.00	L	\$51.04	incl. in rate	incl. in rate	\$4,083.20
Pile Driver	Active	4.00	8.0	10	320.00	L	\$78.56	incl. in rate	incl. in rate	\$25,139.20
	7.55.75	00	0.0	.0	020.00	_	Çioloo		iio. iii tato	\$25 ,1002 0
			La	abor Hours	560				TOTAL LABOR	\$40,056.08
			Equipn	nent Hours	480				TOTAL EQUIPMENT	\$110,503.20

TERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material
Description	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
				-,,			
						TOTAL MATERIAL	\$

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Load Allowance for Disposal	30	LD		\$1,000.00		\$30,000.00
Crane Mob and Demob	1	LS		\$40,000.00		\$40,000.00
					TOTAL SUBCONTRACTS	\$70,000,00

SUMMARY OF COSTS				
Labor Cost	\$40,056.08 Labor Burden @	49.7% \$0.00		\$40,056.08
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$110,503.20 Equipment Tax @	7.75% \$8,564.00		\$119,067.20
Subcontractors	\$70,000.00			\$70,000.00
DIRECT COST SUBTOTALS	\$220,559	\$8,564	DIRECT COST SUBTOTALS	\$229,123
Additional Pay Item Notes :				

\$277.15

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.027	Project	: KRRP - Iron Gate			
Description	:	Remove 5 Reservoir Monitoring Wells	Group	: D10			
Quantity	:	5.00 EA					
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 4			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,203.61 per EA	Probable Low	Cost Parameter	2.75	\$9,916	\$2,265.66
Total Cost	:	\$11,018	Probable High	Cost Parameter	2.125	\$12,671	\$2,895.01

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$53.10	incl. in rate	incl. in rate	\$1,061.9
Laborer	Active	3.00	2.0	10	60.00	L	\$50.38	incl. in rate	incl. in rate	\$3,022.8
Hydraulic Excavator (2.5cy)	Active	1.00	2.0	10	20.00	E	\$203.63	incl. in rate	incl. in rate	\$4,072.6
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.91	incl. in rate	incl. in rate	\$1,458.1
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	2.0	10	20.00	E	\$36.58	incl. in rate	incl. in rate	\$731.60
				Labor Hours	100	1		т	OTAL LABOR	\$5,542.9
				Equipment Hours	40			TOTAL	L EQUIPMENT	\$4,804.

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$277.15	\$277.15

SUBCONTRACT COSTS								
Description	Quantity	Units	Notes /			Unit		Contract or Quote
			Company			Price		Amount
							TOTAL SUBCONTRACTS	\$0.00
SUMMARY OF COSTS								
Labor Cost	\$5,542.90 L	abor Burden @		49.7%	\$0.00			\$5,542.90
Material Cost	\$277.15 N	Material Tax @		7.75%	\$21.48			\$298.62
Equipment Cost	\$4,804.20 E	quipment Tax @		7.75%	\$372.33			\$5,176.53
Subcontractors	\$0.00							\$0.00
DIRECT COST SUBTOTALS	\$10.624				\$394		DIRECT COST SUBTOTALS	\$11.018

Equipment Cost \$4,804.20 | Equipment Tax @ 7.75% | \$372.33 | \$5,176.5 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00

\$2,953.37

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.029	Project : KRI	RP - Iron Gate		
Description	:	Remove and Dispose of Intake Structure	Group : D07			
Quantity	:	72,000.00 LBS				
Daily Production	:	20,000.00 LBS per 10 hour shift	Project # : 4			
Work Days	: '	3.6 Days	Estimator : Mih	aela Tomulescu LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.75 per LBS	Probable Low Cost Para	meter 23000	\$46,052	\$0.73
Total Cost	:	\$54,179	Probable High Cost Para	meter 16000	\$65,014	\$1.03

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.6	10	36.00	L	\$53.10	\$0.00		\$1,911.49
Laborer	Active	4.00	3.6	10	144.00	L	\$50.38	\$0.00		\$7,254.72
Steelworker	Active	2.00	3.6	10	72.00	L	\$72.07	\$0.00		\$5,189.18
Equipment Operator (medium)	Active	1.00	3.6	10	36.00	L	\$72.91	\$0.00		\$2,624.69
Equipment Operator (crane)	Active	1.00	3.6	10	36.00	L	\$75.25	\$0.00		\$2,709.04
Crawler Crane (130tn)	Active	1.00	3.6	10	36.00	E	\$258.66	\$258.66		\$9,311.76
Hydraulic Excavator (5.0cy)	Active	1.00	3.6	10	36.00	E	\$274.63	\$274.63		\$9,886.68
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	2.00	3.6	10	72.00	Е	\$62.72	\$62.72		\$4,515.84
				Labor Hours	324			Т	OTAL LABOR	\$19,689.12
				Equipment Hours	144			TOTAL	EQUIPMENT	\$23,714.28

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, electrodes, wrenches, hard hats etc)	1.00	LS	1.000	1.00	\$2,953.37	\$2,953

	Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
9.00	ton	1.000	9.00	\$595.00	\$5,355.0
2.00	Loads	20 tons a load		\$200.00	\$400.0
_			9.00 ton 1.000	9.00 ton 1.000 9.00	9.00 ton 1.000 9.00 \$595.00

SUMMARY OF COSTS				
Labor Cost	\$19,689.12 Labor Burden @	49.7% \$0.00	\$19,	689.12
Material Cost	\$2,953.37 Material Tax @	7.75% \$228.89	\$3,	182.25
Equipment Cost	\$23,714.28 Equipment Tax @	7.75% \$1,837.86	\$25,	552.14
Subcontractors	\$5,755.00		\$5,	755.00
DIRECT COST SUBTOTALS	\$52,112	\$2,067	DIRECT COST SUBTOTALS \$	54,179
Additional Pay Item Notes :				

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$53.10	\$0.00		\$265.49
Electrician	Active	1.00	0.5	10	5.00	L	\$49.75	\$0.00		\$248.77
Steelworker	Active	3.00	0.5	10	15.00	L	\$72.07	\$0.00		\$1,081.08
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.5	10	5.00	E	\$221.50	\$221.50		\$1,107.50
Truck Driver (heavy)	Active	2.00	0.5	10	10.00	L	\$63.35	\$0.00		\$633.49
Truck, Flatbed (4x4, 10,000 gvw)	Active	2.00	0.5	10	10.00	E	\$31.90	\$31.90		\$319.00
Hydraulic Crane (120tn)	Active	1.00	0.5	10	5.00	E	\$239.06	\$239.06		\$1,195.30
Welder	Active	2.00	0.5	10	10.00	E	\$7.84	\$7.84		\$78.38
Gas Welding Machine	Active	2.00	0.5	10	10.00	E	\$2.88	\$2.88		\$28.77
Equipment Operator (medium)	Active	1.00	0.5	10	5.00	L	\$72.91	\$0.00		\$364.54
Equipment Operator (crane)	Active	1.00	0.5	10	5.00	L	\$75.25	\$0.00		\$376.26
Laborer	Active	3.00	0.5	10	15.00	L	\$50.38	\$0.00		\$755.70
				Labor Hours	60			тс	OTAL LABOR	\$3,725.3
				Equipment Hours	40			TOTAL	EQUIPMENT	\$2,728.94

			Labor Hours	60		TOTAL LABOR	\$3,72
			Equipment Hours	40		TOTAL EQUIPMENT	\$2,72
ERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
umahla 50/ lahar (asurbladas drill hita at	Quantity 1.00	Unit LS	Factor / Waste 1,000	Quantity 1.00	Price \$186.27		Cost \$18
sumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$186.27		\$18
						TOTAL MATERIAL	\$1
CONTRACT COSTS							
Description	Quantity	Units	Notes /		Unit		Contract or Quot
			Company		Price		Amount
						TOTAL SUBCONTRACTS	
MARY OF COSTS							
r Cost	\$3,725,32	Labor Burden @	49.7%	\$0.00			\$3,7
rial Cost		Material Tax @	7.75%	\$14.44		_	\$2
pment Cost		Equipment Tax @	7.75%	\$211.49			\$2,9
	\$0.00			•			* /
contractors							
	\$6,641			\$226		DIRECT COST SUBTOTALS	

\$175.87

TOTAL MATERIAL

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.032	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Air Vent Pipe - 8" Dia. Sch 40 x160'	Group	: D03			
Quantity	:	4,650.00 LBS					
Daily Production	:	4,650.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	1.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.25 per LBS	Probable Low Co	ost Parameter	5347.5	\$4,959	\$1.22
Total Cost	:	\$5,834	Probable High C	ost Parameter	3720	\$7,001	\$1.72

Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Active	1.00	1.0	10	10.00	L	\$61.92	incl. in rate	incl. in rate	\$619.19
Active	1.00	1.0	10	10.00	L	\$50.38	incl. in rate	incl. in rate	\$503.80
Active	1.00	1.0	10	10.00	L	\$71.39	incl. in rate	incl. in rate	\$713.90
Active	1.00	1.0	10	10.00	E	\$64.23	incl. in rate	incl. in rate	\$642.30
Active	1.00	1.0	10	10.00	E	\$111.64	incl. in rate	incl. in rate	\$1,116.40
Active	1.00	1.0	10	10.00	L	\$72.07	incl. in rate	incl. in rate	\$720.72
	Active Active Active Active Active	Active 1.00 Active 1.00 Active 1.00 Active 1.00 Active 1.00 Active 1.00	Active 1.00 1.0	Active 1.00 1.0 10 Active 1.00 1.0 10 Active 1.00 1.0 10 Active 1.00 1.0 10 Active 1.00 1.0 10	Active 1.00 1.0 10 10.00 Active 1.00 1.0 10 10.00	Active 1.00 1.0 10 10.00 L Active 1.00 1.0 10 10.00 L Active 1.00 1.0 10 10.00 L Active 1.00 1.0 10 10.00 E Active 1.00 1.0 10 10.00 E	Active 1.00 1.0 10 10.00 L \$61.92 Active 1.00 1.0 10 10.00 L \$50.38 Active 1.00 1.0 10 10.00 L \$71.39 Active 1.00 1.0 10 10.00 E \$64.23 Active 1.00 1.0 10 10.00 E \$111.64	Active 1.00 1.0 10 10.00 L \$61.92 incl. in rate Active 1.00 1.0 10 10.00 L \$50.38 incl. in rate Active 1.00 1.0 10 10.00 L \$71.39 incl. in rate Active 1.00 1.0 10 10.00 E \$64.23 incl. in rate Active 1.00 1.0 10 10.00 E \$111.64 incl. in rate	Active 1.00 1.0 10 10.00 L \$61.92 incl. in rate incl. in rate Active 1.00 1.0 10 10.00 L \$50.38 incl. in rate incl. in rate Active 1.00 1.0 10 10.00 L \$71.39 incl. in rate incl. in rate Active 1.00 1.0 10 10.00 E \$64.23 incl. in rate incl. in rate Active 1.00 1.0 10 10.00 E \$111.64 incl. in rate incl. in rate

Labor Hours	40	TOTAL LABOR	\$2,557.61
Equipment Hours	20	TOTAL EQUIPMENT	\$1,758.70

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$175.87	\$175.87

SUBCONTRACT COSTS					
Description	Quantity Units	Notes / Company	Unit Price		Contract or Quote Amount
Forklift crew, all-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity, weekly use	0.20 week	1.000	0.20	\$5,961.23	\$1,192.25
					\$0.00 \$0.00 \$0.00
				TOTAL SUBCONTRACTS	\$1,192.25

SUMMARY OF COSTS						
Labor Cost Material Cost Equipment Cost Subcontractors	\$2,557.61 Labor Bure \$175.87 Material Ta \$1,758.70 \$1,192.25	ax @	49.7% 7.75% 7.75%	\$0.00 \$13.63 \$136.30		\$2,557.61 \$189.50 \$1,895.00 \$1,192.25
DIRECT COST SUBTOTALS	\$5,684	_		\$150	DIRECT COST SUBTOTALS	
Additional Pay Item Notes :						

Assumed we need forklift because of work in the tunnel near sluice gate, based on RS Means, Utility removal, pipe, sewer/water, 8" diameter, remove, excludes excavation, B12Z Crew is formed of 2 laborers loading 1 truck with the crane for disposal based on daily production.

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.034	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Air Vent Pipe - 12" Dia. Sch 40 x560'	Group	: D03			
Quantity	:	30,250.00 LBS					
Daily Production	:	15,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.48 per LBS	Probable Low (Cost Parameter	17250	\$12,346	\$0.47
Total Cost	:	\$14,525	Probable High	Cost Parameter	12000	\$17,430	\$0.66

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Truck Driver (heavy)	Active	1.00	2.0	10	20.00	L	\$63.35	incl. in rate	incl. in rate	\$1,266.98
Laborer	Active	2.00	2.0	10	40.00	L	\$50.38	incl. in rate	incl. in rate	\$2,015.20
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.91	incl. in rate	incl. in rate	\$1,458.16
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$75.42	incl. in rate	incl. in rate	\$1,508.40
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	2.0	10	20.00	E	\$70.35	incl. in rate	incl. in rate	\$1,407.00
Steelworker	Active	2.00	2.0	10	40.00	L	\$72.07	incl. in rate	incl. in rate	\$2,882.88
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$53.10	incl. in rate	incl. in rate	\$1,061.94
				Labor Hours	140				TOTAL LABOR	\$8,685.16
				Equipment Hours	40			TO1	TAL EQUIPMENT	\$2,915.40

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$291.54		\$291.54
			_				
						TOTAL MATERIAL	\$291.54

SUBCONTRACT COSTS					
Description	Quantity Units	Notes / Company	Unit Price		Contract or Quote Amount
Forklift crew, all-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity, weekly use	0.40 week	1.000	0.40	\$5,961.23	\$2,384.49
				TOTAL SUBCONTRACTS	\$2,384.49

\$8,685.16	Labor Burden @	49.7%	\$0.00		\$8,6
\$291.54	Material Tax @	7.75%	\$22.59		\$3
\$2,915.40	Equipment Tax @	7.75%	\$225.94		\$3,1
\$2,384.49					\$2,3
\$14,277		•	\$249	DIRECT COST SUBTOTALS	\$
				_	_
	\$291.54 \$2,915.40 \$2,384.49	\$8,685.16 Labor Burden @ \$291.54 Material Tax @ \$2,915.40 \$2,384.49 \$14,277	\$291.54 Material Tax @ 7.75% \$2,915.40 Equipment Tax @ 7.75% \$2,384.49	\$291.54 Material Tax @ 7.75% \$22.59 \$2.915.40 Equipment Tax @ 7.75% \$225.94 \$2.384.49	\$291.54 Material Tax @ 7.75% \$22.59 \$2,915.40 Equipment Tax @ 7.75% \$225.94 \$2,384.49

Assumed we need forklift because of work in the tunnel from gate to outlet works, based on RS Means, Utility removal, pipe, sewer/water, 12* diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B6.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.038	Project	: KRRP - Iron Gate			
		Remove and Dispose of Power Cable and 4" Conduit from Penstock Structure		D05			
Description	:		Group	:			
Quantity	:	800.00 LF	_ '				
Daily Production	:	400.00 LF per 10 hour shift	Project #	: 4			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	LF per	Total Cost	Unit Price Per LF
Unit Price	:	\$16.95 per LF	Probable Low Co	ost Parameter	460	\$11,526	\$16
Total Cost	:	\$13,560	Probable High Co	ost Parameter	340	\$15.594	\$22

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours	-	Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	2.0	10	20.00	L	\$51.95	incl. in rate	incl. in rate	\$1,039.06
Electrician	Active	4.00	2.0	10	80.00	L	\$49.75	incl. in rate	incl. in rate	\$3,980.24
Laborer	Active	2.00	2.0	10	40.00	L	\$50.38	incl. in rate	incl. in rate	\$2,015.20
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	2.0	10	40.00	E	\$111.64	incl. in rate	incl. in rate	\$4,465.60
Truck Driver (heavy)	Active	1.00	2.0	10	20.00	L	\$63.35	incl. in rate	incl. in rate	\$1,266.98
				Labor Hours	160				TOTAL LABOR	\$8,301.48
				Equipment Hours	40			TOT	AL EQUIPMENT	\$4,465.60

MATERIAL COSTS										
Description	Item	Order	Conversion	Order	Order	Material				
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost				
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$415.07	\$415.07				

TOTAL MATERIAL \$415.07

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$8,301.48	Labor Burden @	49.7%	\$0.00		\$8,301.48
Material Cost	\$415.07	Material Tax @	7.75%	\$32.17		\$447.24
Equipment Cost	\$4,465.60	Equipment Tax @	7.75%	\$346.08		\$4,811.68
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$13,182			\$378	DIRECT COST SUBTOTALS	\$13,560
Additional Pay Item Notes :						_
Based on RS Means:26050510- A	Armored cable, (BX), #8, 3	wire, average 50' runs, electric	cal demolition, remove we use	crew Elec2 and 26	050510 -Conduit, rigid galvanized steel, 4" to 6" diameter, electrical	

Based on RS Means:26050510- Armored cable, (BX), #8, 3 wire, average 50' runs, electrical demolition, remove we use crew Elec2 and 26050510 -Conduit, rigid galvanized steel, 4" to 6" diameter, electrical demolition, remove conduit to 10' high, including fittings & hangers

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Iron Gate Description vn to spring-line of turbine Quantity
Daily Production
Work Days
Unit Price
Total Cost Project # : 4
Estimator : Eric Jones
Probable Low Cost Parameter 133.00 cy per 39.1 D \$156.26 per cy Days cy per 146.3 Total Cost \$731,307 \$975,076 Unit Price Per cy \$160.66 \$812,563 Probable High Cost Parameter 106.4 \$214.22

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	39.1	10	391.00	L	\$53.10	incl. in rate	incl. in rate	\$20,760.93
Laborer	Active	3.00	39.1	10	1,173.00	L	\$50.38	incl. in rate	incl. in rate	\$59,095.74
Equipment Operator (medium)	Active	2.00	39.1	10	782.00	L	\$72.91	incl. in rate	incl. in rate	\$57,014.06
Truck Driver (heavy)	Active	1.00	24.3	10	242.50	L	\$63.35	incl. in rate	incl. in rate	\$15,362.13
Air Compressor 900 cfm	Active	1.00	39.1	10	391.00	E	\$38.87	incl. in rate	incl. in rate	\$15,197.75
Air Tool, Chipping Hammer	Active	2.00	39.1	10	782.00	E	\$1.64	incl. in rate	incl. in rate	\$1,281.72
Generator, Small Generator, 10 - 15 kW	Active	1.00	39.1	10	391.00	E	\$7.04	incl. in rate	incl. in rate	\$2,752.64
Hydraulic Excavator (5.0cy)	Active	1.00	39.1	10	391.00	E	\$274.63	incl. in rate	incl. in rate	\$107,380.33
Hydraulic Excavator (2.5cy)	Active	1.00	39.1	10	391.00	E	\$203.63	incl. in rate	incl. in rate	\$79,619.33
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	39.1	10	391.00	E	\$62.72	incl. in rate	incl. in rate	\$24,523.52
Hydraulic Thumbs/Shear Attachment	Active	1.00	39.1	10	391.00	E	\$16.39	incl. in rate	incl. in rate	\$6,408.49
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	39.1	10	391.00	E	\$89.29	incl. in rate	incl. in rate	\$34,912.39
Orilling and Blasting Operator	Active	3.00	39.1	10	1,173.00	L	\$48.70	incl. in rate	incl. in rate	\$57,121.19
Air Track Drill 4"	Active	1.00	39.1	10	391.00	Е	\$212.49	incl. in rate	incl. in rate	\$83,083.59
Hydraulic Crane (50tn)	Active	1.00	9.8	10	97.75	Е	\$134.32	incl. in rate	incl. in rate	\$13,129.78
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	24.3	10	242.50	E	\$174.47	incl. in rate	incl. in rate	\$42,308.98
				Labor Hours	3,762				TOTAL LABOR	\$209,354.05
			F	quipment Hours	4,250				TOTAL EQUIPMENT	\$410,598.52

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
Consumables (5% labor)	1.00	LS	1.000	1.00	\$10,467.70	\$10,467.70	
Blasting Material	16,400.00	CY	1.050	17,220.00	\$5.56	\$95,777.64	
Drill Bit Wear Allowance (20% of Drilling Eq)	1.00	LS	1.000	1.00	\$11,424.24	\$11,424.24	

TOTAL MATERIAL \$117,669.58

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1	AL	Allowance	\$20,000.00		\$20,000.00
Hauling Disposal Cost	20.00	Loads	150lbs per CY	\$200.00		\$4,000.00
Selective demolition, torch cutting, steel, 1" thick plate	1.00	AL	Allowance	10,000.00		\$10,000.00
					<u>.</u>	
					TOTAL SUBCONTRACTS	\$34,000.00

SUMMARY OF COSTS				
Labor Cost	\$209,354.05 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.		\$209,354.05
Material Cost	\$117,669.58 Material Tax @	7.75% \$9,119.39		\$126,788.97
Equipment Cost	\$410,598.52 Equipment Tax @	7.75% \$31,821.39		\$442,419.90
Subcontractors	\$34,000.00			\$34,000.00
DIRECT COST SUBTOTALS	\$771,622	\$40,941	DIRECT COST SUBTOTALS	\$812,563
Additional Pay Item Notes :				

No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) Haul Notes Excavator Loading Production per shift 5,200.00 CV per Hour 60% CY Bucket Size 8320 Buckets Per Hour 19.2 # of Excavators 1 CY per Hour (5 CY Bucket) 34 Swell Factor 2.50 Bulk CY 14 Haul Vehicle 60% Capacity (2 tons per CY) 1.00 # of Haul Vehicles 34 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) CY Per Hour Ideal Production Per 8 Hour Shift Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Efficient Compared to Ideal Production 36% Inefficiencies Compared to Ideal Production Return Speed (Unloaded MPH) Haul Distance (Miles) Cyce Time Load Time (Load Time Minutes / 60mins) Haul Time (Haul Distance / Haul Speed) 0.24 Hydraulic Hammer CY per Hour Dump Time (Dump Time Minutes / 60 Mins) 0.05 # of Hammers 13.30 0.08 CV per Hour 0.48 CV per Hour Back Check 80% 32CV per HR per 8hr shift (Ideal prod) 0.56 Efficient Compared to Ideal Production 433 Inefficiencies Compared to Ideal Production Return Time (Haul Distance / Return Speed 34.28571429 Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT) 32 0.415625 Actual Hours Per Cycle (Hours er Cycle / Editor) Number of Cycles (Bulk CY/ (Hauf Vehicle Cap X # of Hauf Vehicles) Total Number of Hauf Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Reinber of Cycles) Number of Hauf Hours (Actual Cycle Hours X Number of Cycles) Number of Hauf Days 36% 64%

4.039 Remove Powerhouse Concrete down to spring-line of turbine Details

This estimate presents that the power house concrete will be demolished by using a combination of blasting and concrete breakers/ Crushers. A CPM 100 crusher attachment with a magnet option will be used to help sort reinforcement for the demolished concrete. . It is expected that the power house concrete will have dense reinforcement and other embedded items and the efficiency has been reduced to account for the time it will take for extra processing time. Steel cutting and a crane have been added for .25 of the time to account for removing the draft tube as the concrete demolition progresses.

MATERIAL COSTS

TOTAL SUBCONTRACTS

\$17,335.73

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.040	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Turbine Unit	Group	: D03			
Quantity	:	344,058.00 LBS	=				
Daily Production	:	28,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	12.3 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.47 per LBS	Probable Low Co	ost Parameter	32200	\$138,564	\$0
Total Cost	:	\$163,016	Probable High C	ost Parameter	23800	\$187,469	\$1

Labor Foreman	ldle		Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Labor Foreman		crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
	Active	1.00	12.3	10	123.00	L	\$53.10	incl. in rate	incl. in rate	\$6,530.93
Laborer	Active	3.00	12.3	10	369.00	L	\$50.38	incl. in rate	incl. in rate	\$18,590.22
Electrician Foreman	Active	1.00	12.3	10	123.00	L	\$51.95	incl. in rate	incl. in rate	\$6,390.22
Electrician	Active	2.00	12.3	10	246.00	L	\$49.75	incl. in rate	incl. in rate	\$12,239.24
Steelworker	Active	2.00	12.3	10	246.00	L	\$72.07	incl. in rate	incl. in rate	\$17,729.71
Millwright	Active	2.00	12.3	10	246.00	L	\$76.41	incl. in rate	incl. in rate	\$18,795.88
Equipment Operator (medium)	Active	1.00	12.3	10	123.00	L	\$72.91	incl. in rate	incl. in rate	\$8,967.68
Equipment Operator (crane)	Active	2.00	12.3	10	246.00	L	\$75.25	incl. in rate	incl. in rate	\$18,511.75
Hydraulic Crane (50tn)	Active	1.00	12.3	10	123.00	E	\$134.32	incl. in rate	incl. in rate	\$16,521.36
oader, FE Rubber Tire (3.5cy)	Active	1.00	12.3	10	123.00	E	\$64.23	incl. in rate	incl. in rate	\$7,900.29

Labor Hours	1722	TOTAL LABOR	\$107,755.63
Equipment Hours	246	TOTAL EQUIPMENT	\$24,421.65

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$10,775.56		\$10,775.56
						TOTAL MATERIAL	\$10,775.56

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Uni	t	Contract or Quote
			Company	Pric	e	Amount
Hazardous waste cleanup/pickup/disposal, solid	17.20	ton	1.000	17.20	\$595.00	\$10,235.73
Hauling Disposal Cost	9.00	Loads	20 tons a load		\$600.00	\$5,400.00
plate (assumption)	2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00

SUMMARY OF COSTS					
Labor Cost	\$107,755.63 L	Labor Burden @	49.7%	\$0.00	
Material Cost	\$10,775.56 N	Material Tax @	7.75%	\$835.11	
Equipment Cost	\$24,421.65 E	Equipment Tax @	7.75%	\$1,892.68	
Subcontractors	\$17,335.73				
DIRECT COST SUBTOTALS	\$160,289			\$2,728	DIRECT COST SUBTOTALS
Additional Pay Item Notes :					·

Working crew will disconnect power and take care of the temporary electrical power they need at the site. Then the crew will open the engine side panels, and remove the nacelle access panels. Disconnect the engine thermocouple leads at the terminal board. Before disconnecting any lines all fuel, oil, and hydraulic fluid valves are closed. Plug all lines as they are disconnected to prevent entrance of foreign material. Remove the clamps securing the bleed-air ducts at the firewall. Then, disconnect the electrical connector plugs, engine breather and vent lines, and fuel, oil, and hydraulic lines. Disconnect the engine power lever and propeller control rods or cables. Remove the covers from the lift points, attach the sling, and remove slack from the cables using a suitable hoist. The sling must be adjusted to position. Remove the engine mount boits. The engine is ready to be removed. Move the engine forward, out of the nacelle structure, until it clears the and then lower into position on the stand, and secure it prior to removing the engine sling. The crew will then cut it into pieces the big parts for disposal. Per load price is more expensive due to potential permits or more smaller loads due to haul route restrictions.

 PAY ITEM INFORMATION

 PAY ITEM NUMBER
 4.041
 Project
 : KRRP - Iron Gate

 Description
 :
 Remove and Dispose of Draft Tube Bulkheads
 Group
 : D07

 Quantity
 :
 16,500.00 | LBS |
 Project # : 4

 Daily Production
 :
 25,000.00 | LBS per | 10 | hour shift
 Project # : 4

 Work Days
 :
 0.7 | Days
 Estimator : Mihaela Tomulescu
 LBS per | Total Cost | Unit Price Per LBS |

 Unit Price
 :
 \$0.46 per LBS
 Probable Low Cost Parameter
 28750 | \$6,486 | \$0.45 |

 Total Cost
 :
 \$7,630 | Probable High Cost Parameter
 20000 | \$9,157 | \$0.63 |

Description	Active	# in	Days	Hours	Total	L/E	Hourly Rate	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours			Cost	Rate	Cost
Labor Foreman	Active	1.00	0.7	10	7.00	L	\$53.10	incl. in rate	incl. in rate	\$371.68
Laborer	Active	3.00	0.7	10	21.00	L	\$50.38	incl. in rate	incl. in rate	\$1,057.98
Steelworker	Active	3.00	0.7	10	21.00	L	\$72.07	incl. in rate	incl. in rate	\$1,513.51
Equipment Operator (crane)	Active	1.00	0.7	10	7.00	L	\$75.25	incl. in rate	incl. in rate	\$526.76
Equipment Operator (medium)	Active	1.00	0.7	10	7.00	L	\$72.91	incl. in rate	incl. in rate	\$510.36
Crawler Crane (130tn)	Active	1.00	0.7	10	7.00	Е	\$258.66	incl. in rate	incl. in rate	\$1,810.62
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.7	10	7.00	Е	\$75.42	incl. in rate	incl. in rate	\$527.94
Oxygen and Acetylene Torches	Active	3.00	0.7	10	21.00	E	\$0.47	incl. in rate	incl. in rate	\$9.87
				Labor Hours	63				TOTAL LABOR	\$3,980.28
				Equipment Hours	35			TO	TAL EQUIPMENT	\$2,348.43

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$398.03		\$398.03
						TOTAL MATERIAL	\$398.03

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Haul off of material	0.83	ton Loads	1.000 20 tons a load	0.83	\$595.00 \$200.00	\$490.8 \$200.0
Tadi on or material	1.00	20000	20 tollo di lodo		\$255.00	φ200.0

\$3,980.28	Labor Burden @	49.7%	\$0.00		\$3,980.28
\$398.03	Material Tax @	7.75%	\$30.85		\$428.88
\$2,348.43	Equipment Tax @	7.75%	\$182.00		\$2,530.43
\$690.88					\$690.88
\$7,418		-	\$213	DIRECT COST SUBTOTALS	\$7,630
	\$398.03 \$2,348.43 \$690.88	<u></u>	\$398.03 Material Tax @ 7.75% \$2,348.43 Equipment Tax @ 7.75%	\$398.03 Material Tax @ 7.75% \$30.85 \$2,348.43 Equipment Tax @ 7.75% \$182.00	\$398.03 Material Tax @ 7.75% \$30.85 \$2,348.43 Equipment Tax @ 7.75% \$182.00 \$690.88

\$2,268.61

Total Cost	: \$12,65	9		F	robable High	Cost Parame	eter	18750	\$15,824	\$0.75
REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$53.10	incl. in rate	incl. in rate	\$53
Laborer	Active	3.00	1.0	10	30.00	L	\$50.38	incl. in rate	incl. in rate	\$1,51
Steelworker	Active	3.00	1.0	10	30.00	L	\$72.07	incl. in rate	incl. in rate	\$2,16
Equipment Operator (crane)	Active	1.00	1.0	10	10.00	L	\$75.25	incl. in rate	incl. in rate	\$75
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.91	incl. in rate	incl. in rate	\$72
Crawler Crane (130tn)	Active	1.00	1.0	10	10.00	E	\$258.66	incl. in rate	incl. in rate	\$2,58
_oader, FE Rubber Tire (5.25cy)	Active	1.00	1.0	10	10.00	Е	\$75.42	incl. in rate	incl. in rate	\$75
Oxygen and Acetylene Torches	Active	3.00	1.0	10	30.00	E	\$0.47	incl. in rate	incl. in rate	\$:
				Labor Hours	90				TOTAL LABOR	\$5,68
				Equipment Hours	50			TO	TAL EQUIPMENT	\$3,35

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$568.61	\$568.61
Selective demolition, torch cutting, steel, 1" thick plate (assumption)	2,000.00	LF	1.000	2,000.00	\$0.85	\$1,700.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum	1.20	ton	1.000	1.20	\$ 595.00	\$714.00
Haul off of material	1.00	Loads	20 tons a load	1120	\$200.00	\$200.00
					TOTAL SUBC	ONTRACTS \$914.00

SUMMARY OF COSTS					
Labor Cost	\$5,686.12 Labor Burden @	49.7%	\$0.00		\$5,686.12
Material Cost	\$2,268.61 Material Tax @	7.75%	\$175.82		\$2,444.43
Equipment Cost	\$3,354.90 Equipment Tax @	7.75%	\$260.00		\$3,614.90
Subcontractors	\$914.00				\$914.00
DIRECT COST SUBTOTALS	\$12,224	•	\$436	DIRECT COST SUBTOTALS	\$12,659
Additional Pay Item Notes :					

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.043	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Governor	Group : D04			
Quantity	:	20,310.00 LBS				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulesc	u LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.40 per LBS	Probable Low Cost Parameter	28750	\$6,922	\$0.39
Total Cost	:	\$8,144	Probable High Cost Parameter	20000	\$9,772	\$0.55

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Laborer	Active	3.00	0.8	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Steelworker	Active	3.00	0.8	10	24.00	L	\$72.07	incl. in rate	incl. in rate	\$1,729.73
Equipment Operator (medium)	Active	2.00	0.8	10	16.00	L	\$72.91	incl. in rate	incl. in rate	\$1,166.53
Hydraulic Excavator (2.5cy)	Active	1.00	0.8	10	8.00	E	\$203.63	incl. in rate	incl. in rate	\$1,629.04
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.8	10	8.00	E	\$64.23	incl. in rate	incl. in rate	\$513.84
Oxygen and Acetylene Torches	Active	3.00	0.8	10	24.00	Е	\$0.47	incl. in rate	incl. in rate	\$11.28
				Labor Hours	72				TOTAL LABOR	\$4,530.15
				Equipment Hours	40			TO	TAL EQUIPMENT	\$2,154.16

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$453.02		\$453.02
						TOTAL MATERIAL	\$453.02

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
bulk material, maximum	1.02	ton	1.000	1.02	\$595.00	\$604.22
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$804.2

\$4,530.15 Labor Burden @	49.7%	\$0.00		\$4,530.15
\$453.02 Material Tax @	7.75%	\$35.11		\$488.12
\$2,154.16 Equipment Tax @	7.75%	\$166.95		\$2,321.11
\$804.22				\$804.22
\$7,942		\$202	DIRECT COST SUBTOTALS	\$8,144
	\$453.02 Material Tax @ \$2,154.16 Equipment Tax @ \$804.22	\$453.02 Material Tax @ 7.75% \$2,154.16 Equipment Tax @ 7.75% \$804.22	\$453.02 Material Tax @ 7.75% \$35.11 \$2,154.16 Equipment Tax @ 7.75% \$166.95	\$453.02 Material Tax @ 7.75% \$35.11 \$2,154.16 Equipment Tax @ 7.75% \$166.95 \$804.22

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.39
Laborer	Active	3.00	0.4	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
Steelworker	Active	3.00	0.4	10	12.00	L	\$72.07	incl. in rate	incl. in rate	\$864.86
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	4.00	E	\$203.63	incl. in rate	incl. in rate	\$814.52
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$64.23	incl. in rate	incl. in rate	\$256.92
Oxygen and Acetylene Torches	Active	3.00	0.4	10	12.00	E	\$0.47	incl. in rate	incl. in rate	\$5.64
Chygon and Alectylone Totalics	Addre	3.00	3		.2.55	_	40. -т	d. III ac	no. n. rate	ψ0.04
				Labor Hours	36				TOTAL LABOR	\$2,265.08

Quantity 1.00	Unit LS	Factor / Waste 1.000	Quantity 1.00	Price \$113.25	Cost	
1.00	LS	1,000	1.00	£440.0E		
		1.000	1.00	\$113.25		\$113.25
						\$113.2
					TOTAL MATERIAL	TOTAL MATERIAL

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Haul off of material	4.59 1.00	ton Loads	1.000 20 tons a load	4.59	\$595.00 \$200.00	\$2,731.65 \$200.00
					TOTAL SUBCONTRACTS	\$2,931.65

SUMMARY OF COSTS						
Labor Cost	\$2,265.08 Lat	bor Burden @	49.7%	\$0.00		\$2,265.08
Material Cost	\$113.25 Ma	aterial Tax @	7.75%	\$8.78		\$122.03
Equipment Cost	\$1,077.08 Eq	uipment Tax @	7.75%	\$83.47		\$1,160.55
Subcontractors	\$2,931.65					\$2,931.65
DIRECT COST SUBTOTALS	\$6,387			\$92	DIRECT COST SUBTOTALS	\$6,479
Additional Pay Item Notes :						

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$53.10	incl. in rate	incl. in rate	\$53.10
Laborer	Active	3.00	0.1	10	3.00	L	\$50.38	incl. in rate	incl. in rate	\$151.14
Steelworker	Active	3.00	0.1	10	3.00	L	\$72.07	incl. in rate	incl. in rate	\$216.22
Equipment Operator (medium)	Active	2.00	0.1	10	2.00	L	\$72.91	incl. in rate	incl. in rate	\$145.82
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.00	E	\$203.63	incl. in rate	incl. in rate	\$203.63
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.00	E	\$64.23	incl. in rate	incl. in rate	\$64.23
Oxygen and Acetylene Torches	Active	3.00	0.1	10	3.00	E	\$0.47	incl. in rate	incl. in rate	\$1.41
Oxygen and Acetylene Torches	Active	3.00	0.1	10	3.00	Е	\$0.47	incl. in rate	incl. in rate	\$1.4
Oxygen and Acetylene Torches	Active	3.00	0.1	10 Labor Hours	3.00	E	\$0.47	incl. in rate	incl. in rate	\$1.41 \$566.27

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
nsumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$28.31	\$2

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Pric	e	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum	1.28	ton	1.000	1.28	\$595.00	\$763.98
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
					TOTAL SUBCO	NTRACTS \$963,98

SUMMARY OF COSTS						
Labor Cost	\$566.27	Labor Burden @	49.7%	\$0.00		\$566.27
Material Cost	\$28.31	Material Tax @	7.75%	\$2.19		\$30.51
Equipment Cost	\$269.27	Equipment Tax @	7.75%	\$20.87		\$290.14
Subcontractors	\$963.98					\$963.98
DIRECT COST SUBTOTALS	\$1,828	_		\$23	DIRECT COST SUBTOTALS	\$1,851
Additional Pay Item Notes :						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.046	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Plant Water and Fire Protection System	Group : D05			
Quantity	:	9,182.00 LBS				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.4 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.71 per LBS	Probable Low Cost Parameter	27500	\$5,831	\$0.73
Total Cost	:	\$6,479	Probable High Cost Parameter	20000	\$7,775	\$0.97

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.39
Laborer	Active	3.00	0.4	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
Steelworker	Active	3.00	0.4	10	12.00	L	\$72.07	incl. in rate	incl. in rate	\$864.86
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	4.00	E	\$203.63	incl. in rate	incl. in rate	\$814.52
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$64.23	incl. in rate	incl. in rate	\$256.92
Oxygen and Acetylene Torches	Active	3.00	0.4	10	12.00	E	\$0.47	incl. in rate	incl. in rate	\$5.64
				Labor Hours	36				TOTAL LABOR	\$2,265.08
				Labor Hours	30				TOTAL LABOR	ΨΞ,Ξ03.00

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$113.25	\$113.2

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
pickap, baik material, maximum	4.59	ton	1.000	4.59	\$595.00	\$2,731.65
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
					TOTAL SUBC	ONTRACTS

SUMMARY OF COSTS						
Labor Cost	\$2,265.08	Labor Burden @	49.7%	\$0.00		\$2,265.08
Material Cost	\$113.25	Material Tax @	7.75%	\$8.78		\$122.03
Equipment Cost	\$1,077.08	Equipment Tax @	7.75%	\$83.47		\$1,160.55
Subcontractors	\$2,931.65					\$2,931.65
DIRECT COST SUBTOTALS	\$6,387			\$92	DIRECT COST SUBTOTALS	\$6,479
Additional Pay Item Notes :						
-						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.047	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Oil Sump Pumps	Group	: D05			
Quantity	:	2,000.00 LBS					
Daily Production	:	25,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.84 per LBS	Probable Low	Cost Parameter	27500	\$1,514	\$0.86
Total Cost	:	\$1,682	Probable High	Cost Parameter	20000	\$2,018	\$1.15

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$53.10	incl. in rate	incl. in rate	\$53.10
Laborer	Active	3.00	0.1	10	3.00	L	\$50.38	incl. in rate	incl. in rate	\$151.14
Steelworker	Active	3.00	0.1	10	3.00	L	\$72.07	incl. in rate	incl. in rate	\$216.22
Equipment Operator (medium)	Active	2.00	0.1	10	2.00	L	\$72.91	incl. in rate	incl. in rate	\$145.82
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.00	E	\$203.63	incl. in rate	incl. in rate	\$203.63
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.00	E	\$64.23	incl. in rate	incl. in rate	\$64.23
Oxygen and Acetylene Torches	Active	3.00	0.1	10	3.00	E	\$0.47	incl. in rate	incl. in rate	\$1.41
				Labor Hours	9				TOTAL LABOR	\$566.27

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$28.31	\$28.3

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	1.00	ton	1.000	1.00	\$595.00	\$595.0
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
					TOTAL SUBC	ONTRACTS \$795

SUMMARY OF COSTS						
Labor Cost	\$566.27	Labor Burden @	49.7%	\$0.00		\$566.27
Material Cost	\$28.31	Material Tax @	7.75%	\$2.19		\$30.51
Equipment Cost	\$269.27	Equipment Tax @	7.75%	\$20.87		\$290.14
Subcontractors	\$795.00					\$795.00
DIRECT COST SUBTOTALS	\$1,659			\$23	DIRECT COST SUBTOTALS	\$1,682
Additional Pay Item Notes :						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.048	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Pumps	Group : D03			
Quantity	:	22,000.00 LBS				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.9 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.68 per LBS	Probable Low Cost Parameter	27500	\$13,489	\$0.70
Total Cost	:	\$14,988	Probable High Cost Parameter	20000	\$17,986	\$0.93

CREW COSTS	•									
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.9	10	9.00	L	\$53.10	incl. in rate	incl. in rate	\$477.87
Laborer	Active	3.00	0.9	10	27.00	L	\$50.38	incl. in rate	incl. in rate	\$1,360.26
Steelworker	Active	3.00	0.9	10	27.00	L	\$72.07	incl. in rate	incl. in rate	\$1,945.94
Equipment Operator (medium)	Active	2.00	0.9	10	18.00	L	\$72.91	incl. in rate	incl. in rate	\$1,312.34
Hydraulic Excavator (2.5cy)	Active	1.00	0.9	10	9.00	E	\$203.63	incl. in rate	incl. in rate	\$1,832.67
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.9	10	9.00	E	\$64.23	incl. in rate	incl. in rate	\$578.07
				Labor Hours	81				TOTAL LABOR	\$5,096.42
				Equipment Hours	18			TO:	TAL EQUIPMENT	\$2,410.74

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$509.64		\$509.64
						TOTAL MATERIAL	\$509.64

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
bulk material, maximum	11.00	ton	1.000	11.00	\$595.00	\$6,545.0
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.0
					TOTAL SUBCO	ONTRACTS \$6,74

SUMMARY OF COSTS						
Labor Cost	\$5,096.42	Labor Burden @	49.7%	\$0.00		\$5,096.42
Material Cost	\$509.64	Material Tax @	7.75%	\$39.50		\$549.14
Equipment Cost	\$2,410.74	Equipment Tax @	7.75%	\$186.83		\$2,597.57
Subcontractors	\$6,745.00					\$6,745.00
DIRECT COST SUBTOTALS	\$14,762			\$226	DIRECT COST SUBTOTALS	\$14,988
Additional Pay Item Notes :						-

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate Project Group Description Quantity
Daily Production
Work Days
Unit Price Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter LBS per 27500 Total Cost \$11,951 Unit Price Per LBS \$0.71 Total Cost \$13,278 Probable High Cost Parameter 20000 \$15,934 \$0.94

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Laborer	Active	3.00	0.8	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Steelworker	Active	3.00	0.8	10	24.00	L	\$72.07	incl. in rate	incl. in rate	\$1,729.73
Equipment Operator (medium)	Active	2.00	0.8	10	16.00	L	\$72.91	incl. in rate	incl. in rate	\$1,166.53
Hydraulic Excavator (2.5cy)	Active	1.00	0.8	10	8.00	E	\$203.63	incl. in rate	incl. in rate	\$1,629.04
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.8	10	8.00	Е	\$64.23	incl. in rate	incl. in rate	\$513.84
Oxygen and Acetylene Torches	Active	3.00	0.8	10	24.00	E	\$0.47	incl. in rate	incl. in rate	\$11.28
				Labor Hours	72				TOTAL LABOR	\$4,530.15
				Equipment Hours	40			TO:	TAL EQUIPMENT	\$2,154.16

MATERIAL COSTS								
Description	Item	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$453.02			\$453.02
						TOTAL MATERIAL		\$453.02

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum							
	9.65	ton	1.000	9.65	\$595.00		\$5,739.07
Haul off of material	1.00	Loads	20 tons a load		\$200.00		\$200.00
						_	
					т	OTAL SUBCONTRACTS	\$5,939.07

SUMMARY OF COSTS						
Labor Cost	\$4,530.15 Labor But	urden @	49.7%	\$0.00		\$4,530.15
Material Cost	\$453.02 Material 1	Tax @	7.75%	\$35.11		\$488.12
Equipment Cost	\$2,154.16 Equipmer	ent Tax @	7.75%	\$166.95		\$2,321.11
Subcontractors	\$5,939.07					\$5,939.07
DIRECT COST SUBTOTALS	\$13,076	<u>-</u>		\$202	DIRECT COST SUBTOTALS	\$13,278
Additional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.050	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Unwatering Piping	Group	: D05			
Quantity	:	19,291.00 LBS	 '				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.68 per LBS	Probable Low C	ost Parameter	27500	\$11,731	\$0.69
Total Cost	:	\$13,034	Probable High C	ost Parameter	21250	\$14,990	\$0.89

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Laborer	Active	3.00	0.8	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Steelworker	Active	3.00	0.8	10	24.00	L	\$72.07	incl. in rate	incl. in rate	\$1,729.73
Equipment Operator (medium)	Active	2.00	0.8	10	16.00	L	\$72.91	incl. in rate	incl. in rate	\$1,166.53
Hydraulic Excavator (2.5cy)	Active	1.00	0.8	10	8.00	E	\$203.63	incl. in rate	incl. in rate	\$1,629.04
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.8	10	8.00	Е	\$64.23	incl. in rate	incl. in rate	\$513.84
							\$0.47	incl. in rate	incl. in rate	\$11.28
Outgon and Apptilanc Toroboo	Antino	2.00	0.0	10	24.00					
Oxygen and Acetylene Torches	Active	3.00	0.8	10	24.00	E	\$0.47	inci. iri fate	inci. In rate	\$11.21
Oxygen and Acetylene Torches	Active	3.00	0.8	10 Labor Hours	24.00 72	E	\$0.47	ilici. III rate	TOTAL LABOR	\$4,530.15

Description	Item	Order	Conversion	Order	Order	Mate	
	Quantity	Unit	Factor / Waste	Quantity	Price	Co	st
onsumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$226.51		\$226.5

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid						
pickup, bulk material, maximum	9.65	ton	1.000	9.65	\$595.00	\$5,739.07
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
					TOTAL S	SUBCONTRACTS \$5,939.07

SUMMARY OF COSTS				
Labor Cost	\$4,530.15 Labor Burden @	49.7% \$0.00		\$4,530.15
Material Cost	\$226.51 Material Tax @	7.75% \$17.55		\$244.06
Equipment Cost	\$2,154.16 Equipment Tax @	7.75% \$166.95		\$2,321.11
Subcontractors	\$5,939.07			\$5,939.07
DIRECT COST SUBTOTALS	\$12,850	\$185	DIRECT COST SUBTOTALS	\$13,034
Additional Pay Item Notes :				

\$113.25

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER Project Group : KRRP - Iron Gate 0.00000 LBS per 10 hour shift \$0.69 per LBS\$ Description Quantity
Daily Production 9,518.00 LBS 25,000.00 LBS per 0.4 Estimator : Mihaela Tomulescu Probable Low Cost Parameter Work Days Unit Price LBS per 27500 Total Cost \$5,916 Unit Price Per LBS \$0.71 Probable High Cost Parameter \$7,559 **Total Cost** 21250 \$0.91

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.39
Laborer	Active	3.00	0.4	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
Steelworker	Active	3.00	0.4	10	12.00	L	\$72.07	incl. in rate	incl. in rate	\$864.86
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	4.00	E	\$203.63	incl. in rate	incl. in rate	\$814.52
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$64.23	incl. in rate	incl. in rate	\$256.92

 Labor Hours
 36
 TOTAL LABOR
 \$2,265.08

 Equipment Hours
 8
 TOTAL EQUIPMENT
 \$1,071.44

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$113.25	\$113.25

SUBCONTRACT COSTS Quantity Units Contract or Quote Price Company Amount Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum 4.76 1.000 4.76 \$595.00 \$2,831.61 Loads 20 tons a load \$200.00 \$200.00 TOTAL SUBCONTRACTS \$3,031.61

SUMMARY OF COSTS						
Labor Cost	\$2,265.08	Labor Burden @	49.7%	\$0.00		\$2,265.08
Material Cost	\$113.25	Material Tax @	7.75%	\$8.78		\$122.03
Equipment Cost	\$1,071.44	Equipment Tax @	7.75%	\$83.04		\$1,154.48
Subcontractors	\$3,031.61					\$3,031.61
DIRECT COST SUBTOTALS	\$6,481		•	\$92	DIRECT COST SUBTOTALS	\$6,573
Additional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.052	Project	: KRRP - Iron Gate			
				D05			
Description	:	Remove and Dispose of Transformer Oil and Fire Protection Pipes	Group	:			
Quantity	:	9,182.00 LBS					
Daily Production	:	25,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.94 per LBS	Probable Low	Cost Parameter	26250	\$8,202	\$1.02
Total Cost	:	\$8,633	Probable High	Cost Parameter	22500	\$9,497	\$1.18

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.39
Laborer	Active	3.00	0.4	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
Steelworker	Active	3.00	0.4	10	12.00	L	\$72.07	incl. in rate	incl. in rate	\$864.86
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	4.00	E	\$203.63	incl. in rate	incl. in rate	\$814.52
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	Е	\$64.23	incl. in rate	incl. in rate	\$256.92
				Labor Hours	36				TOTAL LABOR	\$2,265.08
				Equipment Hours	8			TO	TAL EQUIPMENT	\$1,071.44

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$113.25	\$113.2
						\$0.0
						\$0.0
						\$0.0
						\$0.0

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	4.59	ton	1.000	4.59	\$595.00	\$2,731.65
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment	8.00	hour	RSM Means 028120101260		\$270.00	\$2,160.00
					* ***	
Haul off of material	1.00	Loads	20 tons a load		\$200.00	\$200.00
					TOTAL SUBCONTRA	CTS \$5,091.65

SUMMARY OF COSTS						
Labor Cost	\$2,265.08	Labor Burden @	49.7%	\$0.00		\$2,265.08
Material Cost	\$113.25	Material Tax @	7.75%	\$8.78		\$122.03
Equipment Cost	\$1,071.44	Equipment Tax @	7.75%	\$83.04		\$1,154.48
Subcontractors	\$5,091.65					\$5,091.65
DIRECT COST SUBTOTALS	\$8,541			\$92	DIRECT COST SUBTOTALS	\$8,633
Additional Pay Item Notes :						

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	0.58	L	\$53.10	incl. in rate	incl. in rate	\$30.8
Laborer	Active	3.00	0.1	10	1.74	L	\$50.38	incl. in rate	incl. in rate	\$87.6
Steelworker	Active	3.00	0.1	10	1.74	L	\$72.07	incl. in rate	incl. in rate	\$125.
Equipment Operator (medium)	Active	2.00	0.1	10	1.16	L	\$72.91	incl. in rate	incl. in rate	\$84.
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	0.58	E	\$203.63	incl. in rate	incl. in rate	\$118.
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	0.58	E	\$64.23	incl. in rate	incl. in rate	\$37.
						_				
				Labor Hours	5.22				TOTAL LABOR	\$328
				Equipment Hours	1.16			TO.	TAL EQUIPMENT	\$155

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
sumables 5% labor (saw blades, drill bits, etc)						
	1.00	LS	1.000	1.00	\$16.42	\$1

	Unit	Notes /	Units	Quantity	Description
Amount	Price	Company			
					Hazardous waste cleanup/pickup/disposal, solid
\$431.38	\$0.73	1.000	ton	0.73	pickup, bulk material, maximum
\$200.00	\$200.00	20 tons a load	Loads	1.00	Haul off of material
<u> </u>					
	TOTAL SUBCONTRACTS				

SUMMARY OF COSTS						
Labor Cost		Labor Burden @	49.7%	\$0.00		\$328.44
Material Cost	\$16.42	Material Tax @	7.75%	\$1.27		\$17.69
Equipment Cost	\$155.36	Equipment Tax @	7.75%	\$12.04		\$167.40
Subcontractors	\$631.38					\$631.38
DIRECT COST SUBTOTALS	\$1,132	_		\$13	DIRECT COST SUBTOTALS	\$1,145
Additional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.053a	Project	: KRRP - Iron Gate			
Description	:	Remove & Dispose - Petroleum Products from Mechanical Equip.	Group	: D09			
Quantity	:	1,100.00 GAL					
Daily Production	:	5,000.00 GAL per 10 hour shift	Project #	: 4			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$2.72 per GAL	Probable Low	Cost Parameter	5250	\$2,846	\$3
Total Cost	:	\$2,996	Probable High	Cost Parameter	4500	\$3,296	\$3

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$53.10	incl. in rate	incl. in rate	\$106.19
Electrician	Active	1.00	0.2	10	2.00	L	\$49.75	incl. in rate	incl. in rate	\$99.51
Laborer	Active	5.00	0.2	10	10.00	L	\$50.38	incl. in rate	incl. in rate	\$503.80
Truck Driver (heavy)	Active	1.00	0.2	10	2.00	L	\$63.35	incl. in rate	incl. in rate	\$126.70
				Labor Hours	16				TOTAL LABOR	\$836.20
				Equipment Hours	0			то	TAL EQUIPMENT	\$0.00

MATERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material
2000 ipion	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	¢n ne

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, liquid					
pickup, vacuum truck, stainless steel tank, 5000					
gallons, minimum charge, 4 hours, 2 compartment	8.00	hour	RSM Means 028120101260	\$270.00	\$2,160.00
				TOTAL SUBCONTR	ACTS \$2,160.00

SUMMARY OF COSTS						
Labor Cost	\$836.20	Labor Burden @	49.7%	\$0.00		\$836.20
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$2,160.00					\$2,160.00
DIRECT COST SUBTOTALS	\$2.996	<u>-</u>		\$0	DIRECT COST SUBTOTALS	\$2.996

onal Pay Item Notes :

Petroleum-based products, ranging from fuel oil and hydraulic fluid to lubricating greases and oils, are found throughout every type of power generating plant or system. Lubrication supports bearings and moving parts in all sorts of equipment: pumps, conveyors, feeders, scrubbers, cranes, turbines, and more. A good oil/water separation system will result in a flow of concentrated waste oil to a collection area and a flow of oil-free water ready for secondary processing or discharge. Once an oil layer has been separated from free water, it must be removed for recycling or disposal. Many plants use one or more of these oil removal methods, but each has costly limitations:

- limitations:

 1. Absorbent materials. Absorbent mats or materials are frequently used to dam up and absorb excess oils and greases resulting from accidents or the routine operation of machinery. These materials are very effective for preventing the spread of a source leak and very efficient in terms of oil pickup. Yet, their use on large volumes of waste oil results in multiple, recurring costs that can make them impractical as an everyday solution:

 the costs of the materials themselves

 the labor costs for ordering, stocking, application, and removal

 the costs of used-media collection, disposal, or re-processing/recycling.

 2. Manually operated "slotted pipes." Many separators feature a "slotted pipe," a pipe located near the top of the vessel that has a horizontal opening. Oil is removed by turning the horizontal opening downward until it meets the floating oil layer, which drains through the pipe to a collection receptacle. These pipes work well on thick layers of oil, but cannot drain off a sheen of oil without draining off a large amount of water as well.

 AECOM assumed the best is Vacuum truck removal method. Used a crew formed of 1 Forman, 5 Laborers to takeout the petroleum waste, 1 Electrician to unplug the power and to assure the temporary power at the construction site. Vacuum-equipped tank trucks are used to remove waste oil from collection points at plants so that it can be transported to recycling or disposal locations. If the waste oil has been thoroughly separated, highly concentrated, and stored in an appropriate receptacle, this service can be used very efficiently. However, vacuum disposal units are often used to pump oil layers directly off of water. This results in the intake of a significant amount free water along with the waste oil and a significantly higher cost.

TOTAL SUBCONTRACTS

\$506.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate Description : D04 Quantity
Daily Production Project # : 4
Estimator : Mihaela To
Probable Low Cost Parameter : 4 : Mihaela Tomulescu Days EA per 0.22 Total Cost Unit Price Per EA Work Davs Unit Price \$67,376.12 per EA \$60,639 \$69,273 **Total Cost** Probable High Cost Parameter \$77,483 \$88,516 \$67,376 0.17

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
11.1.1.0. (100.)										
Hydraulic Crane (120tn)	Active	2.00	2.5	10	50.00	Е	\$239.06	incl. in rate	incl. in rate	\$11,953.00
Electrician	Active	3.00	5.0	10	150.00	L	\$49.75	incl. in rate	incl. in rate	\$7,462.95
Equipment Operator (oiler)	Active	2.00	5.0	10	100.00	L	\$69.23	incl. in rate	incl. in rate	\$6,923.40
Equipment Operator (crane)	Active	2.00	2.5	10	50.00	L	\$75.25	incl. in rate	incl. in rate	\$3,762.55
Laborer	Active	5.00	5.0	10	250.00	L	\$50.38	incl. in rate	incl. in rate	\$12,595.00
Loader, FE Rubber Tire (5.25cy)	Active	2.00	10.0	10	200.00	E	\$75.42	incl. in rate	incl. in rate	\$15,084.00
Electrician Foreman	Active	1.00	5.0	10	50.00	L	\$51.95	incl. in rate	incl. in rate	\$2,597.65
Welder	Active	1.00	5.0	10	50.00	E	\$7.84	incl. in rate	incl. in rate	\$391.88
Gas Welding Machine	Active	1.00	5.0	10	50.00	E	\$2.88	incl. in rate	incl. in rate	\$143.85
Truck Driver (heavy)	Active	1.00	2.0	10	20.00	L	\$63.35	incl. in rate	incl. in rate	\$1,266.98
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	2.0	10	20.00	E	\$31.90	incl. in rate	incl. in rate	\$638.00

Labor Hours	620	TOTAL LABOR	\$34,608.53
Equipment Hours	370	TOTAL EQUIPMENT	\$28,210.72

WATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,730.43	\$1,730.43

\$1,730.43
Contract or Quote
Amount
\$100.00

Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, maximum (assumed qty)

tons, maximum (assumed qty)					
	56.00 mile	1.000	56.00	\$7.25	\$406.00

SUMMARY OF COSTS				
Labor Cost	\$34,608.53 Labor Burden @	49.7%	\$0.00	\$34,608.53
Material Cost	\$1,730.43 Material Tax @	7.75% \$13	34.11	\$1,864.53
Equipment Cost	\$28,210.72 Equipment Tax @	7.75% \$2,18	86.33	\$30,397.06
Subcontractors	\$506.00	<u>.</u>		\$506.00
DIRECT COST SUBTOTALS	\$65,056	\$3	2,320 DIRECT COST SUBTOTALS	\$67,376
Additional Pay Item Notes :				

The cooling and lubrication systems for the generator will be a combination of water and oil. These systems will be isolated from the water passages so that no contamination of passing water will occur. Used RS Means, a R13 Crew formed of 1 Forman, 3 Electricians, 1 Oiler, 0.25 Equipment Crane. 5 Steelworkers to cut adjacent appurtenances and 1 Welder to cut pipes. Calculated 28 miles from Iron Gate Dam to Yreka Transfer Recycling (back and forth).

\$119.17



Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$51.95	incl. in rate	incl. in rate	\$415.62
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Laborer	Active	1.00	0.8	10	8.00	L	\$50.38	incl. in rate	incl. in rate	\$403.04
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.5	10	5.00	E	\$111.64	incl. in rate	incl. in rate	\$558.20
Truck Driver (heavy)	Active	1.00	0.5	10	5.00	L	\$63.35	incl. in rate	incl. in rate	\$316.75

Labor Hours	29	TOTAL LABOR	\$1,533.43
Equipment Hours	5	TOTAL EQUIPMENT	\$558.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$76.67	\$76.67
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	50.00	LF	1.000	50.00	\$0.85	\$42.50

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit		Contract or Quote				
			Company	Price		Amount				
					TOTAL SUBCONTRACTS	\$0.00				

Labor Cost	\$1,533,43	Labor Burden @	49.7%	\$0.00		\$1,533.4			
Material Cost		Material Tax @	7.75%	\$9.24	 	\$128.4			
Equipment Cost	\$558.20	Equipment Tax @	7.75%	\$43.26		\$601.4			
Subcontractors	\$0.00					\$0.0			
DIRECT COST SUBTOTALS	\$2,211	_		\$52	DIRECT COST SUBTOTALS	\$2,26			
Additional Pay Item Notes :									
Used 1 Forman, 1 Electrician to remove the electrical equipment and 1 laborer to haul.									

TOTAL EQUIPMENT

TOTAL MATERIAL

\$1,107.50

\$48.64

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.056	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Surge protection equip. for 18.975 MVA Generator	Group	: D04			
Quantity	:	1.00 EA	_				
Daily Production	:	2.50 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,988.63 per EA	Probable Low 0	Cost Parameter	2.75	\$2,690	\$3,073
Total Cost		\$2 989	Probable High (Cost Parameter	2 125	\$3 437	\$3 926

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.4	10	4.00	L	\$51.95	incl. in rate	incl. in rate	\$207.81
Electrician	Active	1.00	0.4	10	4.00	L	\$49.75	incl. in rate	incl. in rate	\$199.01
Laborer	Active	1.00	0.4	10	4.00	L	\$50.38	incl. in rate	incl. in rate	\$201.52
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.5	10	5.00	E	\$221.50	incl. in rate	incl. in rate	\$1,107.50
Equipment Operator (medium)	Active	1.00	0.5	10	5.00	L	\$72.91	incl. in rate	incl. in rate	\$364.54

MATERIAL COSTS												
Description	Item	Order	Conversion	Order	Order	Material						
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost						
Consumables 5% labor (saw blades, drill bits,												
etc)	1.00	LS	1.000	1.00	\$48.64	\$48.64						

Equipment Hours

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00		\$400.00
Disposal Fee	5.00	Ton		\$74.00		\$370.00
					TOTAL SUBCONTRACTS	\$770.00

SUMMARY OF COSTS						
Labor Cost	\$972.88	Labor Burden @	49.7%	\$0.00		\$972.88
Material Cost	\$48.64	Material Tax @	7.75%	\$3.77		\$52.41
Equipment Cost	\$1,107.50	Equipment Tax @	7.75%	\$85.83		\$1,193.33
Subcontractors	\$770.00					\$770.00
DIRECT COST SUBTOTALS	\$2,899			\$90	DIRECT COST SUBTOTALS	\$2,989
Additional Pay Item Notes :						

Used 1 Forman, 1 Electrician to remove the electrical equipment and 1 laborer to haul.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.057	Project	: KRRP - Iron Gate			
				D04			
Description	:	Remove and Dispose of Neutral grounding equip. for 18.975 MVA Generator	Group	:			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,737.67 per EA	Probable Low Co	ost Parameter	1.375	\$2,464	\$2,815
Total Cost	:	\$2,738	Probable High C	ost Parameter	1.0625	\$3,148	\$3,597

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	8.0	10	8.00	L	\$51.95	incl. in rate	incl. in rate	\$415.62
Electrician	Active	1.00	8.0	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Ironworkers	Active	1.00	0.8	10	8.00	L	\$70.35	incl. in rate	incl. in rate	\$562.76
Laborer	Active	1.00	8.0	10	8.00	L	\$50.38	incl. in rate	incl. in rate	\$403.04
Gas Welding Machine	Active	1.00	8.0	10	8.00	E	\$2.88	incl. in rate	incl. in rate	\$23.02
Welder	Active	1.00	0.8	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.70
				Labor Hours	32				TOTAL LABOR	\$1,779.45
				Equipment Hours	16			тот	AL EQUIPMENT	\$85.72

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$88.97	\$88.97

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	5.00	Ton		\$74.00	\$370.00
				TOTAL SUBCO	NTRACTS \$770.00

SUMMARY OF COSTS					
Labor Cost	\$1,779.45 Labor Burden @	49.7%	\$0.00		\$1,779.45
Material Cost	\$88.97 Material Tax @	7.75%	\$6.90		\$95.87
Equipment Cost	\$85.72 Equipment Tax @	7.75%	\$6.64		\$92.36
Subcontractors	\$770.00				\$770.00
DIRECT COST SUBTOTALS	\$2,724		\$14	DIRECT COST SUBTOTALS	\$2,738
Additional Pay Item Notes :					

\$150.89

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.058	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Station Service Switchgear, 600 volt - (5 sections)	Group	: D04			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,177.87 per EA	Probable Low	Cost Parameter	1.375	\$4,660	\$5,324
Total Cost	:	\$5,178	Probable High	Cost Parameter	1.0625	\$5,955	\$6,802

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$51.95	incl. in rate	incl. in rate	\$415.62
Electrician	Active	3.00	0.8	10	24.00	L	\$49.75	incl. in rate	incl. in rate	\$1,194.07
Laborer	Active	2.00	0.8	10	16.00	L	\$50.38	incl. in rate	incl. in rate	\$806.08
Hydraulic Crane (35tn)	Active	1.00	0.8	10	8.00	E	\$116.30	incl. in rate	incl. in rate	\$930.40
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
				Labor Hours	56				TOTAL LABOR	\$3,017.78
				Equipment Hours	8			TO	TAL EQUIPMENT	\$930.40

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$150.89	\$150.89

SUBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (assumed qty)	1.00	ton		1.000	1.00	\$595.00	\$595.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load			\$400.00	\$400.00
						TOTAL SUBCO	NTRACTS \$995.00

SUMMARY OF COSTS					
Labor Cost	\$3,017.78 Labor Burden @	49.7%	\$0.00		\$3
Material Cost	\$150.89 Material Tax @	7.75%	\$11.69		9
Equipment Cost	\$930.40 Equipment Tax @	7.75%	\$72.11		\$1,
Subcontractors	\$995.00				5
DIRECT COST SUBTOTALS	\$5,094		\$84	DIRECT COST SUBTOTALS	

Used 1 Forman, 3 Electrician, 2 laborer to haul with the crane in the truck. Assumed containing hazardous waste that will be disposed at 28 miles away from the construction site. In normal circumstances, decontaminated residual components could be accepted at landfill sites but Polychlorinated biphenyl, otherwise known as PCB, is a synthetic chemical that is widely used for industrial and commercial use as dielectric fluid in transformers and capacitors because of its high resistance to decomposition, low electrical conductivity, low flammability and high heat capacity. Transformer repair, reconditioning and retro-filling facilities are the major industry sectors that contributes to the spread of PCB contamination. Types of PCB Wastes:

PCB wastes are discarded materials that contain PCB or have been contaminated with PCBs and that are without any commercial, industrial, or economic use. For the purpose of this Code of Practice, PCBs wastes are classified as follows: Liquid PCB wastes

PCB-based dielectric fluids removed from transformers and other equipment

PCB-based delectric fluids fermoved from transformers and other equipment

PCB-based deat transfer and hydraulic fluids Metallic solid wastes

PCB equipment such as capacitors, transformers, switchgears, circuit breakers, heat transfer systems, etc.

Contaminated components removed from electrical equipment such as windings; PCB-contaminated containers and equipment such as metal drums, tanks, pumps, metal filters, etc. Calculated 28 miles from Iron Gate Dam to Yreka Transfer Recycling

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.059	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Unit and plant control switchboard	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	4.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$21,610.85 per EA	Probable Low	Cost Parameter	0.275	\$19,450	\$22,219
Total Cost		\$21 611	Probable High	Cost Parameter	0.2125	\$24.852	\$28.391

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	4.0	10	40.00	L	\$51.95	incl. in rate	incl. in rate	\$2,078.12
Electrician	Active	6.00	4.0	10	240.00	L	\$49.75	incl. in rate	incl. in rate	\$11,940.72
Loader, FE Rubber Tire (3.5cy)	Active	1.00	4.0	10	40.00	E	\$64.23	incl. in rate	incl. in rate	\$2,569.20
Equipment Operator (medium)	Active	1.00	4.0	10	40.00	L	\$72.91	incl. in rate	incl. in rate	\$2,916.32
				Labor Hours	320				TOTAL LABOR	\$16,935.16
				Equipment Hours	40			тот	TAL EQUIPMENT	\$2,569.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 5% labor (saw blades, drill bits,						
c)	1.00	LS	1.000	1.00	\$846.76	\$846.7

TOTAL MATERIAL \$846.76

JBCONTRACT COSTS

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum	1.00	ton	1.000	1.00	\$595.00	\$595.00
Hauling to Yreka Transfer 40 Miles		10.1			\$666.66	\$
	1.00	Load	20 tons per load		\$400.00	\$400.00
					TOTAL CUR	CONTRACTO

SUMMARY OF COSTS						
Labor Cost	\$16,935.16	Labor Burden @	49.7%	\$0.00		\$16,935.16
Material Cost	\$846.76	Material Tax @	7.75%	\$65.62		\$912.38
Equipment Cost	\$2,569.20	Equipment Tax @	7.75%	\$199.11		\$2,768.31
Subcontractors	\$995.00					\$995.00
DIRECT COST SUBTOTALS	\$21,346			\$265	DIRECT COST SUBTOTALS	\$21,611
Additional Pay Item Notes :						

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.4	10	24.00	L	\$53.10	\$0.00		\$1,274.33
Electrician	Active	1.00	2.4	10	24.00	L	\$49.75	\$0.00		\$1,194.07
Equipment Operator (light)	Active	1.00	2.4	10	24.00	L	\$71.39	\$0.00		\$1,713.36
Loader, FE Rubber Tire (3.5cy)	Active	1.00	2.4	10	24.00	E	\$64.23	\$64.23		\$1,541.52
Welder	Active	1.00	2.4	10	24.00	E	\$7.84	\$7.84		\$188.10
Gas Welding Machine	Active	1.00	2.4	10	24.00	E	\$2.88	\$2.88		\$69.05

 Labor Hours
 72
 TOTAL LABOR
 \$4,181.76

 Equipment Hours
 72
 TOTAL EQUIPMENT
 \$1,798.67

MATERIAL COSTS						
Description	Item	Order	onversion	Order	Order	Material
	Quantity	Unit	ctor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$209.09	\$209.09

TOTAL MATERIAL \$209.09

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	5.00	Ton		\$74.00	\$370.00
				TOTAL SUBCO	NTD A CTC

SUMMARY OF COSTS					
Labor Cost	\$4,181.76 Labor Burden @	49.7%	\$0.00		\$4,181.76
Material Cost	\$209.09 Material Tax @	7.75%	\$16.20		\$225.29
Equipment Cost	\$1,798.67 Equipment Tax @	7.75%	\$139.40		\$1,938.06
Subcontractors	\$770.00				\$770.00
DIRECT COST SUBTOTALS	\$6,960		\$156	DIRECT COST SUBTOTALS	\$7,115
Additional Pay Item Notes :					

\$403.68

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.061	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Raceways, Bus, Conduit and Cable	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	4.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$9,278.52 per EA	Probable Low Co	ost Parameter	0.275	\$8,351	\$9,540
Total Cost	:	\$9,279	Probable High C	ost Parameter	0.2125	\$10,670	\$12,190

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	4.0	10	40.00	L	\$51.95	incl. in rate	incl. in rate	\$2,078.12
Electrician	Active	2.00	4.0	10	80.00	L	\$49.75	incl. in rate	incl. in rate	\$3,980.24
Laborer	Active	1.00	4.0	10	40.00	L	\$50.38	incl. in rate	incl. in rate	\$2,015.20
						_				
				Labor Hours	160				TOTAL LABOR	\$8,073.56
				Equipment Hours	0			тот	AL EQUIPMENT	\$0.00

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
nsumables 5% labor (saw blades, drill bits,	1.00	LS	1.000	1.00	\$403.68	\$403.6
					¥	,

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	5.00	Ton		\$74.00	\$370.00
				TOTAL SUBCON	ITRACTS \$770.00

SUMMARY OF COSTS								
Labor Cost	\$8,073.56	Labor Burden @	49.7%	\$0.00		\$8,073.56		
Material Cost	\$403.68	Material Tax @	7.75%	\$31.29		\$434.96		
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00		
Subcontractors	\$770.00					\$770.00		
DIRECT COST SUBTOTALS	\$9,247			\$31	DIRECT COST SUBTOTALS	\$9,279		
Additional Pay Item Notes :								
Used 1 Forman, 2 Electrician, 1 Laborer hauling with the loader in the truck.								

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.062	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Unit and plant control switchboard	Group : D05			
Quantity	:	1.00 EA				
Daily Production	:	0.81 EA per 10 hour shift	Project # : 4			
Work Days	:	1.2 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,918.36 per EA	Probable Low Cost Parameter	0.89375	\$2,627	\$3,001
Total Cost		\$2.018	Probable High Cost Parameter	0.600635	\$2.2EC	62 024

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	1.2	10	12.00	L	\$51.95	incl. in rate	incl. in rate	\$623.44
Electrician	Active	1.00	1.2	10	12.00	L	\$49.75	incl. in rate	incl. in rate	\$597.04
Laborer	Active	1.00	1.2	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
						1				
				Labor Hours	36				TOTAL LABOR	\$1,825.03
				Equipment Hours	0			тот	TAL EQUIPMENT	\$0.00

Item	Order	Conversion	Order	Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost
1.00	LS	1.000	1.00	\$91.25	\$91.25
	Quantity	Quantity Unit	Quantity Unit Factor / Waste	Quantity Unit Factor / Waste Quantity	Quantity Unit Factor / Waste Quantity Price

TOTAL MATERIAL \$91.25

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	1.00	ton	1.000	1.00	\$595.00	\$595.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00
					TOTAL SUE	CONTRACTS \$995.00

SUMMARY OF COSTS						
Labor Cost	\$1,825.03	Labor Burden @	49.7%	\$0.00		\$1,825.03
Material Cost	\$91.25	Material Tax @	7.75%	\$7.07		\$98.32
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$995.00					\$995.00
DIRECT COST SUBTOTALS	\$2,911			\$7	DIRECT COST SUBTOTALS	\$2,918
Additional Pay Item Notes :						
]

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.063	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Unit and plant control switchboard	Group	: D05			
Quantity	:	1.00 EA	_				
Daily Production	:	0.81 EA per 10 hour shift	Project #	: 4			
Work Days	:	1.2 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$6,566.41 per EA	Probable Low	Cost Parameter	0.89375	\$5,910	\$6,751
Total Cost	:	\$6,566	Probable High	Cost Parameter	0.690625	\$7,551	\$8,627

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	1.2	10	12.00	L	\$51.95	incl. in rate	incl. in rate	\$623.44
Electrician	Active	3.00	1.2	10	36.00	L	\$49.75	incl. in rate	incl. in rate	\$1,791.11
Laborer	Active	2.00	1.2	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.2	10	12.00	E	\$64.23	incl. in rate	incl. in rate	\$770.76
Equipment Operator (medium)	Active	1.00	1.2	10	12.00	L	\$72.91	incl. in rate	incl. in rate	\$874.90
									_	
				Labor Houre	9.4				TOTAL LABOR	\$4.408.5

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$224.93	\$224.93

Equipment Hour

TOTAL MATERIAL \$224.93

\$770.76

\$995.00

TOTAL EQUIPMENT

TOTAL SUBCONTRACTS

Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
			Company	Filce		Amount
Hazardous waste cleanup/pickup/disposal, solid						
pickup, bulk material, maximum	1.00	ton	1.000	1.00	\$595.00	\$595.0
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00

SUMMARY OF COSTS						
Labor Cost	\$4,498.56	Labor Burden @	49.7%	\$0.00		\$4,498.56
Material Cost	\$224.93	Material Tax @	7.75%	\$17.43		\$242.36
Equipment Cost	\$770.76	Equipment Tax @	7.75%	\$59.73		\$830.49
Subcontractors	\$995.00					\$995.00
DIRECT COST SUBTOTALS	\$6,489			\$77	DIRECT COST SUBTOTALS	\$6,566

Additional Pay Item Notes :

Used 1 Forman, 3 Electrician, 2 laborer to haul with the loader in the truck. Assumed containing hazardous waste that will be disposed at 200 miles away from the construction site. In normal circumstances, decontaminated residual components could be accepted at landfill sites but Polychlorinated biphenyl, otherwise known as PCB, is a synthetic chemical that is widely used for industrial and commercial use as dielectric fluid in transformers and capacitors because of its high resistance to decomposition, low electrical conductivity, low flammability and high heat capacity. Transformer repair, reconditioning and retro-filling facilities are the major industry sectors that contributes to the spread of PCB contamination. Types OPCB wastes:

PCB wastes are discarded materials that contain PCB or have been contaminated with PCBs and that are without any commercial, industrial, or economic use. For the purpose of this Code of Practice, PCBs wastes are classified as follows: Liquid PCB wastes

O PCB-based dielectric fluids removed from transformers and other equipment

O PCB-based heat transfer and hydraulic fluids Metallic solid wastes

O PCB equipment such as capacitors, transformers, switchgears, circuit breakers, heat transfer systems, etc.

O Contaminated components removed from electrical equipment such as windings; PCB-contaminated containers and equipment such as metal drums, tanks, pumps, metal filters, etc. Calculated 28 miles from Iron Gate Dam to Yreka Transfer Recycling

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.064	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Unit and plant control switchboard	Group	D05			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.5 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,009.93 per EA	Probable Low	Cost Parameter	1.375	\$909	\$1,038
Total Cost	:	\$1,010	Probable High	Cost Parameter	1.0625	\$1,161	\$1,327

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.5	10	5.00	L	\$51.95	incl. in rate	incl. in rate	\$259.7
Electrician	Active	1.00	0.5	10	5.00	L	\$49.75	incl. in rate	incl. in rate	\$248.7
				Labor Hours	10				TOTAL LABOR	\$508.5
				Equipment Hours	0			TOT	AL EQUIPMENT	\$0.0

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 5% labor (saw blades, drill bits,						
ic)	1.00	LS	1.000	1.00	\$25.43	\$25.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles					
	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee					
	1.00	Ton		\$74.00	\$74.00
					A.T
				TOTAL SUBCO	NTRACTS \$474.00

abor Cost	\$508.53 Labor Burden @	49.7% \$0.00	\$50
faterial Cost	\$25.43 Material Tax @	7.75% \$1.97	\$
quipment Cost	\$0.00 Equipment Tax @	7.75% \$0.00	
ubcontractors	\$474.00	·	\$4
RECT COST SUBTOTALS	\$1,008	\$2	DIRECT COST SUBTOTALS \$
ditional Pay Item Notes :			

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.066	Project	: KRRP - Iron Gate				Ī
Description	:	Remove and Dispose of Transformer (3 phase, 300 kVA, 6600/480V est.)	Group	: D05				
Quantity	:	1.00 EA	_					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 4				
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA	
Unit Price	:	\$4,953.90 per EA	Probable Low C	ost Parameter	1.375	\$4,459	\$5,093	
Total Cost		\$4 954	Probable High C	ost Parameter	1 0625	\$5.697	\$6.508	

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	8.0	10	8.00	L	\$51.95	incl. in rate	incl. in rate	\$415.62
Electrician	Active	2.00	0.8	10	16.00	L	\$49.75	incl. in rate	incl. in rate	\$796.05
Hydraulic Crane (50tn)	Active	1.00	0.8	10	8.00	E	\$134.32	incl. in rate	incl. in rate	\$1,074.56
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Truck, Utility, with Man-Basket	Active	1.00	0.8	10	8.00	E	\$31.90	incl. in rate	incl. in rate	\$255.20
				Labor Hours	40			т	OTAL LABOR	\$2,396.94

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$119.85	\$119.85

						•	
Quantity	Units	Notes / Company			Unit Price		Contract or Quote Amount
1.00	ton	1.000		1.00	\$595.0	0	\$595.0
1.00	Load	20 tons per load			\$400.0	0	\$400.
						TOTAL SUBCONTRACTS	\$995.
							•
				\$0.00			\$2,396
							\$129.
	quipment Tax @		7.75%	\$103.06			\$1,432.
\$995.00							\$995.
\$4,842				\$112		DIRECT COST SUBTOTALS	\$4,9
						_	
	1.00 1.00 \$2,396.94 L \$119.85 N \$1,329.76 E \$995.00	1.00 ton 1.00 Load \$2,396.94 Labor Burden @ \$119.85 Material Tax @ \$1,329.76 Equipment Tax @	1.00 ton	1.00 ton 1.000 1.00 Load 20 tons per load	1.00 ton 1.000 1.	Company	Company Price

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.067		Project	: KRRP - Iron Gate			
			ansformer, outdoor, oil-filled, 3-phase, 18.947 kVA,		D09			
Description	:	6.600/69.000 volt		Group	:			
Quantity	:	1.00 EA		_				
Daily Production	:	1.00 EA per	10 hour shift	Project #	: 4			
Work Days	:	1.0 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$37,330.80 per EA		Probable Low Co	st Parameter	1.1	\$33,598	\$38,382
Total Cost	:	\$37,331		Probable High Co	st Parameter	0.85	\$42,930	\$49,044

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours	L/E	Rate	Cost	Rate	Cost
Electrician Foreman	Active	2.00	1.0	10	20.00	L	\$51.95	incl. in rate	incl. in rate	\$1,039.06
Electrician	Active	2.00	1.0	10	20.00	L	\$49.75	incl. in rate	incl. in rate	\$995.06
Laborer	Active	4.00	1.0	10	40.00	L	\$50.38	incl. in rate	incl. in rate	\$2,015.20
Hydraulic Excavator (6.0cy)	Active	1.00	1.0	10	10.00	E	\$322.48	incl. in rate	incl. in rate	\$3,224.80
Truck Driver (heavy)	Active	1.00	1.0	10	10.00	L	\$63.35	incl. in rate	incl. in rate	\$633.49
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	1.0	10	10.00	E	\$31.90	incl. in rate	incl. in rate	\$319.00
Crawler Crane (130tn)	Active	2.00	1.0	10	20.00	E	\$258.66	incl. in rate	incl. in rate	\$5,173.20
Truck, Utility, with Man-Basket	Active	2.00	1.0	10	20.00	E	\$31.90	incl. in rate	incl. in rate	\$638.00
Equipment Operator (crane)	Active	2.00	1.0	10	20.00	L	\$75.25	incl. in rate	incl. in rate	\$1,505.02
Equipment Operator (medium)	Active	1.00	1.0	10	10.00	L	\$72.91	incl. in rate	incl. in rate	\$729.08
						_			_	
				Labor Hours	120				TOTAL LABOR	\$6,916.91
				Equipment Hours	60			тот	TAL EQUIPMENT	\$9,355.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$345.85		\$345.85
						TOTAL MATERIAL	\$345.85

Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price	9	Amount
Disposal fee	1 EA	1.000	1.00	\$1,000.00	\$1,000.00
Remove oil from oil-filled step-up transformer (allowance for oil containers, filters, etc)	1 EA	1.000	1.00	\$13,000.00	\$13,000.00
Forklift crew, all-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity, weekly use	1 week	1.000	1.00	\$5,961.23	\$5,961.23

SUMMARY OF COSTS					
Labor Cost	\$6,916.91 Labor Burden @	49.7%	\$0.00		\$6,916.91
Material Cost	\$345.85 Material Tax @	7.75%	\$26.80		\$372.65
Equipment Cost	\$9,355.00 Equipment Tax @	7.75%	\$725.01		\$10,080.01
Subcontractors	\$19,961.23				\$19,961.23
DIRECT COST SUBTOTALS	\$36,579		\$752	DIRECT COST SUBTOTALS	\$37,331
Additional Pay Item Notes :					
have to be transported empty. During tran	nsport the transformers are filled either by dry air or issumption - 2 crew R3 formed of 1 Forman, 1 Ele	nitrogen. Because of transportation, the auxili	iaries have to b	is due to the oil, so the direct consequence is that the big transformers be removed . For this reason the collaboration with all the people involved al line, 1 crane for disposal of each transformer in the truck and 2 laborers	

\$193.97

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	\$0.00		\$424.78
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	\$0.00		\$398.02
Hydraulic Crane (35tn)	Active	1.00	0.8	10	8.00	E	\$116.30	\$116.30		\$930.40
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	\$0.00		\$602.01
Steelworker	Active	2.00	0.8	10	16.00	L	\$72.07	\$0.00		\$1,153.15
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.8	10	8.00	E	\$111.64	\$111.64		\$893.12
Truck Driver (light)	Active	1.00	0.8	10	8.00	L	\$61.92	\$0.00		\$495.35
Laborer	Active	2.00	0.8	10	16.00	L	\$50.38	\$0.00		\$806.08
Gas Welding Machine	Active	1.00	0.8	10	8.00	E	\$2.88	\$2.88		\$23.02
Velder	Active	1.00	0.8	10	8.00	E	\$7.84	\$7.84		\$62.70
				_						
	•			Labor Hours	64			1	TOTAL LABOR	\$3,879.3
				Equipment Hours	32			TOTAL	L EQUIPMENT	\$1,909.24

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$193.97	\$193.97

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent aerial lift, articulating boom, to 80' high, 500 lb. capacity, diesel - Rent per day (RS Means 01543340)	1.00	dovo	1.000	1.00	\$584.00	\$584.00
Hauling to Yreka Transfer 40 Miles	1.00	days Load	20 tons per load	1.00	\$400.00 \$400.00	\$400.00
Disposal Fee	10.00	Ton	20 tons per load		\$74.00	\$740.00
					TOTAL SUBCONTRACTS	\$1,724.00

SUMMARY OF COSTS					
Labor Cost	\$3,879.39 Labor Burden @	49.7%	\$0.00		\$3,879.39
Material Cost	\$193.97 Material Tax @	7.75%	\$15.03		\$209.00
Equipment Cost	\$1,909.24 Equipment Tax @	7.75%	\$147.97		\$2,057.20
Subcontractors	\$1,724.00				\$1,724.00
DIRECT COST SUBTOTALS	\$7,707		\$163	DIRECT COST SUBTOTALS	\$7,870
Additional Pay Item Notes :					

Production is based off of RSMs using Crew formed of 1 Forman, 1 Electrician disconnect switches and insulators, 2 steelworkers to cut in pieces the structure, 2 laborer to help loading and hauling lattice steel members. It will require the use of steel haul trucks; carry all's, boom cranes. the structure will be dismantle on a basis of top to bottom, thus avoiding any form of collapse or toppling over.

Additional Pay Item Notes :

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.069		Project	: KRRP - Iron Gate			
		Remove and Dispose of Generator	Switchgear, outdoor, 7.2kV includes unit breaker		D05			
Description	:	(5 sections)	-	Group	:			
Quantity	:	1.00 EA		='				
Daily Production	:	0.63 EA per	10 hour shift	Project #	: 4			
Work Days	:	1.6 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$22,733.54 per EA		Probable Low Co	ost Parameter	0.6875	\$20,460	\$23,373.72
Total Cost	:	\$22,734		Probable High C	ost Parameter	0.53125	\$26,144	\$29,866.41

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	2.00	1.6	10	32.00	L	\$53.10	\$0.00		\$1,699.10
Electrician	Active	6.00	1.6	10	96.00	L	\$49.75	\$0.00		\$4,776.29
Hydraulic Crane (50tn)	Active	1.00	2.0	10	20.00	E	\$134.32	\$134.32		\$2,686.40
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$75.25	\$0.00		\$1,505.02
Laborer	Active	4.00	1.6	10	64.00	L	\$50.38	\$0.00		\$3,224.32
Steelworker	Active	2.00	1.6	10	32.00	L	\$72.07	\$0.00		\$2,306.30
				Labor Hours	244			1	OTAL LABOR	\$13,511.04
				Equipment Hours	20			TOTAL	EQUIPMENT	\$2,686.40

Order	Conversion	Order	Order	Material
Unit	Factor / Waste	Quantity	Price	Cost
LS	1.000	1.00	\$675.55	\$675.55
		Unit Factor / Waste	Unit Factor / Waste Quantity	Unit Factor / Waste Quantity Price

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Cand Amount

Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum

6.00 ton 1.000 6.00 \$595.00 \$3,570.00

Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, maximum

280.00 mile 1.000 280.00 \$7.25 \$2,030.00

SUMMARY OF COSTS						
Labor Cost	\$13,511.04 Labor Burden @	0	49.7%	\$0.00		\$13,511.04
Material Cost	\$675.55 Material Tax @		7.75%	\$52.36		\$727.91
Equipment Cost	\$2,686.40 Equipment Tax	. @	7.75%	\$208.20		\$2,894.60
Subcontractors	\$5,600.00					\$5,600.00
DIRECT COST SUBTOTALS	\$22,473	_		\$261	DIRECT COST SUBTOTALS	\$22,734

Used 2 Crews (2 sections each weight around 2400 LBS per crew) formed of 1 Forman, 3 Electrician, 2 laborer to haul with the crane in the truck considering one way for each section. Assumed containing hazardous waste that will be disposed (12000 LBS) at 28 miles away from the construction site to Yreka Transfer Recycling.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.070	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Single Phase Pole Transformers (25 kVA est.)	Group	: D05			
Quantity	:	3.00 EA	_				
Daily Production	:	3.75 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$2,254.43 per EA	Probable Low	Cost Parameter	4.125	\$6,087	\$2,317.91
Total Cost		\$6.763	Probable High	Cost Parameter	3 1875	\$7 778	\$2 961 77

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	3.00	0.8	10	24.00	L	\$51.95	incl. in rate	incl. in rate	\$1,246.87
Electrician	Active	3.00	0.8	10	24.00	L	\$49.75	incl. in rate	incl. in rate	\$1,194.07
Truck, Utility, with Man-Basket	Active	3.00	0.8	10	24.00	E	\$31.90	incl. in rate	incl. in rate	\$765.60
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Hydraulic Crane (17tn)	Active	1.00	0.8	10	8.00	E	\$81.52	incl. in rate	incl. in rate	\$652.16
				Labor Hours	56			7	OTAL LABOR	\$3,042.95
				Equipment Hours	32			TOTA	L EQUIPMENT	\$1,417.76

	Conversion	Order	Order	Material
Unit	Factor / Waste	Quantity	Price	Cost
00 LS	1.000	1.00	\$152.15	\$152
			•	•

Company Price Amou azardous waste cleanup/pickup/disposal, solid ckup, bulk material, maximum 0.25 ton 1.000 0.25 \$595.00 auling to Yreka Transfer 40 Miles 1.00 Load 20 tons per load \$400.00	Description	Quantity	Units	Notes /			Unit			Contract or Quote
lauling to Yreka Transfer 40 Miles 1.00 Load 20 tons per load \$400.00 isposal Fee 20.00 Ton \$74.00	·	•		Company			Price			Amount
auling to Yreka Transfer 40 Miles 1.00 Load 20 tons per load \$400.00 sposal Fee 20.00 Ton \$74.00										
isposal Fee 20.00 Ton \$74.00		0.25	ton	1.000		0.25		\$595.00		\$14
	auling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load				\$400.00		\$40
TOTAL SUBCONTRACTS	isposal Fee	20.00	Ton					\$74.00		\$1,48
								1	TOTAL SUBCONTRACTS	\$2,02
SUMMARY OF COSTS								1	TOTAL SUBCONTRACTS	
					49.7%	\$0.00 \$11.79				\$3, \$
Labor Cost \$3,042.95 Labor Burden @ 49.7% \$0.00 Material Cost \$152.15 Material Tax @ 7.75% \$11.79	Equipment Cost		Equipment Tax @		7.75%	\$109.88			-	\$1.5

L	abor Cost	\$3,042.95 Labor Burden @	49.7%	\$0.00		\$3,042.95
Λ	Material Cost	\$152.15 Material Tax @	7.75%	\$11.79		\$163.94
Е	Equipment Cost	\$1,417.76 Equipment Tax @	7.75%	\$109.88		\$1,527.64
S	Subcontractors	\$2,028.75				\$2,028.75
	DIRECT COST SUBTOTALS	\$6,642		\$122	DIRECT COST SUBTOTALS	\$6,763
Ad	Iditional Pay Item Notes :					
_						

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.071		Project	: KRRP - Iron Gate			
Description	:	Remove Concrete in Penstock	Intake Structure	Group	: D07			
Quantity	:	460.00 cy						
Daily Production	:	150.00 cy per	10 hour shift	Project #	: 4			
Work Days	: '	3.1 Days		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$105.80 per cy		Probable Low	Cost Parameter	165	\$43,799	\$108.77
Total Cost	:	\$48,666		Probable High	Cost Parameter	135	\$53,533	\$132.95

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.1	10	31.00	L	\$53.10	incl. in rate	incl. in rate	\$1,646.0
Laborer	Active	3.00	3.1	10	93.00	L	\$50.38	incl. in rate	incl. in rate	\$4,685.3
Equipment Operator (medium)	Active	4.00	3.1	10	124.00	L	\$72.91	incl. in rate	incl. in rate	\$9,040.59
Truck Driver (heavy)	Active	1.00	2.1	10	20.52	L	\$63.35	incl. in rate	incl. in rate	\$1,299.92
Hydraulic Excavator (2.5cy)	Active	1.00	3.1	10	31.00	E	\$203.63	incl. in rate	incl. in rate	\$6,312.53
Hydraulic Excavator (5.0cy)	Active	1.00	3.1	10	31.00	E	\$274.63	incl. in rate	incl. in rate	\$8,513.53
Loader, FE Rubber Tire (3.5cy)	Active	1.00	3.1	10	31.00	E	\$64.23	incl. in rate	incl. in rate	\$1,991.13
Hydraulic Thumbs/Shear Attachment	Active	1.00	3.1	10	31.00	E	\$16.39	incl. in rate	incl. in rate	\$508.09
Air Tool, Chipping Hammer	Active	2.00	3.1	10	62.00	E	\$1.64	incl. in rate	incl. in rate	\$101.62
Air Compressor 600 cfm	Active	3.00	3.1	10	93.00	E	\$21.74	incl. in rate	incl. in rate	\$2,021.72
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	3.1	10	31.00	E	\$89.29	incl. in rate	incl. in rate	\$2,767.99
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.1	10	20.52	E	\$174.47	incl. in rate	incl. in rate	\$3,580.12
										\$0.00
										\$0.0
						_				\$0.00
			-	Labor Hours	269)			TOTAL LABOR	\$16,671.8
			Equir	ment Hours	33.				TOTAL EQUIPMENT	\$25,796.7

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$833.59		\$833.59
						TOTAL MATERIAL	\$833.59

Description	Quantity U	Inits Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	1 EA	Cost per Mob	\$2,500.00		\$2,500.00
Hauling Disposal Cost	2.00 Lo	oads 90lbs per CY	\$400.00		\$800.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$3,300.00

SUMMARY OF COSTS										
Labor Cost	\$16,671.86 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.		\$16,671.86						
Material Cost	\$833.59 Material Tax @	7.75% \$64.60		\$898.20						
Equipment Cost	\$25,796.73 Equipment Tax @	7.75% \$1,999.25		\$27,795.98						
Subcontractors	\$3,300.00			\$3,300.00						
DIRECT COST SUBTOTALS	\$46,602	\$2,064	DIRECT COST SUBTOTALS	\$48,666						
Additional Pay Item Notes :										
This item will be double shifted wit	This item will be double shifted with two 10 hours shifts due to work window restrictions established by the California in water work permit.									

gh Cost Factors Id Weather Is Price Increase Increase Increase Contaminated Mats/ Access Issues Idal Idultion Per Hour Hours It S It Increase It	460.00 60% 736 19.2 1 8	Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Total Overall Production 3 120.00	35.56 2.50 14 1.00 35.5555556 95 37% 63%
d Weather is Price increase inforeseen Contaminated Mats/ Access Issues tal oduction Per Hour Hours 15 uil Notes (** real Factor lik CY uil Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: uil Speed (Loaded MPH) turn Speed (Unloaded MPH)	5% 5% 5% 6 10% 10% 10% 10% 10% 10% 10% 10% 10% 10%	No Bad Weather Gas Price Decrease No Unforessen Contaminated Mats/ Access issues Total Overall Production 120.00 150.00 Excavator Loading Production per shift CY per Hour CY Per Hour If Exercises Buckets Per Hour If of Excavators CY Per Hour (2.5 CY Bucket) CY Per Hour (Jean Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
Is Price Increase foreseen Contaminated Mats/ Access Issues tal duction Per Hour Hours 15 uil Notes for life Tector lik CY will Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: uil Speed (Loaded MPH) turn Speed (Unloaded MPH)	5% 5% 5% 6 10% 10% 10% 10% 10% 10% 10% 10% 10% 10%	Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Total Overall Production 3 120.00 5 150.00 Excavator Loading Production per shift C'y per Hour 2 of Excavators C'y Per Hour (2-5 CY Bucket) 5 CY Per	2.50 14 1.00 35.5555556 95 37%
Inforeseen Contaminated Mats/ Access Issues tal adduction Per Hour Hours 15 ut Notes (r) tell Factor lik CY ut Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) imp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ut Speed (Loaded MPH) turn Speed (Unloaded MPH)	5% 5% 10% 10% 10 10% 10 10% 10 10% 10 10 10 10 10 10 10 10 10 10 10 10 10	Overall Production 3 120.00 5 120.00 6 150.00 Excavator Loading Production per shift C Y per Hour 2 of Excavator C Y Buckets Size 6 Buckets Per Hour 2 of Excavator C Y Bucket Size 7 OY Excavator C Y Bucket Size 8 University Size 9 University Size 10 OY Per Hour (2.5 CY Bucket) C Y Per Hour (2.5 CY Bucket) C Y Per Hour I deal Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
tal Deduction Per Hour Hours 15 tul Notes Frell Factor Idi CY Will Vehicle 60% Capacity (2 tons per CY) Haul Vehicles and Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) Imp Time (Includes Spot Time, Maneuver Time, & Unloading) Minuter Util Speed (Loaded MPH) turn Speed (Unloaded MPH)	10% 8 10 460.00 60% 736 19.2 1 8 3 9 20 1	Overall Production 120.00 150.00 Excavator Loading Production per shift CY per Hour 6 of Excavators Every Per Hour 8 of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour (2.5 CY Bucket) EV Per Hour (4.8 DE Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
ul Notes // rell Factor lik CY ul Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	460.00 60% 736 19.2 1 8 3 9 20	Excavator Loading Production per shift CY per Hour 2 of Excavators CY per Hour (2-5 CY Bucket) CY Per Hour (2-5 CY Bucket) CY Per Hour (2-6 CY Bucket) Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
ul Notes // rell Factor lik CY ul Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	460.00 60% 736 19.2 1 8 3 9 20	Excavator Loading Production per shift CY per Hour 2 of Excavators CY per Hour (2-5 CY Bucket) CY Per Hour (2-5 CY Bucket) CY Per Hour (2-6 CY Bucket) Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
ul Notes Well Factor Ik CY Il Vehicle 80% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	10 460.00 60% 736 19.2 1 8 3 9 20	Excavator Loading Production per shift CY per Hour CY Bucket Size Buckets Per Hour # of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour (deal Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
rell Factor lik CY ul Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) unp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	460.00 60% 736 19.2 1 8 3 9	Excavator Loading Production per shift CY per Hour CY Bucket Size Buckets Per Hour # of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
rell Factor lik CY ul Vehicle 60% Capacity (2 tons per CY) of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) unp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	460.00 60% 736 19.2 1 8 3 9 20	CY per Hour CY Bucket Size Buckets Per Hour 2# of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
ell Factor lk CY ul Vehicle 60% Capacity (2 tons per CY) f Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	460.00 60% 736 19.2 1 8 3 9 20	CY per Hour CY Bucket Size Buckets Per Hour 2# of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	2.50 14 1.00 35.5555556 95 37%
rell Factor lik CY ul Vehicle 60% Capacity (2 tons per CY) H Auil Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minuter ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	60% 736 19.2 1 8 3 9 20	CY Bucket Size Buckets Per Hour	2.50 14 1.00 35.5555556 95 37%
IIk CY ul Vehicle 60% Capacity (2 tons per CY) f Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	736 19.2 1 8 3 9 20	Buckets Per Hour # of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour (deal Production Per 8 Hour Shift) Efficient Compared to Ideal Production	14 1.00 35.5555556 95 37%
ul Vehicle 60% Capacity (2 tons per CY) if Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) mp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	19.2 1 8 3 9 20 1	# of Excavators CY per Hour (2.5 CY Bucket) CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	1.00 35.5555556 95 37%
of Haul Vehicles ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) imp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	1 8 3 9 20 1	CY per Hour (2.5 CY Bucket) CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	35.5555556 95 37%
ad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) imp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	8 3 9 20 1	CY Per Hour Ideal Production Per 8 Hour Shift Efficient Compared to Ideal Production	95 37%
imp Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	3 9 20 1	Efficient Compared to Ideal Production	37%
ul Speed (Loaded MPH) turn Speed (Unloaded MPH)	9 20 1		
turn Speed (Unloaded MPH)	20 1)	03%
	1		
	10		
	10		
ift Length (Hours)			
ce Time		Breaker Production	
ad Time (Load Time Minutes / 60mins)		3 Hydraulic Hammer CY per Hour	15
ul Time (Haul Distance / Haul Speed)		# of Hammers	3.00
IMP Time (Dump Time Minutes / 60 Mins)	0.05	CY per Hour	35.5555556
turn Time (Haul Distance / Return Speed)		CY per Hour Back Check	5
ours Per Cycle		3 32CY per HR per 8hr shift (Ideal prod)	32
trad Hours Per Cycle (Hours per Cycle / Efficency Factor)		Efficient Compared to Ideal Production	37% 63%
Imber of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	38		03 /6
tal Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	20.52		
ads Per Hour (Number of Cycles / Total Number of Haul Hours)	1.85		
imber of Haul Days	2.052	2	
eed Loaded		_	
Max Weight lbs of loaded 745 Tons	164,500.00 82		
20lbs/Ton Rolling weight	4		
Rolling Resistance (1% for each 20lbs/Ton)	4%		
Average Slope Total Resistance	2%		
Max Gear per CAT Chart	6% 4		
Max MPH	8.8		
eed Empty			
Max Weight Ibs of Empty 745 Tons Empty	74,100.00 37		
20lbs/Ton Rolling weight Empty	2		
Rolling Resistance (1% per 20lbs/Ton) Empty	2% 2%		
Average Slope Empty Total Resistance Empty	2% 4%		
Max Gear per CAT Chart Empty	N/A	A Company of the Comp	
Max MPH Empty	N/A	A <mark>l</mark>	

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.072		Project	: KRRP - Iron Gate			
Description	:	Remove Concrete in Penstock	Encasement	Group	: D07			
Quantity	:	710.00 cy						
Daily Production	:	150.00 cy per	10 hour shift	Project #	: 4			
Work Days	:	4.7 Days		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$103.64 per cy		Probable Lo	w Cost Parameter	165	\$66,229	\$106.56
Total Cost	:	\$73,588		Probable Hig	gh Cost Parameter	135	\$80,946	\$130.24

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.7	10	47.00	L	\$53.10	incl. in rate	incl. in rate	\$2,495.56
Laborer	Active	3.00	4.7	10	141.00	L	\$50.38	incl. in rate	incl. in rate	\$7,103.58
Equipment Operator (medium)	Active	4.00	4.7	10	188.00	L	\$72.91	incl. in rate	incl. in rate	\$13,706.70
Truck Driver (heavy)	Active	1.00	3.2	10	31.86	L	\$63.35	incl. in rate	incl. in rate	\$2,018.30
Hydraulic Excavator (2.5cy)	Active	1.00	4.7	10	47.00	E	\$203.63	incl. in rate	incl. in rate	\$9,570.61
Hydraulic Excavator (5.0cy)	Active	1.00	4.7	10	47.00	E	\$274.63	incl. in rate	incl. in rate	\$12,907.61
Loader, FE Rubber Tire (3.5cy)	Active	1.00	4.7	10	47.00	E	\$64.23	incl. in rate	incl. in rate	\$3,018.81
Hydraulic Thumbs/Shear Attachment	Active	1.00	4.7	10	47.00	E	\$16.39	incl. in rate	incl. in rate	\$770.33
Air Tool, Chipping Hammer	Active	1.00	4.7	10	47.00	E	\$1.64	incl. in rate	incl. in rate	\$77.03
Air Compressor 600 cfm	Active	2.00	4.7	10	94.00	E	\$21.74	incl. in rate	incl. in rate	\$2,043.46
Cobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	4.7	10	47.00	E	\$89.29	incl. in rate	incl. in rate	\$4,196.6
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	3.2	10	31.86	E	\$174.47	incl. in rate	incl. in rate	\$5,558.6
				Labor Hours	408				TOTAL LABOR	\$25,324.1
			Equi	ipment Hours	408				TOTAL EQUIPMENT	\$38,143.10

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
onsumables (5% labor)	1.00	LS	1.000	1.00	\$1,266.21		\$1,266.2
						TOTAL MATERIAL	\$1,266

Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	2 EA	Cost per Mob	\$2,500.00	\$5,000.0
Hauling Disposal Cost	2.00 Loads	90lbs per CY	\$400.00	\$800.0

			TOTAL SUBCONTRACTS	ψJ,000.00
			-	
SUMMARY OF COSTS				
Labor Cost	\$25,324.14 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.		\$25,324.14
Material Cost	\$1,266.21 Material Tax @	7.75% \$98.13		\$1,364.3
Equipment Cost	\$38,143.10 Equipment Tax @	7.75% \$2,956.09		\$41,099.19
Subcontractors	\$5,800.00			\$5,800.00
IRECT COST SUBTOTALS	\$70,533	\$3,054	DIRECT COST SUBTOTALS	\$73,588
dditional Pay Item Notes :				
•				

4.072 Remove Concrete in Penstock Encasement Details 0% 5% Bad Weather No Bad Weather Sas Price Increase Gas Price Decrease Inforeseen Contaminated Mats/ Access Issues No Unforeseen Contaminated Mats/ Access Issues roduction Per Hour **Overall Production** 15 120.00 150.00 Haul Notes Excavator Loading Production per shift 710.00 CY per Hour CY 35.56 Swell Factor 60% CY Bucket Size 2.50 Bulk CY 1136 Buckets Per Hour 14 Haul Vehicle 60% Capacity (2 tons per CY) 19.2 # of Excavators 0.50 # of Haul Vehicles CY per Hour (2.5 CY Bucket) 71.11111111 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) CY Per Hour Ideal Productio 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minute: Efficient Compared to Ideal I 75% Haul Speed (Loaded MPH) nefficiencies Compared to I 25% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time **Breaker Production** Load Time (Load Time Minutes / 60mins) 0.13 Hydraulic Hammer CY per He 15 Haul Time (Haul Distance / Haul Speed) 0.14 # of Hammers 2.00 Dump Time (Dump Time Minutes / 60 Mins) 0.05 CY per Hour 35.5555556 Return Time (Haul Distance / Return Speed) 0.06 CY per Hour Back Check 7.5 Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT) 2CY per HR per 8hr shift (lo 32 Efficient Compared to Ideal I Actual Hours Per Cycle (Hours per Cycle / Efficeency Factor) Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) nefficiencies Compared to I 25% Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) 31.86 1.85 Number of Haul Days 3.186 Speed Loaded Max Weight lbs of loaded 745 Tons 82 20lbs/Ton Rolling weight Rolling Resistance (1% for each 20lbs/Ton) 2% 6% Total Resistance Max Gear per CAT Chart Max MPH 8.8 Speed Empty Max Weight lbs of Empty 745 00.00 37 20lbs/Ton Rolling weight Empty Rolling Resistance (1% per 20lbs/Ton) Empty 2% 2% Average Slope Empty 4% N/A Total Resistance Empty Max Gear per CAT Chart Empty Max MPH Empty

Other Notes

PAY ITEM INFORMATION										
PAY ITEM NUMBER	:	4.073		Project	: KRRP - Iron Gate					
Description		Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports		Group	: D07					
						Group	: 007			
Quantity	:	3,110.00	су		_					
Daily Production	:	150.00	cy per	10	hour shift	Project #	: 4			
Work Days	:	20.7	Days	s		Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$95.98	per cy			Probable Low	Cost Parameter	165	\$268,642	\$98.68
Total Cost	:	\$298,491				Probable High	Cost Parameter	135	\$328,340	\$120.61

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	20.7	10	207.00	L	\$53.10	incl. in rate	incl. in rate	\$10,991.08
Laborer	Active	3.00	20.7	10	621.00	L	\$50.38	incl. in rate	incl. in rate	\$31,285.98
Equipment Operator (medium)	Active	4.00	20.7	10	828.00	L	\$72.91	incl. in rate	incl. in rate	\$60,367.82
Truck Driver (heavy)	Active	1.00	7.0	10	70.20	L	\$63.35	incl. in rate	incl. in rate	\$4,447.10
Hydraulic Excavator (2.5cy)	Active	1.00	20.7	10	207.00	E	\$203.63	incl. in rate	incl. in rate	\$42,151.41
Hydraulic Excavator (5.0cy)	Active	1.00	20.7	10	207.00	E	\$274.63	incl. in rate	incl. in rate	\$56,848.41
Loader, FE Rubber Tire (3.5cy)	Active	1.00	20.7	10	207.00	E	\$64.23	incl. in rate	incl. in rate	\$13,295.61
Hydraulic Thumbs/Shear Attachment	Active	1.00	20.7	10	207.00	E	\$16.39	incl. in rate	incl. in rate	\$3,392.73
Air Tool, Chipping Hammer	Active	1.00	20.7	10	207.00	E	\$1.64	incl. in rate	incl. in rate	\$339.28
Air Compressor 600 cfm	Active	2.00	20.7	10	414.00	E	\$21.74	incl. in rate	incl. in rate	\$8,999.91
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	20.7	10	207.00	E	\$89.29	incl. in rate	incl. in rate	\$18,483.03
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	7.0	10	70.20	Е	\$174.47	incl. in rate	incl. in rate	\$12,247.79
			L	abor Hours	1,726				TOTAL LABOR	\$107,091.98
			Equipr	nent Hours	1,726				TOTAL EQUIPMENT	\$155,758.18

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$5,354.60		\$5,354.60
						TOTAL MATERIAL	\$5,354.60

SUBCONTRACT COSTS Description	Quantity U	nits Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	6 EA	Cost per Mob	\$2,500.00		\$15,000.00
Hauling Disposal Cost	7.00 Lo	pads 90lbs per CY	\$400.00		\$2,800.00
				_	
		•		TOTAL SUBCONTRACTS	\$17,800.00

SUMMARY OF COSTS				
Labor Cost	\$107,091.98 Labor Burde	n @ 0.0% \$0.00	Included in hourly labor rate.	\$107,091.98
Material Cost	\$5,354.60 Material Tax	7.75% \$414.98	•	\$5,769.58
Equipment Cost	\$155,758.18 Equipment T	Tax @ 7.75% \$12,071.26		\$167,829.44
Subcontractors	\$17,800.00			\$17,800.00
DIRECT COST SUBTOTALS	\$286,005	\$12,486	DIRECT COST SUBTOTALS	\$298,491
Additional Pay Item Notes :				_

4.073 Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports Details ligh Cost Factors Low Cost Factors No Bad Weather Gas Price Decrease Inforeseen Contaminated Mats/ Access Issues 5% No Unforeseen Contaminated Mats/ Access Issues 10% Total 150.00 Haul Notes Excavator Loading Production per shift 3,110.00 CY per Hour 35.56 60% CY Bucket Size Swell Facto 2.50 4976 Buckets Per Hour Bulk CY 14 Haul Vehicle 60% Capacity (2 tons per CY) 19.2 # of Excavators 1.00 # of Haul Vehicles 2 CY per Hour (2.5 CY Bucket) 35.5555556 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) 8 CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) 3 Efficient Compared to Ideal Production 37% Haul Speed (Loaded MPH) Inefficiencies Compared to Ideal Production 63% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Breaker Production Load Time (Load Time Minutes / 60mins) 0.13 Hydraulic Hammer CY per Hour 15 Haul Time (Haul Distance / Haul Speed) 0.14 # of Hammers 2.00 Dump Time (Dump Time Minutes / 60 Mins) 0.05 CY per Hour 35.5555556 Return Time (Haul Distance / Return Speed) 0.06 CY per Hour Back Check 0.38 32CY per HR per 8hr shift (Ideal prod) 7.5 32 Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT) Efficient Compared to Ideal Production 37% Efficiency Factor (Right Work, Traffic Retrictions, Coffee Breaks, ECT) Actual Hours Per Cycle (Hours per Cycle / Efficency Factor) Number of Cycles (Bulk CY (Head Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days 63% 0.54 Inefficiencies Compared to Ideal Production 130 70.2 1.85 7.02 Speed Loaded Max Weight lbs of loaded 745 Tons 164,500.00 82 20lbs/Ton Rolling weight Rolling Resistance (1% for each 20lbs/Ton) Average Slope Total Resistance 6% Max Gear per CAT Chart Speed Empty Max Weight lbs of Empty 745 Tons Empty 00.00 20lbs/Ton Rolling weight Empty Rolling Resistance (1% per 20lbs/Ton) Empty Average Slope Empty Total Resistance Empty Max Gear per CAT Chart Empty N/A 2% Max MPH Empty N/A

Other Notes

TOTAL MATERIAL

\$304.69

PAY ITEM COST DETAIL WORKSHEET

dditional Pay Item Notes :

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Iron Gate Group Description : D10 Quantity
Daily Production 12,50<u>0.00</u> LBS per 10 hour shift Project # 0.9 Days \$0.98 per LBS Work Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 14375 **Total Cost** Unit Price Per LBS \$0.96 **Unit Price** \$9,204 Probable High Cost Parameter **Total Cost** \$10,829 10625 \$12,453 \$1.29

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.9	10	8.80	L	\$53.10	incl. in rate	incl. in rate	\$467.25
Electrician	Active	1.00	0.9	10	8.80	L	\$49.75	incl. in rate	incl. in rate	\$437.83
Hydraulic Crane (50tn)	Active	1.00	0.9	10	8.80	E	\$134.32	incl. in rate	incl. in rate	\$1,182.02
Equipment Operator (crane)	Active	1.00	0.9	10	8.80	L	\$75.25	incl. in rate	incl. in rate	\$662.21
Vibratory Hammer & Extractor	Active	1.00	0.9	10	8.80	E	\$94.34	incl. in rate	incl. in rate	\$830.19
Laborer	Active	2.00	0.9	10	17.60	L	\$50.38	incl. in rate	incl. in rate	\$886.69
Truck Driver (heavy)	Active	2.00	0.9	10	17.60	L	\$63.35	incl. in rate	incl. in rate	\$1,114.94
Equipment Operator (light)	Active	2.00	0.9	10	17.60	L	\$71.39	incl. in rate	incl. in rate	\$1,256.46
Steelworker	Active	2.00	0.9	10	17.60	L	\$72.07	incl. in rate	incl. in rate	\$1,268.47
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	0.9	10	8.80	Е	\$174.47	incl. in rate	incl. in rate	\$1,535.34
						_				
				Labor Hours	96.8			Т	OTAL LABOR	\$6,093.85
				Equipment Hours	26.4			TOTAL	L EQUIPMENT	\$3,547.54

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$304.69	\$304.69

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent aerial lift, articulating boom, to 80' high, 500 lb. capacity, diesel - Rent per day (RS Means 01543340)	1.00	days	1.000	1.00	\$584.00	\$584.00

				TOTAL SUBCONTRACTS	\$584.00
SUMMARY OF COSTS					
Labor Cost	\$6,093.85 Labor Burn	den @ 49.7	% \$0.00		\$6,093.85
Material Cost	\$304.69 Material T	ax @ 7.75	% \$23.61		\$328.31
Equipment Cost	\$3,547.54 Equipmen	t Tax @ 7.75	% \$274.93		\$3,822.48
Subcontractors	\$584.00				\$584.00
DIRECT COST SUBTOTALS	\$10.530	<u>-</u>	\$299	DIRECT COST SUBTOTALS	\$10.829

The bridge steel grid, excess steel members and similar materials shall be removed from each span prior to removing the main supporting beams, girders or trusses over land. Assumed crew is formed of 1 Forman, 1 Electrician (temporary power for tools), 2 steelworkers to cut steel and 2 Laborers (Load, Haul, help with the crane ropes, etc).

PAY ITEM INFORMATION										
PAY ITEM NUMBER	:	4.075				Project	: KRRP - Iron Gate			
Description		Remove Concrete in Abutment	Intake Str	ructure Footbr		Group	: D07			
Quantity	:	5.00 c	у			= '				
Daily Production	:	100.00 c	y per	10 hour	r shift	Project #	: 4			
Work Days	:	0.1	Days			Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$875.65 p	er cy			Probable Low C	ost Parameter	110	\$3,940	\$900.30
Total Cost	:	\$4,378				Probable High C	ost Parameter	90	\$4,816	\$1,100.37

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$53.10	incl. in rate	incl. in rate	\$53.10
Laborer	Active	4.00	0.1	10	4.00	L	\$50.38	incl. in rate	incl. in rate	\$201.52
Equipment Operator (medium)	Active	2.00	0.1	10	2.00	L	\$72.91	incl. in rate	incl. in rate	\$145.82
Truck Driver (heavy)	Active	1.00	0.1	10	1.00	L	\$63.35	incl. in rate	incl. in rate	\$63.35
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.00	E	\$203.63	incl. in rate	incl. in rate	\$203.63
Hydraulic Excavator (5.0cy)	Active	1.00	0.1	10	1.00	E	\$274.63	incl. in rate	incl. in rate	\$274.63
Loader, FE Rubber Tire (3.5cy)	Active	4.00	0.1	10	4.00	E	\$64.23	incl. in rate	incl. in rate	\$256.92
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	0.1	10	2.00	E	\$111.64	incl. in rate	incl. in rate	\$223.28
Hydraulic Thumbs/Shear Attachment	Active	2.00	0.1	10	2.00	E	\$16.39	incl. in rate	incl. in rate	\$32.78
Air Tool, Chipping Hammer	Active	1.00	0.1	10	1.00	E	\$1.64	incl. in rate	incl. in rate	\$1.64
Air Compressor 600 cfm	Active	1.00	0.1	10	1.00	E	\$21.74	incl. in rate	incl. in rate	\$21.74
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	0.1	10	1.00	E	\$89.29	incl. in rate	incl. in rate	\$89.29
		•	L	abor Hours		8			TOTAL LABOR	\$463.78
			Equip	ment Hours	1	3			TOTAL EQUIPMENT	\$1,103.91

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables (5% labor)	1.00	LS	1.000	1.00	\$23.19		\$23.19
						_	
	•					TOTAL MATERIAL	600.4
						TOTAL MATERIAL	\$23.19

SUBCONTRACT COSTS					
Description	Quantity U	Jnits Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	1 EA	Cost per Mob	\$2,500.00		\$2,500.00
Hauling Disposal Cost	1.00 L	oads 90lbs per CY	\$200.00		\$200.00
					\$0.00
				_	\$0.00
				TOTAL SUBCONTRACTS	\$2,700.00

			TOTAL CODOCNINACIO	Ψ2,100.00
SUMMARY OF COSTS				
Labor Cost	\$463.78 Labor Burden @		/ labor rate.	\$463.78
Material Cost	\$23.19 Material Tax @	7.75% \$1.80		\$24.99
Equipment Cost	\$1,103.91 Equipment Tax (7.75% \$85.55		\$1,189.46
Subcontractors	\$2,700.00			\$2,700.00
DIRECT COST SUBTOTALS	\$4,291	\$87	DIRECT COST SUBTOTALS	\$4,378
Additional Pay Item Notes :				

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - Iron Gate : D07 Description Group emove and Disp Quantity Daily Production Work Days 10 hour shift Project # Estimator 31,250.00 LBS per : 4 : Mihaela Tomulescu Days Unit Price Per LBS LBS per **Total Cost** Unit Price \$0.87 per LBS Probable Low Cost Parameter 35937.5 \$97,037 **Total Cost** \$114,162 Probable High Cost Parameter 26562.5 \$131,286 \$1.14

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Barge, Bargeman, Deckhand, Fireman, Oiler	Active	1.00	4.2	10	42.00	L	\$67.06	incl. in rate	incl. in rate	\$2,816.35
Carpenter Foreman (out)	Active	1.00	4.2	10	42.00	L	\$51.04	incl. in rate	incl. in rate	\$2,143.68
Carpenters, Journeyman	Active	6.00	4.2	10	252.00	L	\$71.91	incl. in rate	incl. in rate	\$18,120.56
Hydraulic Excavator (6.0cy)	Active	2.00	4.2	10	84.00	E	\$322.48	incl. in rate	incl. in rate	\$27,088.32
Hydraulic Crane (120tn)	Active	1.00	4.2	10	42.00	E	\$239.06	incl. in rate	incl. in rate	\$10,040.52
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	4.2	10	42.00	E	\$62.72	incl. in rate	incl. in rate	\$2,634.24
Truck Driver (heavy)	Active	2.00	4.2	10	84.00	L	\$63.35	incl. in rate	incl. in rate	\$5,321.32
Truck, On-Highway Dump (6x4, 12cy)	Active	2.00	4.2	10	84.00	E	\$70.35	incl. in rate	incl. in rate	\$5,909.40

 Labor Hours
 420
 TOTAL LABOR
 \$28,401.91

 Equipment Hours
 252
 TOTAL EQUIPMENT
 \$45,672.48

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Permeable Floating Turbidity Barrier	600.00	lf	1.000	600.00	\$38.00		\$22,800.00
Floating Marker Buoy	7.00	ea	1.000	7.00	\$32.00		\$224.00
Anchor Systems	13.00	ea	1.000	13.00	\$215.00		\$2,795.00
Tow Bridles	2.00	ea	1.000	2.00	\$50.00		\$100.00
Pile Template	1.00	ls	1.000	1.00	\$8,000.00		\$8,000.00
						TOTAL MATERIAL	\$33,919.00

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Contract or Quote Company Price Amount

TOTAL SUBCONTRACTS \$0.00

SUMMARY OF COSTS Material Tax @ Material Cost \$33,919.00 \$2,628,72 \$36,547,72 Equipment Cost Equipment Tax @ \$45,672.48 \$0.00 Subcontractors \$0.00 \$114,162 DIRECT COST SUBTOTALS \$107,993 \$6,168 DIRECT COST SUBTOTALS Additional Pay Item Notes

AECOM best estimate - the crew is formed of 1 Forman, 6 journeyman working with 2 excavators, 1 hydraulic breaker and 1 crane. Using 2 trucks per day for disposal based on daily production.

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate : D03 Project Remove and Dispose of Penstock Vent - 46* Dia, 0.25'
7,440.00 LBS
30,300.00 LBS per 10 hour shift
0.2 Days
\$1.32 per LBS Description Group Quantity
Daily Production
Work Days
Unit Price Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter Unit Price Per LBS \$1.28 LBS per 34845 Total Cost \$8,359 Total Cost \$9,834 Probable High Cost Parameter 25755 \$11,309 \$1.74

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$53.10	incl. in rate	incl. in rate	\$106.19
Laborer	Active	4.00	0.2	10	8.00	L	\$50.38	incl. in rate	incl. in rate	\$403.04
Steelworker	Active	2.00	0.2	10	4.00	L	\$72.07	incl. in rate	incl. in rate	\$288.29
Equipment Operator (crane)	Active	2.00	0.2	10	4.00	L	\$75.25	incl. in rate	incl. in rate	\$301.00
Equipment Operator (medium)	Active	2.00	0.2	10	4.00	L	\$72.91	incl. in rate	incl. in rate	\$291.63
Crawler Crane (90tn)	Active	1.00	0.2	10	2.00	Е	\$208.09	incl. in rate	incl. in rate	\$416.18
Crawler Crane (270tn)	Active	1.00	0.2	10	2.00	Е	\$399.50	incl. in rate	incl. in rate	\$799.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.2	10	2.00	Е	\$75.42	incl. in rate	incl. in rate	\$150.84
Hydraulic Excavator (5.0cy)	Active	1.00	0.2	10	2.00	E	\$274.63	incl. in rate	incl. in rate	\$549.26
Boomlift (JLG 60')	Active	2.00	0.2	10	4.00	E	\$52.87	incl. in rate	incl. in rate	\$211.48
Acetylene Torches	Active	4.00	0.2	10	8.00	Е	\$0.47	incl. in rate	incl. in rate	\$3.76
Air Compressor 600 cfm	Active	2.00	0.2	10	4.00	E	\$21.74	incl. in rate	incl. in rate	\$86.96
Generator, Small Generator, 10 - 15 kW	Active	2.00	0.2	10	4.00	E	\$7.04	incl. in rate	incl. in rate	\$28.16
Hepa Vac System	Active	4.00	0.2	10	8.00	E	\$0.47	incl. in rate	incl. in rate	\$3.76
				Labor Hours	22				TOTAL LABOR	\$1,390.16
				Equipment Hours	36			TO	TAL EQUIPMENT	\$2,249.40

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
torch gas, etc)	1.00	LS	1.000	1.00	\$278.03	\$278.03
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10% of total)	0.37	ton		\$595.00	\$221.34
Hauling Disposal Cost	0.19	Loads	20 tons a load	\$600.00	\$111.60
Trading Disposar Cost	0.13	Louds	25 tono a load	\$600.00	\$111.00
				TOTAL CURCONT	DACTE \$222.04

			TOTAL SUBCONTRACTS	\$332.94
SUMMARY OF COSTS				
Labor Cost	\$1,390.16 Labor Burden @	49.7% \$0.00		\$1,390.16
Material Cost	\$5,278.03 Material Tax @	7.75% \$409.05		\$5,687.08
Equipment Cost	\$2,249.40 Equipment Tax @	7.75% \$174.33		\$2,423.73
Subcontractors	\$332.94			\$332.94
DIRECT COST SUBTOTALS	\$9,251	\$583	DIRECT COST SUBTOTALS	\$9,834
Additional Pay Item Notes :			·	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.082	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Penstock - 12' Dia, 0.25" Thick x 698'	Group	: D03			
Quantity	:	294,428.00 LBS					
Daily Production	:	30,300.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	9.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.04 per LBS	Probable Low	Cost Parameter	34845	\$260,274	\$1.01
Total Cost		\$306.205	Probable High	Cost Parameter	25755	\$352,136	\$1.37

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	9.7	10	97.00	L	\$53.10	incl. in rate	incl. in rate	\$5,150.41
Laborer	Active	4.00	9.7	10	388.00	L	\$50.38	incl. in rate	incl. in rate	\$19,547.44
Steelworker	Active	2.00	9.7	10	194.00	L	\$72.07	incl. in rate	incl. in rate	\$13,981.97
Equipment Operator (crane)	Active	2.00	9.7	10	194.00	L	\$75.25	incl. in rate	incl. in rate	\$14,598.69
Equipment Operator (medium)	Active	2.00	9.7	10	194.00	L	\$72.91	incl. in rate	incl. in rate	\$14,144.15
Crawler Crane (90tn)	Active	1.00	9.7	10	97.00	E	\$208.09	incl. in rate	incl. in rate	\$20,184.73
Crawler Crane (270tn)	Active	1.00	9.7	10	97.00	E	\$399.50	incl. in rate	incl. in rate	\$38,751.50
Loader, FE Rubber Tire (5.25cy)	Active	1.00	9.7	10	97.00	E	\$75.42	incl. in rate	incl. in rate	\$7,315.74
Hydraulic Excavator (5.0cy)	Active	1.00	9.7	10	97.00	E	\$274.63	incl. in rate	incl. in rate	\$26,639.11
Boomlift (JLG 60')	Active	2.00	9.7	10	194.00	E	\$52.87	incl. in rate	incl. in rate	\$10,256.78
Acetylene Torches	Active	4.00	9.7	10	388.00	E	\$0.47	incl. in rate	incl. in rate	\$182.36
Air Compressor 600 cfm	Active	2.00	9.7	10	194.00	E	\$21.74	incl. in rate	incl. in rate	\$4,217.56
Generator, Small Generator, 10 - 15 kW	Active	2.00	9.7	10	194.00	E	\$7.04	incl. in rate	incl. in rate	\$1,365.76
Hepa Vac System	Active	4.00	9.7	10	388.00	E	\$0.47	incl. in rate	incl. in rate	\$182.36
				Labor Hours	1067				TOTAL LABOR	\$67,422.66
				Equipment Hours	1746			TO	TAL EQUIPMENT	\$109,095.90

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
torch gas, etc)	1.00	LS	1.000	1.00	\$13,484.53	\$13,484.53
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Access Allowance Down slope	1 AL		\$25,000.00	\$25,000.00
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% of total)				
	36.80 ton		\$595.00	\$21,898.08
Hauling Disposal Cost	7.36 Loads	20 tons a load	\$600.00	\$4,416.42
Shoring Allowance	1 AL		\$50,000.00	\$50,000.00
			TO	OTAL SUBCONTRACTS \$101,314.50

SUMMARY OF COSTS						
Labor Cost	\$67,422.66 La	bor Burden @	49.7%	\$0.00		\$67,422.66
Material Cost	\$18,484.53 Ma	aterial Tax @	7.75%	\$1,432.55		\$19,917.08
Equipment Cost	\$109,095.90 Eq	uipment Tax @	7.75%	\$8,454.93		\$117,550.83
Subcontractors	\$101,314.50					\$101,314.50
DIRECT COST SUBTOTALS	\$296,318			\$9,887	DIRECT COST SUBTOTALS	\$306,205
Additional Pay Item Notes :						

TOTAL MATERIAL

\$5,417.05

PAY ITEM COST DETAIL WORKSHEET

 PAY ITEM INFORMATION

 PAY ITEM NUMBER
 4.083
 Project
 : KRRP - Iron Gate

 Description
 :
 Remove and Dispose of Bypass Outlet - 96° Dia, 0.25° Thick x 50'
 Group
 : D03

 Quantity
 :
 12,800.00 [LBS]
 Project # : 4

 Daily Production
 :
 50,500.00 [LBS per 10]
 hour shift
 Project # : 4

 Work Days
 :
 0.3 Days
 Estimator : Mihaela Tomulescu
 LBS per Total Cost
 Unit Price Per LBS

 Unit Price
 :
 \$0.99 per LBS
 Probable Low Cost Parameter
 58075
 \$10,796
 \$0.96

 Total Cost
 :
 \$12,702
 Probable High Cost Parameter
 42925
 \$14,607
 \$1.30

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$53.10	\$0.00		\$159.29
Laborer	Active	4.00	0.3	10	12.00	L	\$50.38	\$0.00		\$604.56
Steelworker	Active	2.00	0.3	10	6.00	L	\$72.07	\$0.00		\$432.43
Equipment Operator (crane)	Active	2.00	0.3	10	6.00	L	\$75.25	\$0.00		\$451.51
Equipment Operator (medium)	Active	2.00	0.3	10	6.00	L	\$72.91	\$0.00		\$437.45
Crawler Crane (90tn)	Active	1.00	0.3	10	3.00	E	\$208.09	\$208.09		\$624.27
Crawler Crane (270tn)	Active	1.00	0.3	10	3.00	E	\$399.50	\$446.84		\$1,198.50
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.3	10	3.00	E	\$75.42	\$75.42		\$226.26
Hydraulic Excavator (5.0cy)	Active	1.00	0.3	10	3.00	E	\$274.63	\$274.63		\$823.89
Boomlift (JLG 60')	Active	2.00	0.3	10	6.00	E	\$52.87	incl. in rate	incl. in rate	\$317.22
Acetylene Torches	Active	4.00	0.3	10	12.00	E	\$0.47	incl. in rate	incl. in rate	\$5.64
Air Compressor 600 cfm	Active	2.00	0.3	10	6.00	E	\$21.74	incl. in rate	incl. in rate	\$130.44
Generator, Small Generator, 10 - 15 kW	Active	2.00	0.3	10	6.00	E	\$7.04	incl. in rate	incl. in rate	\$42.24
Hepa Vac System	Active	4.00	0.3	10	12.00	E	\$0.47	incl. in rate	incl. in rate	\$5.64
				Labor Hours	33			1	TOTAL LABOR	\$2,085.24
				Equipment Hours	54			TOTAL	L EQUIPMENT	\$3,374.10

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
gas, etc)	1.00	LS	1.000	1.00	\$417.05	\$417.05
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00
Translated Officers	4.00	LA	1.000	4.00	\$250.00	Ψ

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% of total)			Company		, and an
Hauling Disposal Cost	1.60 0.32	ton Loads	20 tons a load	\$595.00 \$600.00	\$952.00 \$192.00
				TOTAL S	SUBCONTRACTS \$1,144.00

SUMMARY OF COSTS						
Labor Cost	\$2,085.24	Labor Burden @	49.7%	\$0.00		\$2,085.24
Material Cost	\$5,417.05	Material Tax @	7.75%	\$419.82		\$5,836.87
Equipment Cost	\$3,374.10	Equipment Tax @	7.75%	\$261.49		\$3,635.59
Subcontractors	\$1,144.00					\$1,144.00
DIRECT COST SUBTOTALS	\$12,020			\$681	DIRECT COST SUBTOTALS	\$12,702
Additional Pay Item Notes :						

TOTAL MATERIAL

\$7,224.25

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate : D03 Project Group Description
Quantity
Daily Production
Work Days
Unit Price 11,250.00 LBS per 1.6 Days \$2.22 per LBS 10 hour shift Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter LBS per 12937.5 Total Cost \$33,918 Unit Price Per LBS \$2.15 Total Cost \$39,904 Probable High Cost Parameter 9562.5 \$45,890 \$2.91

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$53.10	incl. in rate	incl. in rate	\$849.55
Laborer	Active	4.00	1.6	10	64.00	L	\$50.38	incl. in rate	incl. in rate	\$3,224.32
Steelworker	Active	2.00	1.6	10	32.00	L	\$72.07	incl. in rate	incl. in rate	\$2,306.30
Equipment Operator (crane)	Active	2.00	1.6	10	32.00	L	\$75.25	incl. in rate	incl. in rate	\$2,408.03
Equipment Operator (medium)	Active	2.00	1.6	10	32.00	L	\$72.91	incl. in rate	incl. in rate	\$2,333.06
Crawler Crane (90tn)	Active	1.00	1.6	10	16.00	E	\$208.09	incl. in rate	incl. in rate	\$3,329.44
Crawler Crane (270tn)	Active	1.00	1.6	10	16.00	E	\$399.50	incl. in rate	incl. in rate	\$6,392.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.6	10	16.00	E	\$75.42	incl. in rate	incl. in rate	\$1,206.72
Hydraulic Excavator (5.0cy)	Active	1.00	1.6	10	16.00	E	\$274.63	incl. in rate	incl. in rate	\$4,394.08
Boomlift (JLG 60')	Active	2.00	1.6	10	32.00	E	\$52.87	incl. in rate	incl. in rate	\$1,691.84
Acetylene Torches	Active	4.00	1.6	10	64.00	E	\$0.47	incl. in rate	incl. in rate	\$30.08
Air Compressor 600 cfm	Active	2.00	1.6	10	32.00	E	\$21.74	incl. in rate	incl. in rate	\$695.68
Generator, Small Generator, 10 - 15 kW	Active	2.00	1.6	10	32.00	E	\$7.04	incl. in rate	incl. in rate	\$225.28
Hepa Vac System	Active	4.00	1.6	10	64.00	E	\$0.47	incl. in rate	incl. in rate	\$30.08
Topa vao Oyaoni	7,0,170	1.00	1.0	Labor Hours	176		ψο. 11		TOTAL LABOR	\$11,121.26
				Equipment Hours	288			TOTA	L EQUIPMENT	\$17,995.20

Description	ltem	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
gas, etc)	1.00	LS	1.000	1.00	\$2,224.25	\$2,224.25
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25% of total)			Company	Trice	Allivant
Hauling Disposal Cost	2.25 0.45	ton Loads	20 tons a load	\$595.00 \$600.00	\$1,338.7 \$270.0
				TOTAL SUBCONT	RACTS \$1.608

SUMMARY OF COSTS			
Labor Cost	\$11,121.26 Labor Burden @	49.7% \$0.00	\$11,1
Material Cost	\$7,224.25 Material Tax @	7.75% \$559.88	\$7,7
Equipment Cost	\$17,995.20 Equipment Tax @	7.75% \$1,394.63	\$19,3
Subcontractors	\$1,608.75		\$1,6
DIRECT COST SUBTOTALS	\$37,949	\$1,955	DIRECT COST SUBTOTALS \$3
Additional Pay Item Notes :			

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.087	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose Power Cable and Conduit	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.50 EA per 10 hour shift	Project #	: 4			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$24,879.73 per EA	Probable Low Cos	st Parameter	0.575	\$21,148	\$24,159
Total Cost	:	\$24,880	Probable High Co	st Parameter	0.425	\$28,612	\$32,686

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	2.00	2.0	10	40.00	L	\$51.95	incl. in rate	incl. in rate	\$2,078.12
Electrician	Active	8.00	2.0	10	160.00	L	\$49.75	incl. in rate	incl. in rate	\$7,960.48
Laborer	Active	6.00	2.0	10	120.00	L	\$50.38	incl. in rate	incl. in rate	\$6,045.60
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.91	incl. in rate	incl. in rate	\$1,458.16
Hydraulic Excavator (5.0cy)	Active	1.00	2.0	10	20.00	E	\$274.63	incl. in rate	incl. in rate	\$5,492.60
				Labor Hours	340				TOTAL LABOR	\$17,542.36
				Equipment Hours	20			TO	TAL EQUIPMENT	\$5,492.60

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$877.12		\$877.12
						TOTAL MATERIAL	\$877.12

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL SUBCOM	NTRACTS \$474.00

SUMMARY OF COSTS						
Labor Cost	\$17,542.36 Lab	oor Burden @	49.7%	\$0.00		\$17,542.36
Material Cost	\$877.12 Mat	terial Tax @	7.75%	\$67.98		\$945.09
Equipment Cost	\$5,492.60 Equ	uipment Tax @	7.75%	\$425.68		\$5,918.28
Subcontractors	\$474.00		•			\$474.00
DIRECT COST SUBTOTALS	\$24,386			\$494	DIRECT COST SUBTOTALS	\$24,880
Additional Pay Item Notes :						

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Iron Gate Group Description : D11 Clear and Grub Disposal Area Quantity
Daily Production
Work Days
Unit Price 2.00 AC per 14.5 Days 10 hour shift Project # Estimator : 4 : Eric Jones AC per 2.3 Unit Price Per AC Total Cost \$3,593.19 per AC Probable Low Cost Parameter \$88,572 \$3,489.13 Total Cost \$104,203 Probable High Cost Parameter 1.7 \$119,833 \$4,720.59

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman (out)	Active	1.00	14.5	10	145.00	L	\$50.90	incl. in rate	incl. in rate	\$7,380.07
Equipment Operator (medium)	Active	2.00	14.5	10	290.00	L	\$72.91	incl. in rate	incl. in rate	\$21,143.32
Laborer	Active	4.00	14.5	10	580.00	L	\$50.38	incl. in rate	incl. in rate	\$29,220.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	14.5	10	145.00	Е	\$75.42	incl. in rate	incl. in rate	\$10,935.90
0 0 0 0										
Brush Chipper	Active	1.00	14.5	10	145.00	E	\$50.55	incl. in rate	incl. in rate	\$7,329.75
Crawler Loader 3CY Bucket	Active	1.00	14.5	10	145.00	E	\$160.13	incl. in rate	incl. in rate	\$23,218.85
Chain Saw, Gas, 36" Long	Active	2.00	14.5	10	290.00	E	\$5.63	incl. in rate	incl. in rate	\$1,632.70
						_			<u>.</u>	
				Labor Hours	1015				TOTAL LABOR	\$57,743.79
			Equi	pment Hours	725				TOTAL EQUIPMENT	\$43,117.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$57,743.79	Labor Burden @	0.0%			\$57,743.79
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$43,117.20	Equipment Tax @	7.75%	\$3,341.58		\$46,458.78
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$100.861	= <u>-</u> '		\$3.342	DIRECT COST SUBTOTALS	\$104,203
DIRECT COST SUBTOTALS	Ψ100,001			40,0.2	DIRECT COST SUBTOTALS	\$104,203
Additional Pay Item Notes :	\$100,001			40,0.1	DIRECT COST SUBTOTALS	\$104,203

 PAY ITEM INFORMATION

 PAY ITEM NUMBER
 4.099
 Project
 : KRRP - Iron Gate

 Description
 :
 Clear and Grub, 40' width for 1 mile - Prepare Haul Road - 1.25 mi
 Group
 : #N/A

 Quantity
 :
 5.00 AC
 Total Cost
 Init Price Per AC

 Daily Production
 :
 2.00 AC per
 10 hour shift
 Project # : 4
 Estimator
 : Mihaela Tomulescu
 AC per
 Total Cost
 Unit Price Per AC

 Unit Price
 :
 \$2,479.21 per AC
 Probable Low Cost Parameter
 2.3
 \$10,537
 \$2,407

Work Days Unit Price Total Cost		.5 Days 1 per AC	10 hour shif		Project # Estimator Probable Low C Probable High C	ost Paramet		AC per 2.3 1.7	Total Cost \$10,537 \$14,255	Unit Price Per AC \$2,407 \$3,257
REW COSTS Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.5	10	25.00	L	\$53.10	incl. in rate	incl. in rate	\$1,327.
Equipment Operator (medium)	Active	1.00	2.5	10	25.00	L	\$72.91	incl. in rate	incl. in rate	\$1,822.
Laborer	Active	4.00	2.5	10	100.00	L	\$50.38	incl. in rate	incl. in rate	\$5,038.
Grader, 180hp, 13' blade	Active	1.00	2.5	10	25.00	E	\$80.79	incl. in rate	incl. in rate	\$2,019.
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.5	10	25.00	E	\$75.42	incl. in rate	incl. in rate	\$1,885
				Labor Hours Equipment Hours	150 50			тот	TOTAL LABOR	\$8,188 \$3,905
ATERIAL COSTS										
IATERIAL COSTS Description	Item Quantity	Order Unit		onversion ctor / Waste	Order Quantity		Order Price			Material Cost
										Cost
								то	DTAL MATERIAL	Cost
Description								то	DTAL MATERIAL	Cost
Description			Fac	tor / Waste		Unit	Price	10	DTAL MATERIAL	Cost \$0 Contract or Quote
Description UBCONTRACT COSTS	Quantity	Unit	Fac	ctor / Waste		Unit Price	Price	тс	DTAL MATERIAL	Cost \$0
Description UBCONTRACT COSTS	Quantity	Unit	Fac	tor / Waste			Price		DTAL MATERIAL	Cost \$(Contract or Quote Amount
Description UBCONTRACT COSTS Description	Quantity	Unit	Fac	tor / Waste			Price			Cost \$0 Contract or Quote Amount
UBCONTRACT COSTS Description UMMARY OF COSTS	Quantity	Unit	Fac	Notes / Company	Quantity	Price	Price			Cost \$0 Contract or Quote Amount
UBCONTRACT COSTS Description UMMARY OF COSTS Labor Cost	Quantity Quantity \$8,188.1:	Units Units	Fac	Notes / Company	Quantity \$0.00	Price	Price			Cost \$0 Contract or Quote Amount \$0
UBCONTRACT COSTS Description UMMARY OF COSTS abor Cost Material Cost Equipment Cost	Quantity Quantity \$8,188.1: \$0.0 \$3,905.2:	Units Units Labor Burden (0 Material Tax (5 Equipment Tax	Fac	Notes / Company	Quantity	Price	Price			Cost \$0 Contract or Quote Amount \$0 \$8,188 \$4,207
UBCONTRACT COSTS Description UMMARY OF COSTS Labor Cost Material Cost Equipment Cost	Quantity Quantity \$8,188.1: \$0.00	Units Units Labor Burden (0 Material Tax (5 Equipment Tax	Fac	Notes / Company 49.7%	Quantity \$0.00 \$0.00	Price	Price			Cost \$0 Contract or Quote Amount \$0 \$8,188 \$80 \$4,207
Description UBCONTRACT COSTS	Quantity Quantity \$8,188.1: \$0.0 \$3,905.2:	Units Units Labor Burden of Material Tax @ 5 Equipment Tax 0	Fac	Notes / Company 49.7%	Quantity \$0.00 \$0.00	Price	Price	TOTAL S		Cost \$0.

PAY ITEM COST DETAIL WORKSHEET 4.101 Remove Building No. 2

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.101	Project : KRRP - Iron Gate			
Description	:	Remove Building No. 2	Group : D10			
Quantity	:	800.00 SF	_			
Daily Production	:	1,125.00 SF per 10 hour shift	Project # : 4			
Work Days	:	0.7 Days	Estimator : Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.04 per SF	Probable Low Cost Parameter	1237.5	\$10,111	\$14
Total Cost	:	\$11,235	Probable High Cost Parameter	956.25	\$12,920	\$18

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.7	10	7.10	L	\$53.10	incl. in rate	incl. in rate	\$376.99
Laborer	Active	4.00	0.7	10	28.40	L	\$50.38	incl. in rate	incl. in rate	\$1,430.79
Equipment Operator (oiler)	Active	2.00	0.7	10	14.20	L	\$69.23	incl. in rate	incl. in rate	\$983.12
Hydraulic Excavator (5.0cy)	Active	1.00	0.7	10	7.10	E	\$274.63	incl. in rate	incl. in rate	\$1,949.87
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.7	10	7.10	Е	\$75.42	incl. in rate	incl. in rate	\$535.48
				Labor Hours	49.7				TOTAL LABOR	\$2,790.90
				Equipment Hours	14.2			TO	TAL EQUIPMENT	\$2,485.36

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Dump Fee Conversion (SFXH*.33/27)	117 CY			
Conversion CY to Tons (2 tons per CY)	59.00 tons	Klamath County Landfill	\$74.00	\$4,366.
Hauling cost to landfill	7.00 Loads	18 CY per load	\$200.00	\$1,400.

SUMMARY OF COSTS				
Labor Cost	\$2,790.90 Labor Burden @	49.7% \$0.00		\$2,790.90
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$2,485.36 Equipment Tax @	7.75% \$192.62		\$2,677.97
Subcontractors	\$5,766.00			\$5,766.00
DIRECT COST SUBTOTALS	\$11,042	\$193	DIRECT COST SUBTOTALS	\$11,235
Additional Pay Item Notes :			<u></u>	

PAY ITEM COST DETAIL WORKSHEET 4.102 Remove Building No. 3

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.102	Project : KRRP - Iron Gate			
Description	:	Remove Building No. 3	Group : D10			
Quantity	:	1,088.00 SF				
Daily Production	:	1,125.00 SF per 10 hour shift	Project # : 4			
Work Days	:	1.0 Days	Estimator : Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$13.96 per SF	Probable Low Cost Parameter	1237.5	\$13,672	\$14
Total Cost	:	\$15,192	Probable High Cost Parameter	956.25	\$17,470	\$18

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	10	9.70	L	\$53.10	incl. in rate	incl. in rate	\$515.0
Laborer	Active	4.00	1.0	10	38.80	L	\$50.38	incl. in rate	incl. in rate	\$1,954.7
Equipment Operator (oiler)	Active	2.00	1.0	10	19.40	L	\$69.23	incl. in rate	incl. in rate	\$1,343.1
Hydraulic Excavator (5.0cy)	Active	1.00	1.0	10	9.70	E	\$274.63	incl. in rate	incl. in rate	\$2,663.9
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.0	10	9.70	E	\$75.42	incl. in rate	incl. in rate	\$731.5
				_						
				Labor Hours	67.9				TOTAL LABOR	\$3,812
				Equipment Hours	19.4			TO.	TAL EQUIPMENT	\$3,395

Description	Item	Order	Conversion	Order	Order	Materi
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS Description Quantity Units Notes / Unit Contract or Quotity Units Notes / Un										
Description	Quantity Units	Company	Price		Amount					
Dump Fee Conversion (SFXH*.33/27)	160 CY									
Conversion CY to Tons (2 tons per CY) Hauling cost to landfill	80.00 tons 9.00 Loads	Klamath County Landfill 18 CY per load	\$74.00 \$200.00	_	\$5,920.00 \$1,800.00					
				TOTAL SUBCONTRACTS	\$7,720.00					

SUMMARY OF COSTS						
Labor Cost		Labor Burden @	49.7%	\$0.00		\$3,812.92
Material Cost		Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost		Equipment Tax @	7.75%	\$263.15		\$3,658.64
Subcontractors	\$7,720.00					\$7,720.00
DIRECT COST SUBTOTALS	\$14,928			\$263	DIRECT COST SUBTOTALS	\$15,192
Additional Pay Item Notes :						

TOTAL MATERIAL

\$2,234.03

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Iron Gate Project Description : D07 Group 1,240.00 cy Quantity Daily Production 150.00 cy per 8.3 10 hour shift Project # Estimator Work Days Days : Eric Jones Total Cost Unit Price Per cy cy per 165 \$102.94 per cy **Probable Low Cost Parameter** \$114,882 \$105.84 **Total Cost** \$127,646 Probable High Cost Parameter 135 \$140,411 \$129.36

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.3	10	83.00	L	\$53.10	incl. in rate	incl. in rate	\$4,407.05
Laborer	Active	3.00	8.3	10	249.00	L	\$50.38	incl. in rate	incl. in rate	\$12,544.62
Equipment Operator (medium)	Active	4.00	8.3	10	332.00	L	\$72.91	incl. in rate	incl. in rate	\$24,205.46
Truck Driver (heavy)	Active	1.00	5.6	10	55.62	L	\$63.35	incl. in rate	incl. in rate	\$3,523.47
Hydraulic Excavator (2.5cy)	Active	1.00	8.3	10	83.00	E	\$203.63	incl. in rate	incl. in rate	\$16,901.29
Hydraulic Excavator (5.0cy)	Active	1.00	8.3	10	83.00	E	\$274.63	incl. in rate	incl. in rate	\$22,794.29
Loader, FE Rubber Tire (3.5cy)	Active	1.00	8.3	10	83.00	E	\$64.23	incl. in rate	incl. in rate	\$5,331.09
Hydraulic Thumbs/Shear Attachment	Active	1.00	8.3	10	83.00	E	\$16.39	incl. in rate	incl. in rate	\$1,360.37
Air Tool, Chipping Hammer	Active	1.00	8.3	10	83.00	E	\$1.64	incl. in rate	incl. in rate	\$136.04
Air Compressor 600 cfm	Active	2.00	8.3	10	166.00	E	\$21.74	incl. in rate	incl. in rate	\$3,608.66
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	8.3	10	83.00	Е	\$89.29	incl. in rate	incl. in rate	\$7,411.07
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	5.6	10	55.62	Е	\$174.47	incl. in rate	incl. in rate	\$9,704.02
			-	Labor Hours	720				TOTAL LABOR	\$44,680.60
			Equip	ment Hours	720				TOTAL EQUIPMENT	\$67,246.83

Description		Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
ssumables (5% labor)	1.00	LS	1.000	1.00	\$2,234.03	\$2,234

Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	3 EA	Cost per Mob	\$2,500.00	\$7,500.0
Hauling Disposal Cost	3.00 Loads	90lbs per CY	\$200.00	\$600.0

SUMMARY OF COSTS			
Labor Cost	\$44,680.60 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.	\$44,680.60
Material Cost	\$2,234.03 Material Tax @	7.75% \$173.14	\$2,407.17
Equipment Cost	\$67,246.83 Equipment Tax @	7.75% \$5,211.63	\$72,458.46
Subcontractors	\$8,100.00		\$8,100.00
DIRECT COST SUBTOTALS	\$122,261	\$5,385	DIRECT COST SUBTOTALS \$127,646

Additional Pay Item Notes :

The work is done by two 6-men crew (foreman, 4 laborers, and 1 equipment operator). Concrete hauling to disposal site - based on the current production rate, only 5 trips a day would be necessary. Demolition is done using hydraulic chipping hammers and excavator mounted claw. Allowance for saw cutting sub is included at one mobilization a week. Blasting method is not found to be feasible for this work. A check using RS Means was used: reference 03055110 (\$224/CY, excludes hauling, sawing, and dumping) - Selective concrete demolition, reinforcing more than 2% cross-sectional area.

4.103 Remove Concrete in Fish Ladder **Details** ligh Cost Factors Low Cost Factors 3ad Weather No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues Sas Price Increase nforeseen Contaminated Mats/ Access Issues Total Production Per Hou **Haul Notes** Excavator Loading Production per shift 1,240.00 CY per Hour 35.56 CY Swell Factor 60% CY Bucket Size 2.50 Bulk CY 1984 Buckets Per Hour 14 19.2 # of Excavators Haul Vehicle 60% Capacity (2 tons per CY) 0.50 1 CY per Hour (2.5 CY Bucket) # of Haul Vehicles 71.11111111 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) 8 CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Efficient Compared to Ideal Production 75% Haul Speed (Loaded MPH) 9 Inefficiencies Compared to Ideal Production 25% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Breaker Production Load Time (Load Time Minutes / 60mins) 0.13 Hydraulic Hammer CY per Hour 15 Haul Time (Haul Distance / Haul Speed) 0.14 # of Hammers 2.00 Dump Time (Dump Time Minutes / 60 Mins) 0.05 CY per Hour 35.5555556 Return Time (Haul Distance / Return Speed) 0.06 CY per Hour Back Check 0.38 32CY per HR per 8hr shift (Ideal pro 7.5 32 Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Efficient Compared to Ideal Production 75% Emciency Factor (Night Work, Irathic Restrictions, Coffee Breaks, ECI) Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days Inefficiencies Compared to Ideal Production 103 55.62 1.85 5.562 Speed Loaded Max Weight lbs of loaded 745 164,500 82 20lbs/Ton Rolling weight 411% Rolling Resistance (1% for each 20lbs/Ton) Average Slope Total Resistance 0.061125 Max Gear per CAT Chart Max MPH Speed Empty Max Weight lbs of Empty 745 74,100 Tons Empty 37 20lbs/Ton Rolling weight Empty Rolling Resistance (1% per 20lbs/Ton) Empty 185% Average Slope Empty Total Resistance Empty Max Gear per CAT Chart Empty N/A

Other Notes

 PAY ITEM INFORMATION

 PAY ITEM NUMBER
 4.104
 Project
 : KRRP - Iron Gate

 Description
 :
 Remove Concrete in Holding Ponds #1 thru #6
 Group
 : D07

 Quantity
 :
 1,380.00 [CY
 Inchested From Concrete in Holding Ponds #1 thru #6
 Froject # : 4

 Daily Production
 :
 150.00 [CY per | 10 | hour shift
 Project # : 4

 Work Days
 :
 9.2 Days
 Estimator : Mihaela Tomulescu
 CY per | Total Cost | Unit Price Per CY | Unit Price Per CY | Probable Low Cost Parameter
 157.5 | \$122,367 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$107 | \$1

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	9.2	10	92.00	L	\$53.10	incl. in rate	incl. in rate	\$4,884.9
Laborer	Active	3.00	9.2	10	276.00	L	\$50.38	incl. in rate	incl. in rate	\$13,904.88
Equipment Operator (medium)	Active	4.00	9.2	10	368.00	L	\$72.91	incl. in rate	incl. in rate	\$26,830.14
Truck Driver (heavy)	Active	1.00	4.7	10	47.15	L	\$63.35	incl. in rate	incl. in rate	\$2,986.91
Hydraulic Excavator (2.5cy)	Active	1.00	9.2	10	92.00	E	\$203.63	incl. in rate	incl. in rate	\$18,733.96
Hydraulic Excavator (5.0cy)	Active	1.00	9.2	10	92.00	E	\$274.63	incl. in rate	incl. in rate	\$25,265.96
Loader, FE Rubber Tire (3.5cy)	Active	2.00	9.2	10	184.00	E	\$64.23	incl. in rate	incl. in rate	\$11,818.32
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	9.2	10	92.00	E	\$62.72	incl. in rate	incl. in rate	\$5,770.2
200 071		4.00			22.22		00.74			**
Air Compressor 600 CFM	Active	1.00	9.2	10	92.00	E	\$21.74	incl. in rate	incl. in rate	\$2,000.0
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	9.2	10	92.00	E	\$89.29	incl. in rate	incl. in rate	\$8,214.68
Air Tool Chipping Hammer	Active	2.00	9.2	10	184.00	E	\$1.64	incl. in rate	incl. in rate	\$301.76
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	4.7	10	47.15	E	\$174.47	incl. in rate	incl. in rate	\$8,226.26
				Labor Hours	783.15				TOTAL LABOR	\$48,606.8

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	•	Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

Quantity	Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
4.00	Loads	90lbs per CY	\$200.00	\$800.00
			TC	TAL SUBCONTRACTS \$800.00
	•	•	Company	Company Price 4.00 Loads 90lbs per CY \$200.00

SUMMARY OF COSTS						
Labor Cost	\$48,606.85 Lab	bor Burden @	49.7%	\$0.00		\$48,606.85
Material Cost	\$0.00 Mat	terial Tax @	7.8%	\$0.00		\$0.00
Equipment Cost	\$80,331.26 Equ	uipment Tax @	7.8%	\$6,225.67		\$86,556.93
Subcontractors	\$800.00					\$800.00
DIRECT COST SUBTOTALS	\$129,738			\$6,226	DIRECT COST SUBTOTALS	\$135,964
Additional Pay Item Notes :						

4.104 Remove Concrete in Holding Ponds #1 thru #6 Details High Cost Factors Low Cost Factors Bad Weather Bas Price Increase 5% 5% No Bad Weather Gas Price Decrease No Unforeseen Contar 15 120.00 Excavator Loading Production per shift 1,380.00 CY per Hour 46.83 60% CY Bucket Size Swell Factor 2.50 Bulk CY 2208 Buckets Per Hour 19 Haul Vehicle 60% Capacity (2 tons per CY) 19.2 # of Excavators 1.00 # of Haul Vehicles CY per Hour (2.5 CY Bucket) 46.82926829 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Efficient Compared to Ideal Production 49% Haul Speed (Loaded MPH) Inefficiencies Compared to Ideal Production 51% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Load Time (Load Time Minutes / 60mins) 0.13 Hydraulic Hammer CY per Hour 15 Haul Time (Haul Distance / Haul Speed) 0.13 # of Hammers 1.00 0.05 CY per Hour Dump Time (Dump Time Minutes / 60 Mins) 46.82926829 Return Time (Haul Distance / Return Speed) 0.06 CY per Hour Back Check 0.37 32CY per HR per 8hr shift (Ideal prod) 15 Hours Per Cycle 0.37 32 Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Efficient Compared to Ideal Production Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) 51% 0.41 Inefficiencies Compared to Ideal Production 47.15 Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days 4.715 Speed Loaded Max Weight lbs of loaded 745 164,500 82 411% Rolling Resistance (1% for each 20lbs/Ton) Average Slope 2% Total Resistance 0.061125 Max Gear per CAT Chart Max MPH Speed Empty Max Weight lbs of Empty 745 74,100 37 20lbs/Ton Rolling weight Empty Rolling Resistance (1% per 20lbs/Ton) Empty 185% 2% Average Slope Empty Total Resistance Empty 0.038525 Max Gear per CAT Chart Empty N/A Other Notes

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.0	10	80.00	L	\$53.10	incl. in rate	incl. in rate	\$4,247.76
Laborer	Active	3.00	8.0	10	240.00	L	\$50.38	incl. in rate	incl. in rate	\$12,091.20
Equipment Operator (medium)	Active	4.00	8.0	10	320.00	L	\$72.91	incl. in rate	incl. in rate	\$23,330.56
Truck Driver (heavy)	Active	1.00	4.1	10	41.00	L	\$63.35	incl. in rate	incl. in rate	\$2,597.31
Hydraulic Excavator (2.5cy)	Active	1.00	8.0	10	80.00	E	\$203.63	incl. in rate	incl. in rate	\$16,290.40
Hydraulic Excavator (5.0cy)	Active	1.00	8.0	10	80.00	E	\$274.63	incl. in rate	incl. in rate	\$21,970.40
Loader, FE Rubber Tire (3.5cy)	Active	2.00	8.0	10	160.00	Е	\$64.23	incl. in rate	incl. in rate	\$10,276.80
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	8.0	10	80.00	E	\$62.72	incl. in rate	incl. in rate	\$5,017.60
Air Compressor 600 CFM	Active	1.00	8.0	10	80.00	Е	\$21.74	incl. in rate	incl. in rate	\$1,739.20
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	8.0	10	80.00	E	\$89.29	incl. in rate	incl. in rate	\$7,143.20
Air Tool Chipping Hammer	Active	2.00	8.0	10	160.00	E	\$1.64	incl. in rate	incl. in rate	\$262.40
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	4.1	10	41.00	E	\$174.47	incl. in rate	incl. in rate	\$7,153.27
				Labor Hours	681				TOTAL LABOR	\$42,266.83
				Equipment Hours	761			TO	TAL EQUIPMENT	\$69,853.27

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
						TOTAL MATERIAL	\$0.00

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost	3.00	Loads	90lbs per CY	\$200.00	\$600.00

SUMMARY OF COSTS						
Labor Cost	\$42,266.83	Labor Burden @	49.7%	\$0.00		\$42,266.83
Material Cost	\$0.00	Material Tax @	7.8%	\$0.00		\$0.00
Equipment Cost	\$69,853.27	Equipment Tax @	7.8%	\$5,413.63		\$75,266.90
Subcontractors	\$600.00					\$600.00
DIRECT COST SUBTOTALS	\$112,720			\$5,414	DIRECT COST SUBTOTALS	\$118,134
Additional Pay Item Notes :						

4.105 Remove Concrete in Fish Facility Items Details High Cost Factors Low Cost Factors Bad Weather Bas Price Increase 5% 5% No Bad Weather Gas Price Decrease No Unforeseen Contar 15 120.00 Excavator Loading Production per shift 1,200.00 CY per Hour 46.83 Swell Factor 60% CY Bucket Size 2.50 Bulk CY 1920 Buckets Per Hour 19 Haul Vehicle 60% Capacity (2 tons per CY) 19.2 # of Excavators 1.00 # of Haul Vehicles CY per Hour (2.5 CY Bucket) 46.82926829 Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) CY Per Hour Ideal Production Per 8 Hour Shift 95 Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Efficient Compared to Ideal Production 49% Haul Speed (Loaded MPH) Inefficiencies Compared to Ideal Production 51% Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Load Time (Load Time Minutes / 60mins) 0.13 Hydraulic Hammer CY per Hour 15 Haul Time (Haul Distance / Haul Speed) 0.13 # of Hammers 1.00 0.05 CY per Hour Dump Time (Dump Time Minutes / 60 Mins) 46.82926829 Return Time (Haul Distance / Return Speed) 0.06 CY per Hour Back Check 0.37 32CY per HR per 8hr shift (Ideal prod) 15 Hours Per Cycle 32 Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT) Efficient Compared to Ideal Production 49% Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) 51% 0.41 Inefficiencies Compared to Ideal Production 41 Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) 2.44 4.1 Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days Speed Loaded Max Weight lbs of loaded 745 20lbs/Ton Rolling weight Rolling Resistance (1% for each 20lbs/Ton) Average Slope 2% 6% Total Resistance Max Gear per CAT Chart 8.8 Max MPH Speed Empty Max Weight lbs of Empty 745 Tons Empty 74,100.00 20lbs/Ton Rolling weight Empty Rolling Resistance (1% per 20lbs/Ton) Empty 2% 2% Average Slope Empty Total Resistance Empty Max Gear per CAT Chart Empty N/A Max MPH Empty N/A Other Notes

PAY ITEM INFORMATION Project : KRRP - Iron Gate Description Group : D10 Quantity
Daily Production 50.00 LBS per Project # Work Days Unit Price Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 61812.5 Total Cost \$7,132 Unit Price Per LBS \$0.70 per LBS \$0.68 Probable High Cost Parameter 43000 \$10,068 \$0.96 **Total Cost** \$8,390

CREW COSTS Description	Active	# in	Davis	Harre	Tetal	L/E	Henri	Univ. emen	Dunden	Labor / Favinment
Description	Active Idle	# In	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	3.00	0.2	10	6.00	L	\$53.10	\$0.00		\$318.58
Steelworker	Active	12.00	0.2	10	24.00	L	\$72.07	\$0.00		\$1,729.73
Crawler Crane (270tn)	Active	2.00	0.2	10	4.00	E	\$399.50	\$446.84		\$1,598.00
Equipment Operator (crane)	Active	2.00	0.2	10	4.00	L	\$75.25	\$0.00		\$301.00
Welder	Active	3.00	0.2	10	6.00	E	\$7.84	\$7.84		\$47.03
Gas Welding Machine	Active	3.00	0.2	10	6.00	E	\$2.88	\$2.88		\$17.26
Electrician	Active	1.00	0.2	10	2.00	L	\$49.75	\$0.00		\$99.51
Carpenters, Journeyman	Active	12.00	0.2	10	24.00	L	\$71.91	\$0.00		\$1,725.77
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	0.2	10	2.00	E	\$36.58	\$36.58		\$73.16
Hydraulic Excavator (6.0cy)	Active	1.00	0.2	10	2.00	E	\$322.48	\$322.48		\$644.96

Labor Hours	60	TOTAL LABOR	\$4,174.59
Equipment Hours	20	TOTAL EQUIPMENT	\$2,380.41

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$417.46	\$417.46

TOTAL MATERIAL \$417.46

\$1,201.00

\$8,390

TOTAL SUBCONTRACTS

DIRECT COST SUBTOTALS

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit Price		Contract or Quote
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum	0.60	ton	Company 1.000	0.60	\$595.00	Amount \$357.00
Hauling to Yreka Transfer 40 Miles Disposal Fee	1.00 6.00	Load Ton	20 tons per load		\$400.00 \$74.00	\$400.00 \$444.00

SUMMARY OF COSTS					
Labor Cost	\$4,174.59	Labor Burden @	49.7%	\$0.00	\$4,174.59
Material Cost	\$417.46	Material Tax @	7.75%	\$32.35	\$449.81
Equipment Cost	\$2,380.41	Equipment Tax @	7.75%	\$184.48	\$2,564.89
Subcontractors	\$1,201.00				\$1,201.00

\$217

DIRECT COST SUBTOTALS
Additional Pay Item Notes :

Assumed the process of removing and disposing of Miscellaneous Metalwork in Fish Facilities (frames, grating, handrails, ladders, mechanical sweeps) is done in around 1/2 day by 3 crew formed of 1 foreman 4 journeymen, 4 steelworkers. We dispose metal with 1 trucks per day for each crew. Assumed contains paint with heavy metals 10% of the total lbs, 28 miles from Iron Gate to Yreka transfer recycling. Based on the current production rate, only 1 trips a day would be necessary. Demolition is done using one crawler crane, excavator and welding machine.

\$8,173

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.107	Project : KRRP - I	on Gate		
Description	:	Remove Concrete Associated with 30" Dia. water supply line	Group : D03			
Quantity	:	80.00 CY				
Daily Production	:	187.50 CY per 10 hour shift	Project # : 4			
Work Days	:	0.4 Days	Estimator : Mihaela 1	Tomulescu CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$68.90 per CY	Probable Low Cost Parameter	215.625	\$4,685	\$67
Total Cost	:	\$5,512	Probable High Cost Paramete	r 159.375	\$6,338	\$91

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
•	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.3
Laborer	Active	3.00	0.4	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.5
Equipment Operator (medium)	Active	3.00	0.4	10	12.00	L	\$72.91	incl. in rate	incl. in rate	\$874.9
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$63.35	incl. in rate	incl. in rate	\$253.4
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	4.00	E	\$203.63	incl. in rate	incl. in rate	\$814.5
Hydraulic Excavator (5.0cy)	Active	1.00	0.4	10	4.00	E	\$274.63	incl. in rate	incl. in rate	\$1,098.5
Loader, FE Rubber Tire (3.5cy)	Active	2.00	0.4	10	8.00	E	\$64.23	incl. in rate	incl. in rate	\$513.8
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	0.4	10	4.00	E	\$62.72	incl. in rate	incl. in rate	\$250.8
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.4	10	4.00	E	\$111.64	incl. in rate	incl. in rate	\$446.5
						1				
				Labor Hours	32				TOTAL LABOR	\$1,945.2
				Equipment Hours	24			TO	TAL EQUIPMENT	\$3,124.3

ERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal Cost	1.00	Loads	90lbs per CY	\$200.00	\$200.00
				TOT	AL SUBCONTRACTS \$200.00

SUMMARY OF COSTS						
Labor Cost		Labor Burden @	49.7%	\$0.00		\$1,945.24
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$3,124.32	Equipment Tax @	7.75%	\$242.13		\$3,366.45
Subcontractors	\$200.00					\$200.00
DIRECT COST SUBTOTALS	\$5,270			\$242	DIRECT COST SUBTOTALS	\$5,512
Additional Pay Item Notes :						

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Iron Gate Description Group Quantity
Daily Production
Work Days
Unit Price 10 hour shift Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter 1.0 Days \$74.38 per CY CY per 71.875 Total Cost \$4,110 Unit Price Per CY \$72 Probable High Cost Parameter \$5,560 **Total Cost** \$4,835 53.125 \$98

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	10	10.40	L	\$53.10	incl. in rate	incl. in rate	\$552.21
Equipment Operator (medium)	Active	2.00	1.0	10	20.80	L	\$72.91	incl. in rate	incl. in rate	\$1,516.49
Steelworker	Active	3.00	1.0	10	31.20	L	\$72.07	incl. in rate	incl. in rate	\$2,248.65
Electrician	Active	1.00	1.0	10	10.40	L	\$49.75	incl. in rate	incl. in rate	\$517.43
				Labor Hours	72.8				TOTAL LABOR	\$4,834.77
				Equipment Hours	0			TO	AL EQUIPMENT	\$0.00

Material
Cost

SU	SCONTRACT COSTS						
	Description	Quantity	Units	Notes /	Unit		Contract or Quote
				Company	Price		Amount
						TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS										
Labor Cost	\$4,834.77	Labor Burden @	49.7%	\$0.00		\$4,834.77				
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00				
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00				
Subcontractors	\$0.00		·			\$0.00				
DIRECT COST SUBTOTALS	\$4,835			\$0	DIRECT COST SUBTOTALS	\$4,835				
Additional Pay Item Notes :	Additional Pay Item Notes :									
Based on RS.Means - "Selective con	sed on RS.Means - "Selective concrete demolition, reinforcing 1% - 2% of cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY -									

Based on RS.Means - "Selective concrete demolition, reinforcing 1% - 2% of cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY work done with crew B9' and "Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH, excludes loading equipment Crew B34B*

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.111	Project : KRRP - Iron G	ate		
Description	:	Remove Asphalt Pavement	Group : D11			
Quantity	:	3,900.00 SF	_			
Daily Production	:	1,587.50 SF per 10 hour shift	Project # : 4			
Work Days	:	2.5 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$5.53 per SF	Probable Low Cost Parameter	1825.625	\$18,337	\$5.37
Total Cost	:	\$21,573	Probable High Cost Parameter	1349.375	\$24,809	\$7.27

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.5	10	25.00	L	\$53.10	incl. in rate	incl. in rate	\$1,327.43
Laborer	Active	2.00	2.5	10	50.00	L	\$50.38	incl. in rate	incl. in rate	\$2,519.00
Equipment Operator (light)	Active	1.00	2.5	10	25.00	L	\$71.39	incl. in rate	incl. in rate	\$1,784.75
Equipment Operator (medium)	Active	1.00	2.5	10	25.00	L	\$72.91	incl. in rate	incl. in rate	\$1,822.70
Hydraulic Excavator (5.0cy)	Active	1.00	2.5	10	25.00	E	\$274.63	incl. in rate	incl. in rate	\$6,865.75
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.5	10	25.00	E	\$62.72	incl. in rate	incl. in rate	\$1,568.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.5	10	25.00	Е	\$75.42	incl. in rate	incl. in rate	\$1,885.50
			La	bor Hours	125				TOTAL LABOR	\$7,453.88
			Equipm	ent Hours	75				TOTAL EQUIPMENT	\$10,319.25

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS											
Description	Quantity Units	Notes /	Unit		Contract or Quote						
		Company	Price		Amount						
Asphalt Disposal	150 tons	433SY at 6" thick									
Asphalt Disposal	7.50 Loads	Hauling to Yreka	\$400.00		\$3,000.00						
				TOTAL SUBCONTRACTS	\$3,000.00						

SUMMARY OF COSTS						
Labor Cost	\$7,453.88	Labor Burden @	0.0%			\$7,453.88
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost		Equipment Tax @	7.75%	\$799.74		\$11,118.99
Subcontractors	\$3,000.00					\$3,000.00
DIRECT COST SUBTOTALS	\$20,773			\$800	DIRECT COST SUBTOTALS	\$21,573
Additional Pay Item Notes :						_

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.112	Project	: KRRP - Iron Gate			
Description	:	Remove Restroom Building near Aerator Structure	Group	: D10			
Quantity	:	340.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 4			
Work Days	:	0.3 Days	Estimator	: Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.00 per SF	Probable Low	Cost Parameter	1237.5	\$4,285	\$14
Total Cost	:	\$4,761	Probable High	Cost Parameter	956.25	\$5,475	\$18

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$53.10	incl. in rate	incl. in rate	\$159.29
Laborer	Active	4.00	0.3	10	12.00	L	\$50.38	incl. in rate	incl. in rate	\$604.56
Equipment Operator (oiler)	Active	2.00	0.3	10	6.00	L	\$69.23	incl. in rate	incl. in rate	\$415.40
Hydraulic Excavator (5.0cy)	Active	1.00	0.3	10	3.00	E	\$274.63	incl. in rate	incl. in rate	\$823.89
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.3	10	3.00	E	\$75.42	incl. in rate	incl. in rate	\$226.26
				Labor Hours	21	1			TOTAL LABOR	\$1,179.26

Description	Item	Order	Conversion	Order	Order	Mater
	Quantity	Unit	Factor / Waste	Quantity	Price	Cos

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Conversion (SFXH*.33/27)	50 CY				
Conversion CY to Tons (2 tons per CY)	25.00 tons	Klamath County Landfill	\$74.00		\$1,850.00
Hauling cost to landfill	3.00 Loads	18 CY per load	\$200.00		\$600.00
				TOTAL SUBCONTRACTS	\$2,450.00

SUMMARY OF COSTS				
Labor Cost	\$1,179.26 Labor Burden @	49.7% \$0	00	\$1,179.26
Material Cost	\$0.00 Material Tax @	7.75% \$0	00	\$0.00
Equipment Cost	\$1,050.15 Equipment Tax @	7.75% \$81	39	\$1,131.54
Subcontractors	\$2,450.00			\$2,450.00
DIRECT COST SUBTOTALS	\$4,679	;	81 DIRECT COST SUBTOTALS	\$4,761
Additional Pay Item Notes :				-

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.113	Project : KRRP - Iron Gate			
Description	:	Remove Storage Shed near Aerator Structure	Group : D10			
Quantity	:	90.00 SF				
Daily Production	:	1,125.00 SF per 10 hour shift	Project # : 4			
Work Days	:	0.1 Days	Estimator : Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.82 per SF	Probable Low Cost Parameter	1237.5	\$1,201	\$15
Total Cost	:	\$1,334	Probable High Cost Parameter	956.25	\$1,534	\$19

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	0.80	L	\$53.10	incl. in rate	incl. in rate	\$42.4
Laborer	Active	4.00	0.1	10	3.20	L	\$50.38	incl. in rate	incl. in rate	\$161.:
Equipment Operator (oiler)	Active	2.00	0.1	10	1.60	L	\$69.23	incl. in rate	incl. in rate	\$110.
Hydraulic Excavator (5.0cy)	Active	1.00	0.1	10	0.80	E	\$274.63	incl. in rate	incl. in rate	\$219.
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.1	10	0.80	E	\$75.42	incl. in rate	incl. in rate	\$60.
						_				
				Labor Hours	5.6				TOTAL LABOR	\$314
				Equipment Hours	1.6			TO	TAL EQUIPMENT	\$280

Description	Item	Order	Conversion	Order	Order	Materia
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Conversion (SFXH*.33/27)	13 CY				
Conversion CY to Tons (2 tons per CY)	7.00 tons	Klamath County Landfill	\$74.00		\$518.00
Hauling cost to landfill	1.00 Loads	18 CY per load	\$200.00		\$200.00
				TOTAL SUBCONTRACTS	\$718.00

SUMMARY OF COSTS						
Labor Cost	\$314.47	Labor Burden @	49.7%	\$0.00		\$314.47
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$280.04	Equipment Tax @	7.75%	\$21.70		\$301.74
Subcontractors	\$718.00					\$718.00
DIRECT COST SUBTOTALS	\$1,313	_		\$22	DIRECT COST SUBTOTALS	\$1,334
Additional Pay Item Notes :						
The cost of removal can vary based or	n the area lived in and th	ne typical wages in the region. \	We assumed that we need 1 Fc	orman, 2 Laborer's	and 1 Excavator to load the rubbish in the truck in 1/2 day.	

PAY ITEM COST DETAIL WORKSHEET

4.114 Remove Toe Drain Pipe

PAY ITEM INFORMATION
PAY ITEM NUMBER Project : KRRP - Iron Gate Description
Quantity
Daily Production
Work Days
Unit Price Group 10 hour shift Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter 0.9 \$12.53 per LF Days LF per 323.4375 Total Cost \$2,769 Unit Price Per LF \$12 Probable High Cost Parameter 239.0625 **Total Cost** \$3,257 \$3,746 \$16

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	0.9	10	9.20	L	\$50.90	incl. in rate	incl. in rate	\$468.25
Equipment Operator (medium)	Active	1.00	0.9	10	9.20	L	\$72.91	incl. in rate	incl. in rate	\$670.75
Trencher	Active	2.00	0.9	10	18.40	E	\$4.07	incl. in rate	incl. in rate	\$74.89
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.9	10	9.20	E	\$64.23	incl. in rate	incl. in rate	\$590.92
Laborer	Active	2.00	0.9	10	18.40	L	\$50.38	incl. in rate	incl. in rate	\$926.99
				Labor Hours	36.8				TOTAL LABOR	\$2,066.00

Description	Item	Order	Conversion	Order	Order	N	laterial
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL SURCONTRA	CTS \$474.00

SUMM	ARY OF COSTS						
Labor	Cost	\$2,066.00	Labor Burden @	49.7%	\$0.00		\$2,066.00
Materi	al Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipr	ment Cost	\$665.80	Equipment Tax @	7.75%	\$51.60		\$717.40
Subco	ntractors	\$474.00					\$474.00
DIRECT	COST SUBTOTALS	\$3,206			\$52	DIRECT COST SUBTOTALS	\$3,257
Additio	nal Pay Item Notes :						
	Based on RS>Means (22050510) crew PL	_UM2 -"Pipe, metal	pipe, 8" to 14" diam., selective	e demolition".			

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.116	Project	: KRRP - Iron Gate			
Description	:	Berm Removal	Group	: D03			
Quantity	:	53,000.00 cy					
Daily Production	:	12,800.00 cy per 20 hour shift	Project #	: 4			
Work Days	:	4.1 Days	Estimator	: Eric Jones	cy per	Total Cost	Unit Price Per cy
Unit Price	:	\$3.71 per cy	Probable Low	Cost Parameter	14080	\$176,948	\$3.81
Total Cost	:	\$196,609	Probable High	Cost Parameter	10240	\$235,930	\$5.09

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	4.1	20	82.00	E	\$274.63	incl. in rate	incl. in rate	\$22,519.66
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.1	20	82.00	E	\$75.42	incl. in rate	incl. in rate	\$6,184.44
Equipment Operator (medium)	Active	3.00	4.1	20	246.00	L	\$72.91	incl. in rate	incl. in rate	\$17,935.37
Truck Driver (heavy)	Active	7.00	4.1	20	574.00	L	\$63.35	incl. in rate	incl. in rate	\$36,362.33
Laborer	Active	4.00	4.1	20	328.00	L	\$50.38	incl. in rate	incl. in rate	\$16,524.64
Labor Foreman	Active	1.00	4.1	20	82.00	L	\$53.10	incl. in rate	incl. in rate	\$4,353.95
Grader, 180hp, 13' blade	Active	1.00	4.1	20	82.00	Е	\$80.79	incl. in rate	incl. in rate	\$6,624.78
CAT 745 (32 CY) OFF ROAD TRUCK	Active	7.00	4.1	20	574.00	Е	\$134.79	incl. in rate	incl. in rate	\$77,369.46
				_					_	
				Labor Hours	1230				TOTAL LABOR	\$75,176.29
			Equip	ment Hours	820				TOTAL EQUIPMENT	\$112,698.34

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$75,176.29 Labor Burden @	0.0% \$0.00		\$75,176.29
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$112,698.34 Equipment Tax @	7.75% \$8,734.12		\$121,432.46
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$187,875	\$8,734	DIRECT COST SUBTOTALS	\$196,609
Additional Pay Item Notes :				

Section Sect		4.116 Berm F			
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Max 49P4 8.8 peed Empty Max Weight bit of Empty 745 74,100.00 Ton Empty 37 20lba7 OR Gilling weight Empty 2 Rolling Resistance (1 typ 2 2015bl rop) Empty 21 Average Expe Empty 718 Toll Rolling Resistance Empty 4 Max Gear per CAT Chart Empty NA Max Gear per CAT Chart Empty NA	Max Gear ner CAT Chart	1176			
Max Weeple to of Empty 745 To 100 00 Ton Empty 37 20th 77 R R R R R Empty 2 R Rolling Resistance (1 % par 20th 77 of Empty 2 A rearge Slope Empty 79 A rearge Slope Empty 79 A rearge Slope Empty 79 Max Gear par CAT Chart Empty NA Max Gear par CAT Chart Empty NA Max Gear par CAT Chart Empty NA	Max MPH	8.8			
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20bu/Ton Rolling weight Empty 2 Rolling Resistance (The per 20bu/Ton) Empty 22 Average Bloge Empty 7-10 Total Resistance Empty 9-10 Accompany	max weight its of empty 450 Tons Empty				
Rolling Resistance (1% per 20lba/ron) Empty 2% Average Slope Empty 7% Total Resistance Empty -5% Max Gear per CAT Chart Empty N/A Max WHY Empty N/A					
Average Slope Empty Total Resistance Empty Max Geer per CAT Chart Empty Max May Heppty NA Max Meet Per CAT Chart Empty NA	Rolling Resistance (1% per 20lbs/70m)				
Total Resistance Empty -5% Max Gear per CAT Chant Empty NIA Max MPH Empty NIA Max MPH Empty NIA		7%			
Max Gear par CAT Chart Empty N/A Max Walf Hempty N/A N/A	Total Resistance Empty	-5%			
max merit Empty IVA	Max Gear per CAT Chart Empty	N/A			
	Max MPH Empty Notes Due to weight and Grade Speed Calculation is not applicable	N/A			
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PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.118	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Pipe Conduit, 30" Dia. x 0.25" Thick x 960'	Group	: D03			
Quantity	:	76,640.00 LBS					
Daily Production	:	5,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	15.3 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.74 per LBS	Probable Low	Cost Parameter	5750	\$48,304	\$0.72
Total Cost	:	\$56,828	Probable High	Cost Parameter	4000	\$68,194	\$1.02

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	15.3	10	306.00	L	\$50.38	incl. in rate	incl. in rate	\$15,416.28
Equipment Operator (crane)	Active	2.00	15.3	10	306.00	L	\$75.25	incl. in rate	incl. in rate	\$23,026.81
Hydraulic Crane (17tn)	Active	1.00	15.3	10	153.00	E	\$81.52	incl. in rate	incl. in rate	\$12,472.56
				Labor Hours	612				TOTAL LABOR	\$38,443.09
				Equipment Hours	153			TO	TAL EQUIPMENT	\$12,472.56

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,247.26	\$1,247.26

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.92	Load	20 tons per load	\$400.00	\$766.40
Disposal Fee	38.32	Ton		\$74.00	\$2,835.68
				TOTAL SUBC	ONTRACTS \$3,602.08

SUMMARY OF COSTS						
Labor Cost		abor Burden @	49.7%	\$0.00		\$38,443.0
Material Cost		Naterial Tax @	7.75%	\$96.66		\$1,343.9
Equipment Cost		quipment Tax @	7.75%	\$966.62		\$13,439.1
Subcontractors	\$3,602.08					\$3,602.0
DIRECT COST SUBTOTALS	\$55,765			\$1,063	DIRECT COST SUBTOTALS	\$56,82
Additional Pay Item Notes :						

TOTAL MATERIAL

\$65.22

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.122	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 30-in. Dia. x 0.25 Thikness x 90'	Group	: D03			
Quantity	:	7,200.00 LBS					
Daily Production	:	9,000.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.36 per LBS	Probable Low	Cost Parameter	10350	\$2,194	\$0.35
Total Cost	:	\$2,581	Probable High	Cost Parameter	7200	\$3,097	\$0.49

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.8	10	16.00	L	\$50.38	incl. in rate	incl. in rate	\$806.08
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Hydraulic Crane (17tn)	Active	1.00	0.8	10	8.00	Е	\$81.52	incl. in rate	incl. in rate	\$652.16
						1				
				Labor Hours					TOTAL LABOR	\$1,408.09
				Equipment Hours	8			TOT	TAL EQUIPMENT	\$652.16

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$65.22	\$65.22

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
				TOTAL SUBC	ONTRACTS \$400.00

SUMMARY OF COSTS						
Labor Cost	\$1,408.09	Labor Burden @	49.7%	\$0.00		\$1,408.0
Material Cost	\$65.22	Material Tax @	7.75%	\$5.05		\$70.2
Equipment Cost	\$652.16	Equipment Tax @	7.75%	\$50.54		\$702.70
Subcontractors	\$400.00					\$400.0
DIRECT COST SUBTOTALS	\$2,525	-		\$56	DIRECT COST SUBTOTALS	\$2,58
Additional Pay Item Notes :						

Based on RS Means, Utility removal, pipe, sewer/water, 27" to 36" diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B12Z.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.123	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 24-in. Dia. x 0.25 Thikness x 248'	Group	: D03			
Quantity	:	15,872.00 LBS					
Daily Production	:	9,500.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	1.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.32 per LBS	Probable Low	Cost Parameter	10925	\$4,280	\$0.31
Total Cost	:	\$5,035	Probable High	Cost Parameter	7600	\$6,042	\$0.43

REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	1.7	10	34.00	L	\$50.38	incl. in rate	incl. in rate	\$1,712.9
Equipment Operator (crane)	Active	1.00	1.7	10	17.00	L	\$75.25	incl. in rate	incl. in rate	\$1,279.2
Hydraulic Crane (17tn)	Active	1.00	1.7	10	17.00	E	\$81.52	incl. in rate	incl. in rate	\$1,385.8
				Labor Hours	51				TOTAL LABOR	\$2,992.1
				Equipment Hours	17			TO	AL EQUIPMENT	\$1,385.8

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$138.58	\$138.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal to Yreka	1.00	Loads	40 Mile Haul	\$400.00	\$400.00
					CONTRACTS \$400.00

SUMMARY OF COSTS					
Labor Cost Material Cost Equipment Cost Subcontractors	\$2,992.19	49.7% 7.75% 7.75%	\$0.00 \$10.74 \$107.40		\$2,992.19 \$149.32 \$1,493.24 \$400.00
DIRECT COST SUBTOTALS Additional Pay Item Notes:	\$4,917		\$118	DIRECT COST SUBTOTALS	\$5,035

Based on RS Means, Utility removal, pipe, sewer/water, 21* to 24* diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B12Z.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.124	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 20-in. Dia. x 0.25 Thikness x 85'	Group	: D03			
Quantity	:	4,505.00 LBS					
Daily Production	:	9,500.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.5 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.39 per LBS	Probable Low (Cost Parameter	10925	\$1,499	\$0.38
Total Cost	:	\$1,763	Probable High	Cost Parameter	7600	\$2,116	\$0.54

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.5	10	10.00	L	\$50.38	incl. in rate	incl. in rate	\$503.80
Equipment Operator (crane)	Active	1.00	0.5	10	5.00	L	\$75.25	incl. in rate	incl. in rate	\$376.26
Hydraulic Crane (17tn)	Active	1.00	0.5	10	5.00	E	\$81.52	incl. in rate	incl. in rate	\$407.60
				Labor Hours	15				TOTAL LABOR	\$880.06
				Equipment Hours	5			тот	AL EQUIPMENT	\$407.60

Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
nsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$40.76		\$40.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal to Yreka	1.00	Loads	40 Mile Haul	\$400.00	\$400.00
					STID CONTRACTS \$400.00

	\$880.06
	\$43.92 \$439.19
DIRECT COST SUBTOTALS	\$400.00 \$1,763
	DIRECT COST SUBTOTALS

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - Iron Gate : D03 Project Description
Quantity
Daily Production
Work Days Project # : 4
Estimator : Mihaela To
Probable Low Cost Parameter : 4 : Mihaela Tomulescu LBS per 15812.5 Total Cost Unit Price Per LBS Unit Price \$9,049 \$0.36 **Total Cost** \$10,646 Probable High Cost Parameter 11000 \$12,775 \$0.50

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.1	10	21.00	L	\$53.10	incl. in rate	incl. in rate	\$1,115.04
Laborer	Active	3.00	2.1	10	63.00	L	\$50.38	incl. in rate	incl. in rate	\$3,173.94
Steelworker	Active	2.00	2.1	10	42.00	L	\$72.07	incl. in rate	incl. in rate	\$3,027.02
Equipment Operator (medium)	Active	1.00	2.1	10	21.00	L	\$72.91	incl. in rate	incl. in rate	\$1,531.07
Loader, FE Rubber Tire (3.5cy)	Active	1.00	2.1	10	21.00	E	\$64.23	incl. in rate	incl. in rate	\$1,348.83

Labor Hours 147 TOTAL LABOR \$8,847.07
Equipment Hours 21 TOTAL EQUIPMENT \$1,348.83

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
Consumables 10% labor (saw blades, drill bits, etc)	Quantity	Unit	Factor / Waste 1.000	Quantity	Price \$134.88		Cost \$134.88
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$134.00		\$134.00
						TOTAL MATERIAL	\$134.88

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal Cost	1.00	Loads	20 tons a load	\$200.00	\$200.00
				TOTA	L SUBCONTRACTS \$200.00

SUMMARY OF COSTS						
Labor Cost Material Cost	\$134.88	Labor Burden @ Material Tax @	49.7% 7.75%	\$0.00 \$10.45		\$8,847.07 \$145.34
Equipment Cost Subcontractors	\$1,348.83 \$200.00	Equipment Tax @	7.75%	\$104.53		\$1,453.36 \$200.00
DIRECT COST SUBTOTALS	\$10,531			\$115	DIRECT COST SUBTOTALS	\$10,646
Additional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.126	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 16-in. Dia. x 0.25 Thikness x 166'	Group	: D03			
Quantity	:	6,972.00 LBS					
Daily Production	:	9,875.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.7 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.37 per LBS	Probable Low 0	Cost Parameter	11356.25	\$2,181	\$0.36
Total Cost	:	\$2,566	Probable High	Cost Parameter	7900	\$3.080	\$0.50

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.7	10	14.00	L	\$50.38	incl. in rate	incl. in rate	\$705.3
Equipment Operator (crane)	Active	1.00	0.7	10	7.00	L	\$75.25	incl. in rate	incl. in rate	\$526.7
Hydraulic Crane (17tn)	Active	1.00	0.7	10	7.00	E	\$81.52	incl. in rate	incl. in rate	\$570.6
				Labor Hours	21				TOTAL LABOR	\$1,232.0
				Equipment Hours	7			TO	TAL EQUIPMENT	

Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
onsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$57.06		\$57.0

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal to Yreka	1.00	Loads	40 Mile Haul	\$400.00	\$400.00
Disposal Fee	3.49	Tons		\$74.00	\$257.96
					\$0.00 \$0.00
				TOTAL SUBCON	TRACTS \$657.96

\$1,232.08	Labor Burden @	49.7%	\$0.00		\$1,232.0
\$57.06	Material Tax @	7.75%	\$4.42		\$61.4
\$570.64	Equipment Tax @	7.75%	\$44.22		\$614.8
\$657.96					\$657.9
\$2,518	-		\$49	DIRECT COST SUBTOTALS	\$2,56
	\$57.06 \$570.64 \$657.96		\$57.06 Material Tax @ 7.75% \$570.64 Equipment Tax @ 7.75% \$657.96	\$57.06 Material Tax @	\$57.06 Material Tax @ 7.75% \$4.42 \$570.64 Equipment Tax @ 7.75% \$44.22 \$657.96

Based on RS Means, Utility removal, pipe, sewer/water, 15" to 18" diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B12Z.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.127	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 12-in. Dia. x 0.25 Thikness x 64'	Group	: D03			
Quantity	:	2,176.00 LBS					
Daily Production	:	11,875.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.48 per LBS	Probable Low (Cost Parameter	13656.25	\$890	\$0.47
Total Cost	:	\$1,047	Probable High	Cost Parameter	9500	\$1,256	\$0.66

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.2	10	3.66	L	\$50.38	incl. in rate	incl. in rate	\$184.39
Equipment Operator (crane)	Active	1.00	0.2	10	1.83	L	\$75.25	incl. in rate	incl. in rate	\$137.71
Hydraulic Crane (17tn)	Active	1.00	0.2	10	1.83	E	\$81.52	incl. in rate	incl. in rate	\$149.18
				Labor Hours	5.49				TOTAL LABOR	\$322.10
				Equipment Hours	1.83			TO	TAL EQUIPMENT	\$149.18

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$14.92		\$14
				•	•	TOTAL MATERIAL	\$1.4

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	2.00	Ton		\$74.00	\$148.00
				TOTAL SUBCOM	STRACTS \$548.00

SUMMARY OF COSTS						
Labor Cost	\$322.10	Labor Burden @	49.7%	\$0.00		\$322.10
Material Cost		Material Tax @	7.75%	\$1.16		\$16.07
Equipment Cost	\$149.18	Equipment Tax @	7.75%	\$11.56		\$160.74
Subcontractors	\$548.00					\$548.00
DIRECT COST SUBTOTALS	\$1,034	-		\$13	DIRECT COST SUBTOTALS	\$1,047
Additional Pay Item Notes :						
Based on RS Means, Utility removal	I, pipe, sewer/water, 12" d	iameter, remove, excludes exc	avation & Cycle hauling(wait, load, tra	vel, unload or dum	np & return) time per cycle, excavated or borrow, loose cubic yards, 15	

Based on RS Means, Utility removal, pipe, sewer/water, 12" diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B6.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.128	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 10-in. Dia. x 0.25 Thikness x 69'	Group	: D03			
Quantity	:	1,932.00 LBS					
Daily Production	:	12,500.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.53 per LBS	Probable Low (Cost Parameter	14375	\$866	\$0.51
Total Cost	:	\$1,019	Probable High	Cost Parameter	10000	\$1,223	\$0.72

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.2	10	4.00	L	\$50.38	incl. in rate	incl. in rate	\$201.52
Equipment Operator (crane)	Active	1.00	0.2	10	2.00	L	\$75.25	incl. in rate	incl. in rate	\$150.50
Hydraulic Crane (17tn)	Active	1.00	0.2	10	2.00	E	\$81.52	incl. in rate	incl. in rate	\$163.04
				Labor Hours	6				TOTAL LABOR	\$352.02
				Equipment Hours	2			TO	TAL EQUIPMENT	\$163.04

Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
nsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$16.30		\$16.3

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL SUBCONT	**RACTS \$474.00

SUMMARY OF COSTS					
Labor Cost	\$352.02	Labor Burden @	49.7%	\$0.00	
faterial Cost	\$16.30	Material Tax @	7.75%	\$1.26	
quipment Cost	\$163.04	Equipment Tax @	7.75%	\$12.64	
Subcontractors	\$474.00				
DIRECT COST SUBTOTALS	\$1,005	_		\$14	DIRECT COST SUBTOTALS
Iditional Day Itom Notes					<u> </u>

Based on RS Means, Utility removal, pipe, sewer/water, 10° diameter, remove, excludes excavation & Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH. Using CREW B6.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.129	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 8-in. Dia. x 0.25 Thikness x 30'	Group	: D03			
Quantity	:	3,588.00 LBS					
Daily Production	:	22,500.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.27 per LBS	Probable Low 0	Cost Parameter	25875	\$825	\$0.26
Total Cost	:	\$971	Probable High	Cost Parameter	18000	\$1.165	\$0.37

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.2	10	4.00	L	\$50.38	incl. in rate	incl. in rate	\$201.52
Equipment Operator (light)	Active	1.00	0.2	10	2.00	L	\$71.39	incl. in rate	incl. in rate	\$142.78
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.2	10	2.00	Е	\$64.23	incl. in rate	incl. in rate	\$128.46
				Labor Hours	6				TOTAL LABOR	\$344.30
				Equipment Hours	2			TO	TAL EQUIPMENT	\$128.46

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	Mate	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cos	st
Consumables 10% labor (saw blades, drill bits,							
etc)	1.00	LS	1.000	1.00	\$12.85		\$12.85
						TOTAL MATERIAL	\$12.85

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL SUBCON	TRACTS \$474.00

SUMMARY OF COSTS		1			1	
Labor Cost	\$344.30	Labor Burden @	49.7%	\$0.00		\$344.30
Material Cost	\$12.85	Material Tax @	7.75%	\$1.00		\$13.84
Equipment Cost	\$128.46	Equipment Tax @	7.75%	\$9.96		\$138.42
Subcontractors	\$474.00					\$474.00
DIRECT COST SUBTOTALS	\$960		-	\$11	DIRECT COST SUBTOTALS	\$971
Additional Pay Item Notes :						
Based on RS Means, Utility removal.	pipe, sewer/water, 8" dia	imeter, remove, excludes exca	avation, B127 Crew is formed of 2 labor	orers loading 1 true	ck with the crane for disposal based on daily production.	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.130	Project	: KRRP - Iron Gate			
Description	:	Remove and Dispose of Piping- 3-in. Dia. x STD x 30'	Group	: D03			
Quantity	:	1,088.00 LBS					
Daily Production	:	22,500.00 LBS per 10 hour shift	Project #	: 4			
Work Days	:	0.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.65 per LBS	Probable Low C	Cost Parameter	25875	\$600	\$0.63
Total Cost	:	\$706	Probable High C	Cost Parameter	18000	\$847	\$0.89

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.0	10	0.96	L	\$50.38	incl. in rate	incl. in rate	\$48.36
Equipment Operator (crane)	Active	1.00	0.0	10	0.48	L	\$75.25	incl. in rate	incl. in rate	\$36.12
Crawler Crane (130tn)	Active	1.00	0.0	10	0.48	E	\$258.66	incl. in rate	incl. in rate	\$124.16
	•			Labor Hours	1.44				TOTAL LABOR	\$84.49
				Equipment Hours	0.48			TO:	TAL EQUIPMENT	\$124.16

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$12.42		\$12.42
						TOTAL MATERIAL	\$12.42

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL SUBCO	NTD ACTC

SUMMARY OF COSTS						
Labor Cost	\$84.49	Labor Burden @	0.0%	\$0.00		\$84.49
Material Cost	\$12.42	Material Tax @	7.75%	\$0.96		\$13.38
Equipment Cost	\$124.16	Equipment Tax @	7.75%	\$9.62		\$133.78
Subcontractors	\$474.00					\$474.00
DIRECT COST SUBTOTALS	\$695			\$11	DIRECT COST SUBTOTALS	\$706
Additional Pay Item Notes :						_
	·		•		_	
Based on RS Means, Utility remov	al, pipe, sewer/water, 3" dia	meter, remove, excludes exca	vation, B12Z Crew is formed of 2 labo	rers loading 1 true	ck with the crane for disposal based on daily production.	

TOTAL MATERIAL

\$557.82

PAY IT	TEM INFORMATION							
	PAY ITEM NUMBER	:	4.131 F	Project	: KRRP - Iron Gate			
	Description	:	Remove and Dispose of Gate Valves	Group	: D03			
	Quantity	:	21,792.00 LBS					
	Daily Production	:	13,750.00 LBS per 10 hour shift	Project #	: 4			
	Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
	Unit Price	:	\$0.42 per LBS	Probable Low Co	st Parameter	15812.5	\$7,838	\$0.41
	Total Cost	:	\$9,221	Probable High Co	ost Parameter	11000	\$11,066	\$0.58

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	2.00	1.6	10	31.70	L	\$53.10	incl. in rate	incl. in rate	\$1,683.17
Laborer	Active	2.00	1.6	10	31.70	L	\$50.38	incl. in rate	incl. in rate	\$1,597.05
Steelworker	Active	1.00	1.6	10	15.85	L	\$72.07	incl. in rate	incl. in rate	\$1,142.34
Equipment Operator (medium)	Active	1.00	1.6	10	15.85	L	\$72.91	incl. in rate	incl. in rate	\$1,155.59
Loader, FE Rubber Tire (3.5cy)	Active	2.00	1.6	10	31.70	E	\$64.23	incl. in rate	incl. in rate	\$2,036.09
				Labor Hours	95.1	I		1	OTAL LABOR	\$5,578.15

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$557.82	\$557.82

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup,						
bulk material, maximum						
	1.09	ton	1.000	1.09	\$595.00	\$648.3
Hauling Disposal Cost	1.00	Loads	20 tons a load		\$200.00	\$200.0

SUMMARY OF COSTS				
Labor Cost	\$5,578.15 Labor Burden @	0.0% \$0.00		\$5,578.15
Material Cost	\$557.82 Material Tax @	7.75% \$43.23		\$601.05
Equipment Cost	\$2,036.09 Equipment Tax @	7.75% \$157.80		\$2,193.89
Subcontractors	\$848.31			\$848.31
DIRECT COST SUBTOTALS	\$9,020	\$201	DIRECT COST SUBTOTALS	\$9,221
Additional Pay Item Notes :				

TOTAL SUBCONTRACTS

\$1,000.00

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.132	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Basin #1	Group : D07			
Quantity	:	2,880.00 LBS				
Daily Production	:	13,750.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.2 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.89 per LBS	Probable Low Cost Parameter	15812.5	\$2,190	\$0.87
Total Cost		\$2.577	Probable High Cost Parameter	11000	\$3.092	\$1.23

Total Cost :	\$2,577				Probable High C	ost Parame	ter	11000	\$3,092	\$1.23	
ODEW COOTS											
CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipr	ment
Description	Idle	crew	Worked	/day	Hours	-,-	Rate	Cost	Rate	Cost	c.iii
Labor Foreman	Active	1.00	0.2	10	2.00	L	\$53.10	incl. in rate	incl. in rate		\$106
Steelworker	Active	2.00	0.2	10	4.00	L	\$72.07	incl. in rate	incl. in rate		\$288
Crawler Crane (90tn)	Active	1.00	0.2	10	2.00	Е	\$208.09	incl. in rate	incl. in rate		\$416
Equipment Operator (crane)	Active	1.00	0.2	10	2.00	L	\$75.25	incl. in rate	incl. in rate		\$150
Welder	Active	2.00	0.2	10	4.00	Е	\$7.84	incl. in rate	incl. in rate		\$31
Gas Welding Machine	Active	2.00	0.2	10	4.00	Е	\$2.88	incl. in rate	incl. in rate		\$11
Electrician	Active	1.00	0.2	10	2.00	L	\$49.75	incl. in rate	incl. in rate		\$99
Carpenters, Journeyman	Active	1.00	0.2	10	2.00	L	\$71.91	incl. in rate	incl. in rate		\$143
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.2	10	2.00	Е	\$31.90	incl. in rate	incl. in rate		\$63
Fruck Driver (heavy)	Active	1.00	0.2	10	2.00	L	\$63.35	incl. in rate	incl. in rate		\$126
				Labor Houre	1/			7	TOTAL LABOR		\$015
				Labor Hours	14				TOTAL LABOR		
				Labor Hours Equipment Hours	14 12				TOTAL LABOR		
MATERIAL COSTS											
MATERIAL COSTS Description	ltem Quantity	Order		Equipment Hours Conversion	12 Order		Order			Material	\$915 \$522
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	ТОТА		Material Cost	\$522
Description				Equipment Hours Conversion	12 Order		Price				\$52
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	ТОТА			\$52
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	ТОТА			\$52
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	ТОТА			\$52
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	TOTA 91.50			\$52
Description Consumables 10% labor (saw blades, drill bits, etc)	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity		Price	TOTA 91.50	L EQUIPMENT		
Description	Quantity	Unit		Equipment Hours Conversion Factor / Waste	12 Order Quantity	Uni	Price \$:	TOTA 91.50	L EQUIPMENT		\$522 \$9°

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00

SUMMARY OF COSTS					
Labor Cost	\$915.00	Labor Burden @	0.0%	\$0.00	
Material Cost	\$91.50	Material Tax @	7.75%	\$7.09	
Equipment Cost	\$522.84	Equipment Tax @	7.75%	\$40.52	
Subcontractors	\$1,000.00				
DIRECT COST SUBTOTALS	\$2,529	-		\$48	DIRECT COST SUBTOT.
Additional Pay Item Notes					

PAY ITEM INFORMATION Project : KRRP - Iron Gate Description Group : D07 Quantity
Daily Production 3,660.00 LBS 3,750.00 LBS per hour shift Project # Work Days Unit Price Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 15812.5 Total Cost \$2,861 Unit Price Per LBS \$0.89 \$0.92 per LBS Probable High Cost Parameter 11000 \$4,039 \$1.26 **Total Cost** \$3,365

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
-	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$53.10	incl. in rate	incl. in rate	\$159.29
Steelworker	Active	2.00	0.3	10	6.00	L	\$72.07	incl. in rate	incl. in rate	\$432.43
Crawler Crane (90tn)	Active	1.00	0.3	10	3.00	E	\$208.09	incl. in rate	incl. in rate	\$624.27
Equipment Operator (crane)	Active	1.00	0.3	10	3.00	L	\$75.25	incl. in rate	incl. in rate	\$225.75
Welder	Active	2.00	0.3	10	6.00	E	\$7.84	incl. in rate	incl. in rate	\$47.03
Gas Welding Machine	Active	2.00	0.3	10	6.00	E	\$2.88	incl. in rate	incl. in rate	\$17.26
Electrician	Active	1.00	0.3	10	3.00	L	\$49.75	incl. in rate	incl. in rate	\$149.26
Carpenters, Journeyman	Active	1.00	0.3	10	3.00	L	\$71.91	incl. in rate	incl. in rate	\$215.72
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.3	10	3.00	E	\$31.90	incl. in rate	incl. in rate	\$95.70
Truck Driver (heavy)	Active	1.00	0.3	10	3.00	L	\$63.35	incl. in rate	incl. in rate	\$190.05

 Labor Hours
 21
 TOTAL LABOR
 \$1,372.50

 Equipment Hours
 18
 TOTAL EQUIPMENT
 \$784.26

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$137.25	\$137.25

TOTAL MATERIAL \$137.25

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00

TOTAL SUBCONTRACTS \$1,000.00

SUMMARY OF COSTS						
Labor Cost	\$1,372.50 La	abor Burden @	0.0%	\$0.00		
Material Cost	\$137.25 M	laterial Tax @	7.75%	\$10.64		
Equipment Cost	\$784.26 Ec	quipment Tax @	7.75%	\$60.78		
Subcontractors	\$1,000.00					
DIRECT COST SUBTOTALS	\$3,294			\$71	DIRECT COST SUBTOTALS	

Additional Pay Item Notes :

PAY ITEM INFORMATION Project : KRRP - Iron Gate Description Group : D07 Quantity
Daily Production 2,880.00 LBS 3,600.00 LBS per hour shift Project # Work Days Unit Price Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 4140 Total Cost \$5,841 Unit Price Per LBS \$2.32 \$2.39 per LBS Probable High Cost Parameter 2880 \$8,246 \$3.27 **Total Cost** \$6,871

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Steelworker	Active	2.00	0.8	10	16.00	L	\$72.07	incl. in rate	incl. in rate	\$1,153.15
Crawler Crane (90tn)	Active	1.00	0.8	10	8.00	E	\$208.09	incl. in rate	incl. in rate	\$1,664.72
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Welder	Active	2.00	0.8	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.40
Gas Welding Machine	Active	2.00	0.8	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Carpenters, Journeyman	Active	1.00	0.8	10	8.00	L	\$71.91	incl. in rate	incl. in rate	\$575.26
				Labor Hours	48				OTAL LABOR	\$3,153.2
				Equipment Hours					L EQUIPMENT	\$1,836.1

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$315.32	\$315.32

TOTAL MATERIAL \$315.32

\$1,400.00

TOTAL SUBCONTRACTS

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00

SUMMARY OF COSTS					
Labor Cost	\$3,153.22	Labor Burden @	0.0%	\$0.00	\$3,153.22
Material Cost	\$315.32	Material Tax @	7.75%	\$24.44	\$339.76
Equipment Cost	\$1,836.15	Equipment Tax @	7.75%	\$142.30	\$1,978.45

 Subcontractors
 \$1,400.00
 \$1,400.00

 DIRECT COST SUBTOTALS
 \$6,871
 DIRECT COST SUBTOTALS
 \$6,871

Additional Pay Item Notes :

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.135	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Basin #4	Group : D07			
Quantity	:	3,580.00 LBS				
Daily Production	:	4,475.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.92 per LBS	Probable Low Cost Parameter	5146.25	\$5,841	\$1.86
Total Cost	:	\$6.871	Probable High Cost Parameter	3580	\$8.246	\$2.63

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Steelworker	Active	2.00	8.0	10	16.00	L	\$72.07	incl. in rate	incl. in rate	\$1,153.15
Crawler Crane (90tn)	Active	1.00	8.0	10	8.00	E	\$208.09	incl. in rate	incl. in rate	\$1,664.72
Equipment Operator (crane)	Active	1.00	8.0	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Welder	Active	2.00	8.0	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.40
Gas Welding Machine	Active	2.00	8.0	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Carpenters, Journeyman	Active	1.00	0.8	10	8.00	L	\$71.91	incl. in rate	incl. in rate	\$575.26
				Labor Hours	48			Т	OTAL LABOR	\$3,153.22
				Equipment Hours	40			TOTAL	EQUIPMENT	\$1,836.15

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$315.32	\$315.32

TOTAL MATERIAL \$315.32

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
			Company	FIICE		Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00

TOTAL SUBCONTRACTS	\$1,400.00

SUMMARY OF COSTS					
Labor Cost	\$3,153.22 L	abor Burden @	0.0%	\$0.00	
Material Cost	\$315.32 N	Material Tax @	7.75%	\$24.44	
Equipment Cost	\$1,836.15 E	Equipment Tax @	7.75%	\$142.30	
Subcontractors	\$1,400.00				
DIRECT COST SUBTOTALS	\$6,705			\$167	DIRECT COST SUBTOTALS
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Additional Pay Item Notes :

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.136	Project : KRRP - Iron Gate			
Description	:	Remove and Dispose of Basin #5	Group : D07			
Quantity	:	1,440.00 LBS				
Daily Production	:	1,800.00 LBS per 10 hour shift	Project # : 4			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$4.77 per LBS	Probable Low Cost Parameter	2070	\$5,841	\$4.63
Total Cost		\$6.871	Probable High Cost Parameter	1440	\$8 246	\$6.54

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours	Total Hours	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Labor Foreman				/day 10			Rate	Cost	Rate	Cost
	Active	1.00	8.0		8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Steelworker	Active	2.00	8.0	10	16.00	L	\$72.07	incl. in rate	incl. in rate	\$1,153.15
Crawler Crane (90tn)	Active	1.00	8.0	10	8.00	Е	\$208.09	incl. in rate	incl. in rate	\$1,664.72
Equipment Operator (crane)	Active	1.00	8.0	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Welder	Active	2.00	8.0	10	16.00	Е	\$7.84	incl. in rate	incl. in rate	\$125.40
Gas Welding Machine	Active	2.00	0.8	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Carpenters, Journeyman	Active	1.00	0.8	10	8.00	L	\$71.91	incl. in rate	incl. in rate	\$575.26
				Labor Hours	48			Т	OTAL LABOR	\$3,153.22
				Equipment Hours	40			TOTAL	EQUIPMENT	\$1,836.15

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$315.32	\$315.32

TOTAL MATERIAL \$315.32

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
			Company	FIICE		Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00

TOTAL SUBCONTRACTS	\$1,400.00

SUMMARY OF COSTS					
Labor Cost	\$3,153.22 L	abor Burden @	0.0%	\$0.00	
Material Cost	\$315.32 N	Material Tax @	7.75%	\$24.44	
Equipment Cost	\$1,836.15 E	Equipment Tax @	7.75%	\$142.30	
Subcontractors	\$1,400.00				
DIRECT COST SUBTOTALS	\$6,705			\$167	DIRECT COST SUBTOTALS
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Additional Pay Item Notes :

PAY ITEM INFORMATION Project : KRRP - Iron Gate : #N/A Description Group Quantity
Daily Production 1,440.00 LBS 1,800.00 LBS per hour shift Project # 0.8 Days \$4.77 per LBS Work Days Unit Price Days Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 2070 Total Cost \$5,841 Unit Price Per LBS \$4.63 Probable High Cost Parameter \$8,246 \$6.54 **Total Cost** \$6,871 1440

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Steelworker	Active	2.00	0.8	10	16.00	L	\$72.07	incl. in rate	incl. in rate	\$1,153.15
Crawler Crane (90tn)	Active	1.00	0.8	10	8.00	E	\$208.09	incl. in rate	incl. in rate	\$1,664.72
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Welder	Active	2.00	0.8	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.40
Gas Welding Machine	Active	2.00	0.8	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Carpenters, Journeyman	Active	1.00	0.8	10	8.00	L	\$71.91	incl. in rate	incl. in rate	\$575.26
				Labor Hours	48				OTAL LABOR	\$3,153.

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$315.32	\$315.32

40

Equipment Hours

TOTAL MATERIAL \$315.32

\$1,836.15

TOTAL EQUIPMENT

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
			Company	FIICE		Amount
Stop log lifter - Rent per day	1.00	day	1.000	1.00	\$1,000.00	\$1,000.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00

SUMMARY OF COSTS \$1,400.00

\$3,153.22 Labor Burden @	0.0%	\$0.00	
\$315.32 Material Tax @	7.75%	\$24.44	
\$1,836.15 Equipment Tax @	7.75%	\$142.30	
\$1,400.00			
\$6,705		\$167	DIRECT COST SUBTOTALS
	\$315.32 Material Tax @ \$1,836.15 Equipment Tax @ \$1,400.00	\$315.32 Material Tax @ 7.75% \$1,836.15 Equipment Tax @ 7.75% \$1,400.00	\$315.32 Material Tax @ 7.75% \$24.44 \$1,836.15 Equipment Tax @ 7.75% \$142.30

Additional Pay Item Notes :

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - Iron Gate Description : D07 Quantity
Daily Production Project # : 4
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter 9,250.00 LBS per hour shift 0.8 Days \$1.25 per LBS Work Days Unit Price LBS per 10637.5 Total Cost \$7,889 Unit Price Per LBS \$1.22 **Total Cost** \$9,281 Probable High Cost Parameter 7400 \$11,137 \$1.72

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Steelworker	Active	4.00	8.0	10	32.00	L	\$72.07	incl. in rate	incl. in rate	\$2,306.30
Crawler Crane (90tn)	Active	1.00	8.0	10	8.00	E	\$208.09	incl. in rate	incl. in rate	\$1,664.72
Equipment Operator (crane)	Active	1.00	8.0	10	8.00	L	\$75.25	incl. in rate	incl. in rate	\$602.01
Welder	Active	2.00	8.0	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.40
Gas Welding Machine	Active	2.00	0.8	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Carpenters, Journeyman	Active	4.00	0.8	10	32.00	L	\$71.91	incl. in rate	incl. in rate	\$2,301.02
				Labor Hours	88			Т	OTAL LABOR	\$6,032.14
				Equipment Hours	40			TOTAL	L EQUIPMENT	\$1,836.15

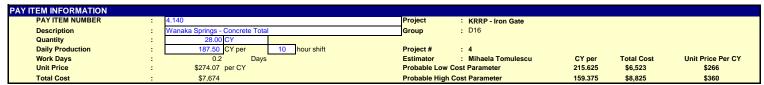
MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$603.21	\$603.21

TOTAL MATERIAL \$603.21

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
	0.37	ton	1.000	0.37	\$595.00	\$220.15
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load		\$400.00	\$400.00
					TOTAL SUBCONTRACTS	\$620.15

SUMMARY OF COSTS						
Labor Cost	\$6,032.14 L	abor Burden @	0.0%	\$0.00		\$6,032.14
Material Cost	\$603.21 N	laterial Tax @	7.75%	\$46.75		\$649.96
Equipment Cost	\$1,836.15 E	quipment Tax @	7.75%	\$142.30		\$1,978.45
Subcontractors	\$620.15					\$620.15
DIRECT COST SUBTOTALS	\$9,092			\$189	DIRECT COST SUBTOTALS	\$9,281
Additional Pay Item Notes :						

Assumed the process of removing and disposing of holding tank (2 slide gates 42" x 72" with motor and recirculation pumps) is done in around 1 day by crew formed of foreman, journeymen, steelworkers. Assumed contains petroleum products 10% of the total lbs, 28 miles from Iron Gate to Yreka transfer recycling.



CREW COSTS	Anthon	# 1	D		Total	. /=	Harrie	Unberger	B	Labor / Employment
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	2.00	0.2	10	3.00	L	\$53.10	incl. in rate	incl. in rate	\$159.2
Equipment Operator (medium)	Active	8.00	0.2	10	12.00	L	\$72.91	incl. in rate	incl. in rate	\$874.9
Steelworker	Active	6.00	0.2	10	9.00	L	\$72.07	incl. in rate	incl. in rate	\$648.6
Electrician	Active	1.00	0.2	10	1.50	L	\$49.75	incl. in rate	incl. in rate	\$74.6
Vibratory Hammer & Extractor	Active	2.00	0.2	10	3.00	E	\$94.34	incl. in rate	incl. in rate	\$283.0
Hydraulic Excavator (6.0cy)	Active	3.00	0.2	10	4.50	E	\$322.48	incl. in rate	incl. in rate	\$1,451.1
Loader, FE Rubber Tire (8.6cy)	Active	3.00	0.2	10	4.50	E	\$221.50	incl. in rate	incl. in rate	\$996.7
				Labor Hours	25.5				TOTAL LABOR	\$1,757.
				Fauinment Hours	12			TOT	AL FOLIPMENT	\$2 730 9

MA	TERIAL COSTS						
	Description	Item	Order	Conversion	Order	Order	Material
		Quantity	Unit	Factor / Waste	Quantity	Price	Cost

TOTAL MATERIAL \$0.00

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1 E	Α	Cost per Mob	\$2,500.00		\$2,500.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	1	\$400.00
Disposal Fee	1.00	Ton		\$74.00	1	\$74.00

SUMMARY OF COSTS						
Labor Cost	\$1,757.46	Labor Burden @	49.7%	\$0.00		\$1,757.46
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$2,730.93	Equipment Tax @	7.75%	\$211.65		\$2,942.58
Subcontractors	\$2,974.00					\$2,974.00
DIRECT COST SUBTOTALS	\$7,462			\$212	DIRECT COST SUBTOTALS	\$7,674
Additional Pay Item Notes :						-
					shoring, bracing, saw or torch cutting, loading, hauling, dumping, ose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.144	Project : KRRP - Iron Gate			
Description	:	Wanaka Springs - Regrade	Group : D16			
Quantity	:	2.50 AC				
Daily Production	:	1.00 AC per 10 hour shift	Project # : 4			
Work Days	:	2.5 Days	Estimator : Mihaela Tomulesco	ı AC per	Total Cost	Unit Price Per AC
Unit Price	:	\$5,924.82 per AC	Probable Low Cost Parameter	1.15	\$12,590	\$5,753
Total Cost	:	\$14.812	Probable High Cost Parameter	0.85	\$17.034	\$7.784

Description Quantity	Wanaka Springs - F	AC								
Daily Production	: 1.00	AC per	10 hour	r shift	Project #	: 4				
Work Days	: 2.5	Days			Estimator		a Tomulescu	AC per	Total Cost	Unit Price Per AC
Unit Price	: \$5,924.82	per AC			Probable Low 0			1.15	\$12,590	\$5,753
Total Cost	: \$14,812				Probable High (Cost Parame	eter	0.85	\$17,034	\$7,784
REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
abor Foreman	Active	1.00	2.5	10	25.00	L	\$53.10	incl. in rate	incl. in rate	\$1,32
Equipment Operator (medium)	Active	1.00	2.5	10	25.00	L	\$72.91	incl. in rate	incl. in rate	\$1,82
_aborer	Active	4.00	2.5	10	100.00	L	\$50.38	incl. in rate	incl. in rate	\$5,03
Grader, 180hp, 13' blade	Active	1.00	2.5	10	25.00	Е	\$80.79	incl. in rate	incl. in rate	\$2,01
Dozer (235hp)(CATD7)	Active	1.00	2.5	10	25.00	E	\$165.11	incl. in rate	incl. in rate	\$4,12
						1				
				Labor Hours	s 150				TOTAL LABOR	\$8,18
								TOT		¢c 14
				Equipment Hours				тот	AL EQUIPMENT	\$6,14
ATERIAL COSTS								тот		\$6,14
ATERIAL COSTS Description	Item Quantity	Order Unit					Order Price	тот		\$6,14 Material Cost
ATERIAL COSTS Description				Equipment Hours	50 Order			тот		Material
				Equipment Hours	50 Order					Material Cost
Description				Equipment Hours	50 Order				AL EQUIPMENT	Material
Description JBCONTRACT COSTS	Quantity	Unit		Equipment Hours Conversion Factor / Waste	50 Order		Price		AL EQUIPMENT	Material Cost
Description				Equipment Hours Conversion Factor / Waste	50 Order	Unit	Price		AL EQUIPMENT	Material Cost
Description BECONTRACT COSTS	Quantity	Unit		Equipment Hours Conversion Factor / Waste	50 Order	Unit Price	Price		AL EQUIPMENT	Material Cost
Description BCONTRACT COSTS	Quantity	Unit		Equipment Hours Conversion Factor / Waste	50 Order		Price	тс	AL EQUIPMENT	Material Cost Contract or Quot Amount
Description BCONTRACT COSTS	Quantity	Unit		Equipment Hours Conversion Factor / Waste	50 Order		Price	тс	AL EQUIPMENT	Material Cost Contract or Quot Amount
BCONTRACT COSTS Description	Quantity	Units		Equipment Hours Conversion Factor / Waste Notes / Company	Order Quantity	Price	Price	тс	AL EQUIPMENT	Material Cost Contract or Quote Amount
JBCONTRACT COSTS Description JMMARY OF COSTS abor Cost	Quantity Quantity \$8,188.13	Units Labor Burden		Equipment Hours Conversion Factor / Waste Notes / Company	Order Quantity	Price	Price	тс	AL EQUIPMENT	Contract or Quote Amount
JBCONTRACT COSTS Description JMMARY OF COSTS abor Cost laterial Cost	Quantity Quantity \$8,188.13 \$0.00	Units Labor Burden Material Tax (2	Equipment Hours Conversion Factor / Waste Notes / Company 49.7%	Order Quantity	Price	Price	тс	AL EQUIPMENT	Contract or Quote Amount
Description DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION	Quantity Quantity \$8,188.13 \$0.00	Units Labor Burden	2	Equipment Hours Conversion Factor / Waste Notes / Company	Order Quantity	Price	Price	тс	AL EQUIPMENT	Contract or Quote Amount
Description BECONTRACT COSTS Description Description Description	Quantity Quantity \$8,188.13 \$0.00 \$6,147.50	Units Labor Burden Material Tax (2	Equipment Hours Conversion Factor / Waste Notes / Company 49.7%	Order Quantity	Price	Price	TOTAL S	AL EQUIPMENT	Material Cost

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.147	Project	: KRRP - Iron Gate			
Description	:	Juniper Point - Concrete Total	Group	: D16			
Quantity	:	19.00 CY					
Daily Production	:	75.00 CY per 10 hour shift	Project #	: 4			
Work Days		0.3 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$297.08 per CY	Probable Low C	Cost Parameter	86.25	\$4,798	\$288
Total Cost	:	\$5,644	Probable High C	Cost Parameter	63.75	\$6,491	\$390

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	2.50	L	\$53.10	incl. in rate	incl. in rate	\$132.74
Equipment Operator (medium)	Active	3.00	0.3	10	7.50	L	\$72.91	incl. in rate	incl. in rate	\$546.81
Steelworker	Active	3.00	0.3	10	7.50	L	\$72.07	incl. in rate	incl. in rate	\$540.54
Electrician	Active	1.00	0.3	10	2.50	L	\$49.75	incl. in rate	incl. in rate	\$124.38
Vibratory Hammer & Extractor	Active	1.00	0.3	10	2.50	E	\$94.34	incl. in rate	incl. in rate	\$235.85
Hydraulic Excavator (6.0cy)	Active	1.00	0.3	10	2.50	E	\$322.48	incl. in rate	incl. in rate	\$806.20
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.3	10	2.50	E	\$75.42	incl. in rate	incl. in rate	\$188.55
				Labor Hours	20				TOTAL LABOR	\$1,344.48
				Equipment Hours	7.5			тот	AL EQUIPMENT	\$1,230.60

Description	Item	Order	Conversion	Order	Order	Materia
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL

SUBCONTRACT COSTS						
Description	Quantity U	Jnits Notes /	Unit			Contract or Quote
		Company	Price			Amount
Concrete Saw Cutting	1 EA	Cost per Mo	\$2,500.00			\$2,500.00
Hauling to Yreka Transfer 40 Miles	1.00 L	_oad 20 tons per lo	ad .	\$400.00		\$400.00
Disposal Fee	1.00	Ton		\$74.00		\$74.00
					TOTAL SUBCONTRACTS	\$2.974.00

SUMMARY OF COSTS						
Labor Cost	\$1,344.48	Labor Burden @	49.7%	\$0.00		\$1,344.48
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$1,230.60	Equipment Tax @	7.75%	\$95.37		\$1,325.97
Subcontractors	\$2,974.00					\$2,974.00
DIRECT COST SUBTOTALS	\$5,549			\$95	DIRECT COST SUBTOTALS	\$5,644
Additional Pay Item Notes :						
	Cycle hauling(wait,				shoring, bracing, saw or torch cutting, loading, hauling, dumping, pose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30	

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	4.152	Project	: KRRP - Iron Gate				ĺ
Description	:	Juniper Point - 50'x5' Composite dock with poly floats	Group	: D16				
Quantity	:	250.00 SF						
Daily Production	:	225.00 SF per 10 hour shift	Project #	: 4				
Work Days	:	1.1 Days	Estimator	: Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF	
Unit Price	:	\$22.27 per SF	Probable Low	Cost Parameter	247.5	\$5,011	\$23	
Total Cost		\$5.568	Probable High	Cost Parameter	202.5	\$6 125	\$28	

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.1	10	11.10	L	\$53.10	incl. in rate	incl. in rate	\$589.38
Carpenters, Journeyman	Active	3.00	1.1	10	33.30	L	\$71.91	incl. in rate	incl. in rate	\$2,394.50
Hydraulic Crane (17tn)	Active	1.00	1.1	10	11.10	E	\$81.52	incl. in rate	incl. in rate	\$904.87
Equipment Operator (medium)	Active	1.00	1.1	10	11.10	L	\$72.91	incl. in rate	incl. in rate	\$809.28
				Labor Hours	55.5				TOTAL LABOR	\$3,793.16
				Equipment Hours	11.1			TOT	AL EQUIPMENT	\$904.87

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL \$0.00

Description	Quantity	Units	Notes /	Unit		Contract or Quote
Description	Quantity	Omics	Company	Price		Amount
Hauling Disposal Cost	2.00	Loads		\$400.00		\$800.00
					TOTAL SUBCONTRACTS	\$800.00

SUMMARY OF COSTS						
Labor Cost	\$3,793.16	Labor Burden @	0.0%	\$0.00		\$3,793.16
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$904.87	Equipment Tax @	7.75%	\$70.13		\$975.00
Subcontractors	\$800.00					\$800.00
DIRECT COST SUBTOTALS	\$5,498			\$70	DIRECT COST SUBTOTALS	\$5,568
Additional Pay Item Notes :						
Based on RS.Means Crew F3 the Labor	and equipment for	"Docks, floating, small boat,	prefabricated, no shore facilitie	s, excludes pilinç	gs, maximum"	

PAY ITEM INFORMATION
PAY ITEM NUMBER
Description
Quantity
Daily Production
Work Days : KRRP - Iron Gate : D16 Project Group Project # Estimator : 4 : Mihaela Tomulescu AC ner Unit Price Per AC

Unit Price Total Cost		2.0 6,653.90 per \$13,308	AC Days	•		Estimator Probable Low Probable High	Cost Parame		AC per 1.15 0.85	Total Cost \$11,312 \$15,304	Unit Price Per AC \$6,461 \$8,742
Total Cost	•	\$13,306				Flobable riigii	COSt Faraint	ster	0.65	\$15,304	\$0,742
REW COSTS											
Description	Act Id		# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Act	ive	1.00	2.0	10	20.00	L	\$53.10	incl. in rate	incl. in rate	\$1,061
Equipment Operator (medium)	Act	ive	2.00	2.0	10	40.00	L	\$72.91	incl. in rate	incl. in rate	\$2,916
Laborer	Act	ive	4.00	2.0	10	80.00	L	\$50.38	incl. in rate	incl. in rate	\$4,030
Grader, 180hp, 13' blade	Act	ive	1.00	2.0	10	20.00	E	\$80.79	incl. in rate	incl. in rate	\$1,615
Dozer (235hp)(CATD7)	Act	ive	1.00	2.0	10	20.00	E	\$165.11	incl. in rate	incl. in rate	\$3,302
					Labor Hours				TO	TOTAL LABOR	\$8,008 \$4,918
					Labor Hours Equipment Hours				тот	TOTAL LABOR	\$8,008 \$4,918
					Equipment Hours	40			тот		\$4,918
ATERIAL COSTS Description	lte Quai		Order Unit					Order Price	TOT		
IATERIAL COSTS Description					Equipment Hours Conversion	40 Order			ТОТ		\$4,918 Material
					Equipment Hours Conversion	40 Order					\$4,911 Material Cost
					Equipment Hours Conversion	40 Order				TAL EQUIPMENT	\$4,918 Material Cost
		ntity			Equipment Hours Conversion	40 Order	Unit	Price		TAL EQUIPMENT	\$4,918 Material

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

_abor Cost	\$8,008.66 Labor Burden @	0.0%	\$0.00		\$8,008.
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.
Equipment Cost	\$4,918.00 Equipment Tax @	7.75%	\$381.15		\$5,299
Subcontractors	\$0.00				\$0
RECT COST SUBTOTALS	\$12,927		\$381	DIRECT COST SUBTOTALS	\$13,
Iditional Pay Item Notes :					

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.156	Project	: KRRP - Iron Gate			
Description	:	Camp Creek - Concrete Total	Group	: D16			
Quantity	:	110.00 CY					
Daily Production	:	150.00 CY per 10 hour shift	Project #	: 4			
Work Days	:	0.7 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$115.96 per CY	Probable Low C	ost Parameter	157.5	\$11,480.01	\$119
Total Cost	:	\$12,756	Probable High C	Cost Parameter	142.5	\$14,031	\$146

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.7	10	7.30	L	\$53.10	incl. in rate	incl. in rate	\$387.6
Laborer	Active	3.00	0.7	10	21.90	L	\$50.38	incl. in rate	incl. in rate	\$1,103.32
Equipment Operator (medium)	Active	4.00	0.7	10	29.20	L	\$72.91	incl. in rate	incl. in rate	\$2,128.9
Truck Driver (heavy)	Active	1.00	0.7	10	7.30	L	\$63.35	incl. in rate	incl. in rate	\$462.4
Hydraulic Excavator (2.5cy)	Active	1.00	0.7	10	7.30	E	\$203.63	incl. in rate	incl. in rate	\$1,486.50
Hydraulic Excavator (5.0cy)	Active	1.00	0.7	10	7.30	E	\$274.63	incl. in rate	incl. in rate	\$2,004.8
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.7	10	7.30	E	\$64.23	incl. in rate	incl. in rate	\$468.8
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.7	10	7.30	E	\$111.64	incl. in rate	incl. in rate	\$814.9
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	0.7	10	7.30	E	\$89.29	incl. in rate	incl. in rate	\$651.8
Hydraulic Thumbs/Shear Attachment	Active	1.00	0.7	10	7.30	E	\$16.39	incl. in rate	incl. in rate	\$119.6
Air Tool, Chipping Hammer	Active	2.00	0.7	10	14.60	E	\$1.64	incl. in rate	incl. in rate	\$23.9
	Active					E			incl. in rate	
Air Compressor 600 cfm	Active	1.00	0.7	10	7.30		\$21.74	incl. in rate	inci. In rate	\$158.7
				Labor Hours	65.7				TOTAL LABOR	\$4,082.2
				Equipment Hours	65.7			TO	TAL EQUIPMENT	\$5,729.2

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
							_
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	1 EA	Cost per Mob	\$2,500.00	\$2,500.00

TOTAL SUBCONTRACTS

\$2,500.00

SUMMARY OF COSTS					
Labor Cost	\$4,082.29 Labor Burden @	0.0%	\$0.00		\$4,082.29
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$5,729.26 Equipment Tax @	7.75%	\$444.02		\$6,173.28
Subcontractors	\$2,500.00				\$2,500.00
DIRECT COST SUBTOTALS	\$12,312		\$444	DIRECT COST SUBTOTALS	\$12,756
Additional Pay Item Notes :					
				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	

Based on RS.Means - "Selective concrete demolition, reinforcing 1% - 2% of cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY-work done with crew B9" and "Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH, excludes loading equipment Crew B34B"

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.157	Project	: KRRP - Iron Gate			
Description	:	Camp Creek - 180'Lx16'Wx8'D Earth jetty to remove and/or regrade	Group	: D16			
Quantity	:	855.00 CY					
Daily Production	:	150.00 CY per 10 hour shift	Project #	: 4			
Work Days	: '	5.7 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$91.70 per CY	Probable Low	Cost Parameter	157.5	\$70,562	\$94
Total Cost	:	\$78.402	Probable High	Cost Parameter	142.5	\$86.242	\$115

Total Cost :	\$78,402			P	robable nigr	Cost Param	leter	142.5	\$80,242	\$115
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.7	10	57.00	L	\$53.10	incl. in rate	incl. in rate	\$3,026.5
Laborer	Active	3.00	5.7	10	171.00	L	\$50.38	incl. in rate	incl. in rate	\$8,614.9
Equipment Operator (medium)	Active	4.00	5.7	10	228.00	L	\$72.91	incl. in rate	incl. in rate	\$16,623.0
Truck Driver (heavy)	Active	1.00	4.4	10	43.52	L	\$63.35	incl. in rate	incl. in rate	\$2,756.9
Hydraulic Excavator (2.5cy)	Active	1.00	5.7	10	57.00	E	\$203.63	incl. in rate	incl. in rate	\$11,606.9
Hydraulic Excavator (5.0cy)	Active	1.00	5.7	10	57.00	E	\$274.63	incl. in rate	incl. in rate	\$15,653.9
Loader, FE Rubber Tire (3.5cy)	Active	1.00	5.7	10	57.00	E	\$64.23	incl. in rate	incl. in rate	\$3,661.1
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	4.4	10	43.52	E	\$111.64	incl. in rate	incl. in rate	\$4,858.5
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	5.7	10	57.00	E	\$89.29	incl. in rate	incl. in rate	\$5,089.5
Hydraulic Thumbs/Shear Attachment	Active	1.00	5.7	10	57.00	E	\$16.39	incl. in rate	incl. in rate	\$934.2
Air Tool, Chipping Hammer	Active	2.00	5.7	10	114.00	E	\$1.64	incl. in rate	incl. in rate	\$186.9
Air Compressor 600 cfm	Active	1.00	5.7	10	57.00	E	\$21.74	incl. in rate	incl. in rate	\$1,239.
				Labor Hours	499.52				TOTAL LABOR	\$31,021.
				Equipment Hours	499.52			TO	TAL EQUIPMENT	\$43,230.4

TERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling Disposal Cost	2.00	Loads	90lbs per CY	\$400.00		\$800.00
					TOTAL SUBCONTRACTS	\$800.00

SUMMARY OF COSTS						
Labor Cost	\$31,021.48 Labor	r Burden @	0.0%	\$0.00		\$31,021.48
Material Cost	\$0.00 Mate	rial Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$43,230.40 Equip	pment Tax @	7.75%	\$3,350.36		\$46,580.76
Subcontractors	\$800.00	•				\$800.00
DIRECT COST SUBTOTALS	\$75,052			\$3,350	DIRECT COST SUBTOTALS	\$78,402
Additional Pay Item Notes :						
	Cycle hauling(wait, load, travel				ng, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY- bic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.158	Project	: KRRP - Iron Gate			
Description	:	Camp Creek - Well house 10'x16' concrete block building	Group	: D16			
Quantity	:	160.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 4			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.08 per SF	Probable Low	Cost Parameter	1237.5	\$2,027	\$14
Total Cost	:	\$2,253	Probable High	Cost Parameter	1012.5	\$2,478	\$18

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	1.40	L	\$53.10	incl. in rate	incl. in rate	\$74.34
Laborer	Active	4.00	0.1	10	5.60	L	\$50.38	incl. in rate	incl. in rate	\$282.1
Equipment Operator (medium)	Active	2.00	0.1	10	2.80	L	\$72.91	incl. in rate	incl. in rate	\$204.1
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.40	E	\$203.63	incl. in rate	incl. in rate	\$285.0
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.40	E	\$64.23	incl. in rate	incl. in rate	\$89.9
				_						
				Labor Hours	9.8				TOTAL LABOR	\$560.
				Equipment Hours	2.8			TO	TAL EQUIPMENT	\$375

Description	Item	Order	Conversion	Order	Order	Ma	erial
	Quantity	Unit	Factor / Waste	Quantity	Price	C	ost

SUBCONTRACT COSTS Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	23	CY				
Conversion CY to Tons (2 tons per CY)	12.00	tons	Klamath County LandFill	\$74.00		\$888.0
Hauling cost to landfill	2.00	Loads	18 CY per load	\$200.00		\$400.00
					TOTAL SUBCONTRACTS	\$1,288.00

SUMMARY OF COSTS						
Labor Cost	\$560.61 Labor Burde	n @	0.0%	\$0.00		\$560.61
Material Cost	\$0.00 Material Tax	@	7.75%	\$0.00		\$0.00
Equipment Cost	\$375.00 Equipment 7	ax @	7.75%	\$29.06		\$404.07
Subcontractors	\$1,288.00					\$1,288.00
DIRECT COST SUBTOTALS	\$2,224			\$29	DIRECT COST SUBTOTALS	\$2,253
Additional Pay Item Notes :						

The price of removing a building is based on several factors including the size of the space, structural additions on the property, required permits and waste material clearing. A complete demo of a house and its foundation or basement can cost much as \$25,000.

The cost of removal can vary based on the area lived in and the typical wages in the region. Some estimates put a price tag of \$18,000 on buildozing a 1,500 square-foot house, while others show that the average estimate is around \$4-\$15 per square foot.

Hazardous waste can greatly impact the cost of clearing debris. Many older homes contain asbestos, and there are special fees and considerations associated with its removal and disposal. The national average cost to eliminate asbestos is about \$200-\$700 per hour. We take in consideration this aspect in our estimate assuming 3 Laborers working 1 days, 8 hours per day @\$350

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.161	Project :	KRRP - Iron Gate			
Description	:	Camp Creek - Concrete block double toilet bldg 10'x16'	Group :	D16			
Quantity	:	160.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project # :	4			
Work Days	:	0.1 Days	Estimator :	Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.08 per SF	Probable Low Cost F	Parameter	1237.5	\$2,027	\$14
Total Cost	:	\$2,253	Probable High Cost I	Parameter	1012.5	\$2,478	\$18

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.1	10	1.40	L	\$53.10	incl. in rate	incl. in rate	\$74.34
Laborer	Active	4.00	0.1	10	5.60	L	\$50.38	incl. in rate	incl. in rate	\$282.13
Equipment Operator (medium)	Active	2.00	0.1	10	2.80	L	\$72.91	incl. in rate	incl. in rate	\$204.14
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.40	E	\$203.63	incl. in rate	incl. in rate	\$285.08
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.40	E	\$64.23	incl. in rate	incl. in rate	\$89.92
				Labor Hours	9.8				TOTAL LABOR	\$560.61
				Equipment Hours	2.8			TOT	AL EQUIPMENT	\$375.00
				,		-				V 1. 1. 1. 1

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	23 CY				
Conversion CY to Tons (2 tons per CY)	12.00 tons	Klamath County LandFill	\$74.00		\$888.00
Hauling cost to landfill	2.00 Loads	18 CY per load	\$200.00		\$400.00
				TOTAL SUBCONTRACTS	\$1,288.00

SUMMARY OF COSTS					
Labor Cost	\$560.61 Labor Burden @	49.7%	\$0.00		\$560.61
Material Cost	\$0.00 Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$375.00 Equipment Tax @	7.75%	\$29.06		\$404.07
Subcontractors	\$1,288.00				\$1,288.00
DIRECT COST SUBTOTALS	\$2,224		\$29	DIRECT COST SUBTOTALS	\$2,253
Additional Pay Item Notes :					

TOTAL SUBCONTRACTS

\$1,200.00

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.162	Project : KRRP - Iron Gate			
Description	:	Camp Creek - Dump stations and approx. 2000 gal buried	Group : D16			
Quantity	:	1.00 EA				
Daily Production	:	1.88 EA per 10 hour shift	Project # : 4			
Work Days	: '	0.5 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,027.37 per EA	Probable Low Cost Parameter	2.15625	\$2,573	\$2,939.70
Total Cost		\$3,027	Probable High Cost Parameter	1.5	\$3 633	\$4 150 16

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$53.10	\$0.00		\$265.49
Vibratory Hammer & Extractor	Active	1.00	0.5	10	5.00	E	\$94.34	\$94.34		\$471.70
Backhoe Loader (91hp)	Active	1.00	0.5	10	5.00	E	\$40.35	\$40.35		\$201.7
Equipment Operator (medium)	Active	2.00	0.5	10	10.00	L	\$72.91	\$0.00		\$729.08
				Labor Hours	15			то	TAL LABOR	\$994.5

Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
onsumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$99.46		\$99.4

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost	3.00	Loads		\$400.00	\$1,200.00

SUMMARY OF COSTS					
Labor Cost	\$994.57 Labor Burden @	0.0%	\$0.00		\$994.57
Material Cost	\$99.46 Material Tax @	7.75%	\$7.71		\$107.16
Equipment Cost	\$673.45 Equipment Tax @	7.75%	\$52.19		\$725.64
Subcontractors	\$1,200.00				\$1,200.00
DIRECT COST SUBTOTALS	\$2,967		\$60	DIRECT COST SUBTOTALS	\$3,027
Additional Pay Item Notes :					

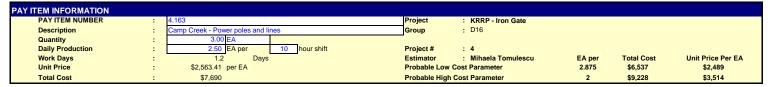
TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$174.40

\$1,200.00

CREW COSTS



Description	Idle	crew	Worked	/day	Hours	UE	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.2	10	12.00	L	\$53.10	incl. in rate	incl. in rate	\$637.16
Electrician	Active	1.00	1.2	10	12.00	L	\$49.75	incl. in rate	incl. in rate	\$597.04
Hydraulic Crane (17tn)	Active	1.00	1.2	10	12.00	E	\$81.52	incl. in rate	incl. in rate	\$978.24
Laborer	Active	2.00	1.2	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	1.2	10	12.00	E	\$31.90	incl. in rate	incl. in rate	\$382.80
Vibratory Hammer & Extractor	Active	1.00	1.2	10	12.00	E	\$94.34	incl. in rate	incl. in rate	\$1,132.08
Truck Driver (heavy)	Active	1.00	1.2	10	12.00	L	\$63.35	incl. in rate	incl. in rate	\$760.19
Truck, Utility, with Man-Basket	Active	1.00	1.2	10	12.00	E	\$31.90	incl. in rate	incl. in rate	\$382.80
				Labor Hours					TOTAL LABOR	\$3,203.51
				Equipment Hours	48			ТОТ	AL EQUIPMENT	\$2,875.92

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc	1.00	LS	1.000	1.00	\$160.18	\$160.1
opsoil placement and grading, loam or topsoil, .E. loader, 1-1/2 C.Y., remove and stockpile on ite, spread from pile to rough finish grade						
	3.00	CY	1.000	3.00	\$4.74	\$14.

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost	3.00	Loads		\$400.00	\$1,200.00

Labor Cost	\$3,203.51 Labor Burden @	0.0% \$0.00		\$3,203.51
Material Cost	\$174.40 Material Tax @	7.75% \$13.52		\$187.91
Equipment Cost	\$2,875.92 Equipment Tax @	7.75% \$222.88		\$3,098.80
Subcontractors	\$1,200.00	·		\$1,200.00
IRECT COST SUBTOTALS	\$7,454	\$236	DIRECT COST SUBTOTALS	\$7,690
dditional Pay Item Notes :				

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$53.10	incl. in rate	incl. in rate	\$849.55
Equipment Operator (medium)	Active	2.00	1.6	10	32.00	L	\$72.91	incl. in rate	incl. in rate	\$2,333.06
Laborer	Active	2.00	1.6	10	32.00	L	\$50.38	incl. in rate	incl. in rate	\$1,612.16
Dozer (235hp)(CATD7)	Active	3.00	1.6	10	48.00	E	\$165.11	incl. in rate	incl. in rate	\$7,925.28
Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn)	Active	2.00	1.6	10	32.00	E	\$72.79	incl. in rate	incl. in rate	\$2,329.28
0										
			Li	abor Hours	80				TOTAL LABOR	\$4,794.77
			Equipn	ment Hours	80				TOTAL EQUIPMENT	\$10,254.56

ATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0

SUBCONTRACT COSTS					
Description	Quantity	Units Notes /	Unit		Contract or Quote
		Company	Price		Amount
				TOTAL SUBCONTRACTS	\$0.00

SUMMA	ARY OF COSTS						
Labor C	ost	\$4,794.77	Labor Burden @	0.0%			\$4,794.77
Materia	Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipm	ent Cost	\$10,254.56	Equipment Tax @	7.75%	\$794.73		\$11,049.29
Subcon	tractors	\$0.00					\$0.00
DIRECT	COST SUBTOTALS	\$15,049	•		\$795	DIRECT COST SUBTOTALS	\$15,844
Addition	al Pay Item Notes :						_

Crew will grade, rip, and reseed 1/3 of anchor per day, All equipment will be staged at area during operation due to the location of the operation. Seeding was assumed to be the same seeding used on other parts of the job using the same ratio.

TOTAL EQUIPMENT

\$2,297.95

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.170	Project : KRRP - Iron G	Sate			i
Description	:	Dutch Creek - 50'4'3' Dock Concrete Abutment	Group : D16				
Quantity	:	22.00 CY					
Daily Production	:	185.00 CY per 10 hour shift	Project # : 4				
Work Days	:	0.1 Days	Estimator : Mihaela Tomu	ılescu CY per	Total Cost	Unit Price Per CY	
Unit Price	:	\$344.64 per CY	Probable Low Cost Parameter	203.5	\$6,824	\$354	
Total Cost	:	\$7.582	Probable High Cost Parameter	166.5	\$8.340	\$433	

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	2.00	0.1	10	2.40	L	\$53.10	incl. in rate	incl. in rate	\$127.43
Equipment Operator (medium)	Active	8.00	0.1	10	9.60	L	\$72.91	incl. in rate	incl. in rate	\$699.92
Steelworker	Active	6.00	0.1	10	7.20	L	\$72.07	incl. in rate	incl. in rate	\$518.92
Electrician	Active	1.00	0.1	10	1.20	L	\$49.75	incl. in rate	incl. in rate	\$59.70
Vibratory Hammer & Extractor	Active	3.00	0.1	10	3.60	E	\$94.34	incl. in rate	incl. in rate	\$339.62
Hydraulic Excavator (6.0cy)	Active	3.00	0.1	10	3.60	E	\$322.48	incl. in rate	incl. in rate	\$1,160.93
Loader, FE Rubber Tire (8.6cy)	Active	3.00	0.1	10	3.60	Е	\$221.50	incl. in rate	incl. in rate	\$797.40
				Labor Hours	20.4				TOTAL LABOR	\$1,405.9

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
					-	

Equipment Hours 10.8

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	1 EA	Cost per Mob	\$2,500.00		\$2,500.00
Hauling Disposal Cost	3.00 Loads		\$400.00		\$1,200.00
				TOTAL SUBCONTRACTS	\$3,700.00

JMMARY OF COSTS					
oor Cost	\$1,405.97 L	_abor Burden @	0.0%	\$0.00	
erial Cost	\$0.00	Material Tax @	7.75%	\$0.00	
Equipment Cost	\$2,297.95	Equipment Tax @	7.75%	\$178.09	
Subcontractors	\$3,700.00				
RECT COST SUBTOTALS	\$7,404			\$178	DIRECT COST SUBTOTALS
Iditional Pay Item Notes :					

Based on RS Means - "Selective concrete demolition, reinforcing 1% - 2% of cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY - work done with crew B9" and "Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH, excludes loading equipment Crew B348"

PAY ITEM COST DETAIL WORKSHEET

4.172 Mirror Cove - Concrete Total

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.172	Project	: KRRP - Iron Gate			
Description	:	Mirror Cove - Concrete Total	Group	: D16			
Quantity	:	89.00 CY					
Daily Production	:	187.50 CY per 10 hour shift	Project #	: 4			
Work Days	:	0.5 Days	Estimator	: Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$89.03 per CY	Probable Low (Cost Parameter	206.25	\$7,131	\$92
Total Cost	:	\$7,924	Probable High	Cost Parameter	168.75	\$8,716	\$112

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	4.70	L	\$53.10	incl. in rate	incl. in rate	\$249.56
Laborer	Active	4.00	0.5	10	18.80	L	\$50.38	incl. in rate	incl. in rate	\$947.14
Equipment Operator (medium)	Active	2.00	0.5	10	9.40	L	\$72.91	incl. in rate	incl. in rate	\$685.34
Hydraulic Excavator (2.5cy)	Active	1.00	0.5	10	4.70	E	\$203.63	incl. in rate	incl. in rate	\$957.06
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	0.5	10	4.70	E	\$36.58	incl. in rate	incl. in rate	\$171.93
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	10	4.70	E	\$64.23	incl. in rate	incl. in rate	\$301.88
.uadei, FE Rubbei Tile (5.5cy)	Active	1.00	0.5	10	4.70		\$04.23	inci. in rate	III. III Tale	\$30 T.C

Labor Hou	rs 32.9	TOTAL LABOR	\$1,882.04
Equipment Hou	rs 14.1	TOTAL EQUIPMENT	\$1,430.87

Item	Order	Conversion	Order	Order	Material
Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	1 EA	Cost per Mob	\$2,500.00	\$2,500.00
Hauling Disposal Cost	5.00 Loads	•	\$400.00	\$2,000.00

TOTAL MATERIAL

					TOTAL SUBCONTRACTS	\$4,500.00
SUMMARY OF COSTS						
Labor Cost	\$1,882.04	Labor Burden @	0.0%	\$0.00		\$1,882.04
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$1,430.87	Equipment Tax @	7.75%	\$110.89		\$1,541.76
Subcontractors	\$4,500.00					\$4,500.00
DIRECT COST SUBTOTALS	\$7,813			\$111	DIRECT COST SUBTOTALS	\$7,924
Additional Pay Item Notes :						
						l l

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.173	Project	: KRRP - Iron Gate			
Description	:	Mirror Cove - 10'x16' Toilet Vault	Group	: D16			
Quantity	:	160.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 4			
Work Days	:	0.1 Days	Estimator	: Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$14.08 per SF	Probable Low	Cost Parameter	1237.5	\$2,027	\$14
Total Cost	:	\$2,253	Probable High	Cost Parameter	1012.5	\$2,478	\$18

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.1	10	1.40	L	\$53.10	incl. in rate	incl. in rate	\$74.34
Laborer	Active	4.00	0.1	10	5.60	L	\$50.38	incl. in rate	incl. in rate	\$282.13
Equipment Operator (medium)	Active	2.00	0.1	10	2.80	L	\$72.91	incl. in rate	incl. in rate	\$204.14
Hydraulic Excavator (2.5cy)	Active	1.00	0.1	10	1.40	E	\$203.63	incl. in rate	incl. in rate	\$285.08
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.40	Е	\$64.23	incl. in rate	incl. in rate	\$89.92
				Labor Hours	9.8				TOTAL LABOR	\$560.61
				Equipment Hours	2.8			тот	TAL EQUIPMENT	\$375.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	23 CY				\$0.00
Conversion CY to Tons (2 tons per CY)	12.00 tons	Klamath County LandFill	\$74.00		\$888.00
Hauling cost to landfill	2.00 Loads	18 CY per load	\$200.00		\$400.00
				TOTAL SUBCONTRACTS	\$1,288.00

JMMARY OF COSTS				
.abor Cost	\$560.61 Labor Burden @	0.0% \$0.00		\$56
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		
quipment Cost	\$375.00 Equipment Tax @	7.75% \$29.06		\$4
ubcontractors	\$1,288.00			\$1,2
ECT COST SUBTOTALS	\$2,224	\$29	DIRECT COST SUBTOTALS	\$
litional Pay Item Notes :				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	4.174	Project : KRRP - Iron Gate			
Description	:	Mirror Cove - 2, 30'x5' Composite Gangplanks w/ aluminum	Group : D16			
Quantity	:	300.00 SF				
Daily Production	:	375.00 SF per 10 hour shift	Project # : 4			
Work Days	:	0.8 Days	Estimator : M Mihaela Tomulescu	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$16.22 per SF	Probable Low Cost Parameter	412.5	\$4,381	\$17
Total Cost	:	\$4.867	Probable High Cost Parameter	337.5	\$5.354	\$20

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
•	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$53.10	incl. in rate	incl. in rate	\$424.78
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.91	incl. in rate	incl. in rate	\$583.26
Laborer	Active	3.00	0.8	10	24.00	L	\$50.38	incl. in rate	incl. in rate	\$1,209.12
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.8	10	8.00	E	\$75.42	incl. in rate	incl. in rate	\$603.36
				Labor Hours	40				TOTAL LABOR	\$2,217.16
				Equipment Hours	8				TAL EQUIPMENT	\$603.36

Quantity	Unit	Factor / Waste	Quantity	Price		Cost
					TOTAL MATERIAL	\$0.00
						TOTAL MATERIAL

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling Disposal Cost	5.00	Loads		\$400.00		\$2,000.00
					TOTAL SUBCONTRACTS	\$2,000.00

SUMMARY OF COSTS						
Labor Cost	\$2,217.16	Labor Burden @	0.0%	\$0.00		\$2,217.16
Material Cost		Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$603.36	Equipment Tax @	7.75%	\$46.76		\$650.12
Subcontractors	\$2,000.00					\$2,000.00
DIRECT COST SUBTOTALS	\$4,821			\$47	DIRECT COST SUBTOTALS	\$4,867
Additional Pay Item Notes :						

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.177	Project	: KRRP - Iron Gate			
Description	:	Mirror Cove - Regrade site	Group	: D16			
Quantity	:	3.00 AC	='				
Daily Production	:	1.00 AC per 10 hour shift	Project #	: 4			
Work Days	:	3.0 Days	Estimator	: Mihaela Tomulescu	AC per	Total Cost	Unit Price Per AC
Unit Price	:	\$6,653.90 per AC	Probable Low C	ost Parameter	1.15	\$16,967	\$6,461
Total Cost	:	\$19,962	Probable High C	Cost Parameter	0.85	\$22,956	\$8,742

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.0	10	30.00	L	\$53.10	incl. in rate	incl. in rate	\$1,592.9
Equipment Operator (medium)	Active	2.00	3.0	10	60.00	L	\$72.91	incl. in rate	incl. in rate	\$4,374.4
Laborer	Active	4.00	3.0	10	120.00	L	\$50.38	incl. in rate	incl. in rate	\$6,045.6
Grader, 180hp, 13' blade	Active	1.00	3.0	10	30.00	E	\$80.79	incl. in rate	incl. in rate	\$2,423.7
Dozer (235hp)(CATD7)	Active	1.00	3.0	10	30.00	Е	\$165.11	incl. in rate	incl. in rate	\$4,953.3
				Labor Hours	210				TOTAL LABOR	\$12,012.9
				Equipment Hours	60			TO'	TAL EQUIPMENT	\$7,377.0
IATERIAL COSTS										
Description	Item	Order		Conversion	Order		Order			Material
	Quantity	Unit		Factor / Waste	Quantity		Price			Cost

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

\$12,012.99
\$0.00
\$7,948.72
\$0.00
\$19,96

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.181	Project	: KRRP - Iron Gate			
				D16			
December 1		Ourdants Brief Broads store access and add the transfer of control					
Description	:	Overlook Point - Regrade steep access road and site to natural contours	Group	:			
Quantity	:	0.50 AC					
Daily Production	:	1.00 AC per 10 hour shift	Project #	: 4			
Work Days	:	0.5 Days	Estimator	: M Mihaela Tomulescu	AC per	Total Cost	Unit Price Per AC
Unit Price	:	\$6,653.90 per AC	Probable Low Co	ost Parameter	1.15	\$2,828	\$6,461
Total Cost	:	\$3,327	Probable High C	ost Parameter	0.85	\$3,826	\$8,742

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$53.10	incl. in rate	incl. in rate	\$265.49
Equipment Operator (medium)	Active	2.00	0.5	10	10.00	L	\$72.91	incl. in rate	incl. in rate	\$729.08
Laborer	Active	4.00	0.5	10	20.00	L	\$50.38	incl. in rate	incl. in rate	\$1,007.60
Grader, 180hp, 13' blade	Active	1.00	0.5	10	5.00	Е	\$80.79	incl. in rate	incl. in rate	\$403.95
Dozer (235hp)(CATD7)	Active	1.00	0.5	10	5.00	Е	\$165.11	incl. in rate	incl. in rate	\$825.55
				Labor Hours	35				TOTAL LABOR	\$2,002.17
				Equipment Hours	10			тот	TAL EQUIPMENT	\$1,229.50

MATERIAL COSTS Description	ltem	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS					
Labor Cost	\$2,002.17 Labor Burde	en @ 0.0°	% \$0.00		
Material Cost	\$0.00 Material Tax	x @ 7.75°	% \$0.00		ı
Equipment Cost	\$1,229.50 Equipment T	Tax @ 7.759	% \$95.29		Ī
Subcontractors	\$0.00				I
DIRECT COST SUBTOTALS	\$3,232		\$95	DIRECT COST SUBTOTALS	
Additional Day Itam Nates				-	

al Pay Item Notes:

Crew is based off clear and grub crew B7 off of RSM means. Production for the crew in .69 ac per day to clear and process the trees/ shrubs on site. Assumed Seeding, mechanical seeding, 215 lb/acre with crew B66. The amount and type of seed are calculated as 215 lbs per acre in total.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.182	Project	: KRRP - Iron Gate			
Description	:	Long Gulch - 80'x25x4" Concrete boat ramp to be removed	Group	: D16			
Quantity	:	25.00 CY					
Daily Production	:	125.00 CY per 10 hour shift	Project #	: 4			
Work Days	:	0.2 Days	Estimator	: M Mihaela Tomulescu	CY per	Total Cost	Unit Price Per CY
Unit Price	:	\$290.80 per CY	Probable Low	Cost Parameter	137.5	\$6,543	\$299
Total Cost	:	\$7.270	Probable High	Cost Parameter	112.5	\$7.997	\$365

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	2.00	0.2	10	4.00	L	\$53.10	incl. in rate	incl. in rate	\$212.39
Equipment Operator (medium)	Active	8.00	0.2	10	16.00	L	\$72.91	incl. in rate	incl. in rate	\$1,166.53
Steelworker	Active	6.00	0.2	10	12.00	L	\$72.07	incl. in rate	incl. in rate	\$864.86
Electrician	Active	1.00	0.2	10	2.00	L	\$49.75	incl. in rate	incl. in rate	\$99.51
Vibratory Hammer & Extractor	Active	3.00	0.2	10	6.00	E	\$94.34	incl. in rate	incl. in rate	\$566.04
Hydraulic Excavator (6.0cy)	Active	3.00	0.2	10	6.00	E	\$322.48	incl. in rate	incl. in rate	\$1,934.88
Loader, FE Rubber Tire (8.6cy)	Active	3.00	0.2	10	6.00	E	\$221.50	incl. in rate	incl. in rate	\$1,329.00
				Labor Hours Equipment Hours	34 18			то	TOTAL LABOR	\$2,343.29 \$3,829.92

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL \$0

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hauling Disposal Cost	2.00	Loads		\$400.00		\$800.00
					-	
					TOTAL SUBCONTRACTS	\$800.00

SUMMARY OF COSTS					
Labor Cost	\$2,343.29 La	abor Burden @	0.0%	\$0.00	
Material Cost	\$0.00 M	Naterial Tax @	7.75%	\$0.00	
Equipment Cost	\$3,829.92 E	quipment Tax @	7.75%	\$296.82	
Subcontractors	\$800.00				
DIRECT COST SUBTOTALS	\$6,973			\$297	DIRECT COST SUBTOTALS
Additional Pay Itom Notos					•

Based on RS.Means - "Selective concrete demolition, reinforcing 1% - 2% of cross-sectional area, break up into small pieces, excludes shoring, bracing, saw or torch cutting, loading, hauling, dumping, 650 CY - work done with crew B9" and "Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 12 C.Y. truck, cycle 30 miles, 50 MPH, excludes loading equipment Crew B34B"

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	4.185	Project	: KRRP - Iron Gate			
		Concrete Lining Installation for Diversion Tunnel		D02			
Description	:		Group	:			
Quantity	:	1.00 LS	Ÿ				
Daily Production	:	0.05 LS per 10 hour shift	Project #	: 4			
Work Days	:	20.0 Days	Estimator	: Mil Mihaela Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$1,116,948.40 per LS	Probable Low	Cost Parameter	0.055	\$1,005,254	\$1,148,402
Total Cost		\$1 116 948	Probable High	Cost Parameter	0.045	\$1 228 643	\$1 403 602

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
						_			_	
				Labor Hours	0				TOTAL LABOR	\$0.00
				Equipment Hours	0				TOTAL EQUIPMENT	\$0.00
				=q=ipinionit riouro					OTAL EQUI MEN	\$0.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Tunnel Lining (Shotcrete with Reinforcement)	1.00	LS	RSMs (2780 CY @ \$401.78/CY)	\$1,116,948.40		\$1,116,948.40
					TOTAL SUBCONTRACTS	\$1.116.948.40

SUMMARY OF COSTS				
Labor Cost	\$0.00 Labor Burden @	0.0% \$0.00		\$0.00
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$0.00 Equipment Tax @	7.75% \$0.00		\$0.00
Subcontractors	\$1,116,948.40			\$1,116,948.40
DIRECT COST SUBTOTALS	\$1,116,948	\$0	DIRECT COST SUBTOTALS	\$1,116,948
Additional Pay Item Notes :				
Subcontractor will install reinforcement and	d shotcrete concrete lining in diversion tunnel.			
	•			

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.025	Project	: KRRP - Iron Gate			
Description	:	Remove Distribution Poles near Iron Gate Hydro Plant	Group	: D05			
Quantity	:	5.00 EA					
Daily Production	:	3.13 EA per 10 hour shift	Project #	: 4			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,731.75 per EA	Probable Low C	ost Parameter	3.59375	\$7,360	\$1,682
Total Cost	:	\$8,659	Probable High C	Cost Parameter	2.5	\$10,390	\$2,374

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$53.10	incl. in rate	incl. in rate	\$849.55
Electrician	Active	1.00	1.6	10	16.00	L	\$49.75	incl. in rate	incl. in rate	\$796.05
Hydraulic Crane (17tn)	Active	1.00	1.6	10	16.00	E	\$81.52	incl. in rate	incl. in rate	\$1,304.32
Laborer	Active	2.00	1.6	10	32.00	L	\$50.38	incl. in rate	incl. in rate	\$1,612.16
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	1.6	10	16.00	E	\$31.90	incl. in rate	incl. in rate	\$510.40
Vibratory Hammer & Extractor	Active	1.00	1.6	10	16.00	E	\$94.34	incl. in rate	incl. in rate	\$1,509.44
Truck Driver (heavy)	Active	1.00	1.6	10	16.00	L	\$63.35	incl. in rate	incl. in rate	\$1,013.58
Truck, Utility, with Man-Basket	Active	1.00	1.6	10	16.00	E	\$31.90	incl. in rate	incl. in rate	\$510.40
			·	Labor Hours	80				TOTAL LABOR	\$4,271.34
				Equipment Hours	64			TO	AL EQUIPMENT	\$3,834.56

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
nsumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$213.57	\$213
psoil placement and grading, loam or topsoil, E. loader, 1-1/2 C.Y., remove and stockpile on e, spread from pile to rough finish grade	5.00	CY	1.000	5.00	\$4.74	\$23

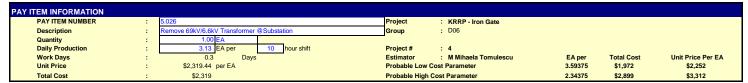
SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$4,271.34	Labor Burden @	0.0%	\$0.00		\$4,271.34
Material Cost	\$237.27	Material Tax @	7.75%	\$18.39		\$255.66
Equipment Cost	\$3,834.56	Equipment Tax @	7.75%	\$297.18		\$4,131.74
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$8,343			\$316	DIRECT COST SUBTOTALS	\$8,659
Additional Pay Item Notes :						

Production is based off of RSMs using Crew R3 (1 Forman and 1 Electrician,1 Crane). Considered 2 laborer and 1 Vibratory Hammer for demolish the pole foundation and helping placing poles in a designated place and loading them in the truck for disposal. This process includes filling in pole locations with gravel, clean fill and topsoil.

TOTAL MATERIAL

\$58.95



Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.3	10	3.00	L	\$51.95	incl. in rate	incl. in rate	\$155.86
Electrician	Active	1.00	0.3	10	3.00	L	\$49.75	incl. in rate	incl. in rate	\$149.26
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.3	10	3.00	E	\$221.50	incl. in rate	incl. in rate	\$664.50
Truck Driver (light)	Active	1.00	0.3	10	3.00	L	\$61.92	incl. in rate	incl. in rate	\$185.76
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.3	10	3.00	E	\$111.64	incl. in rate	incl. in rate	\$334.92
Equipment Operator (light)	Active	1.00	0.3	10	3.00	L	\$71.39	incl. in rate	incl. in rate	\$214.17

Labor Hours	12	TOTAL LABOR	\$705.05
Equipment Hours	6	TOTAL EQUIPMENT	\$999.42

Item Quantity	Order	Conversion Factor / Waste	Order	Order Price	Material Cost
Quality	Offic	ractor / Waste	Quantity	1 1100	0031
1.00	LS	1.000	1.00	\$35.25	\$35.25
5.00	CY	1.000	5.00	\$4.74	\$23.70
	Quantity 1.00	Quantity Unit	Quantity Unit Factor / Waste 1.00 LS 1.000	Quantity Unit Factor / Waste Quantity 1.00 LS 1.000 1.00	Quantity Unit Factor / Waste Quantity Price 1.00 LS 1.000 1.00 \$35.25

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00 \$74.00
Disposal Fee	1.00	Ton		\$74.00	\$74.00
				TOTAL CURCO	NITRACTS \$474.00

SUMMARY OF COSTS						
Labor Cost	\$705.05	Labor Burden @	0.0%	\$0.00		\$705.05
Material Cost	\$58.95	Material Tax @	7.75%	\$4.57		\$63.52
Equipment Cost	\$999.42	Equipment Tax @	7.75%	\$77.46		\$1,076.88
Subcontractors	\$474.00					\$474.00
DIRECT COST SUBTOTALS	\$2,237	_		\$82	DIRECT COST SUBTOTALS	\$2,319
Additional Pay Item Notes :						
Production is based off of RSMs usin	g Crew Elec2 : 1 El. Forn	nan and 1 Electrician,1 Loader	and 1 truck for disposal.			
	-					

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.027	Project	: KRRP - Iron Gate			
Description	:	Remove 6.6kV Power Circuit Breaker @Substation	Group	: D06			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 4			
Work Days	:	0.8 Days	Estimator	: M Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,396.12 per EA	Probable Low (Cost Parameter	1.4375	\$2,887	\$3,298
Total Cost	:	\$3,396	Probable High	Cost Parameter	0.9375	\$4,245	\$4,850

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$51.95	incl. in rate	incl. in rate	\$415.62
Electrician	Active	1.00	0.8	10	8.00	L	\$49.75	incl. in rate	incl. in rate	\$398.02
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.8	10	8.00	E	\$64.23	incl. in rate	incl. in rate	\$513.84
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.8	10	8.00	E	\$111.64	incl. in rate	incl. in rate	\$893.12
Truck Driver (light)	Active	1.00	0.8	10	8.00	L	\$61.92	incl. in rate	incl. in rate	\$495.35
Equipment Operator (light)	Active	1.00	0.8	10	8.00	L	\$71.39	incl. in rate	incl. in rate	\$571.12
				Labor Hours	32				TOTAL LABOR	\$1,880.1
				Equipment Hours	16			TO:	TAL EQUIPMENT	\$1,406.9

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
					_	\$0.00
					TOTAL CURCONTRACTO	£0.00

					TOTAL GOLGON MAGTO	ψ0.00
SUMMARY OF COSTS						
Labor Cost	£1 000 12	Labor Burden @	0.0%	\$0.00		\$1,880.1
Material Cost		Material Tax @	7.75%	\$0.00	•	\$1,000.
Equipment Cost		Equipment Tax @	7.75%	\$109.04		\$1,516.0
Subcontractors	\$0.00	Equipment rax &	7.7370	ψ103.0 1		\$0.0
	77.00		<u> </u>			
DIRECT COST SUBTOTALS	\$3,287			\$109	DIRECT COST SUBTOTALS	\$3,390
Additional Pay Item Notes :						
Production is based off of RSMs using	Crew Flec2 : 1 FL Form	nan and 1 Electrician 1 Loader	and 1 truck for disposal			
Troduction is based on or recinic doing	01011 21002 : 1 21:1 011	iarrana i Elocinolari, i Ecador	and radok for diopodal.			

5.028 Remove Generator @Substation

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.028	Project	: KRRP - Iron Gate			
Description	:	Remove Generator @Substation	Group	: D06			
Quantity	:	1.00 EA					
Daily Production	:	0.31 EA per 10 hour shift	Project #	: 4			
Work Days	:	3.2 Days	Estimator	: M Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$14,304.19 per EA	Probable Low C	Cost Parameter	0.359375	\$12,159	\$13,890
Total Cost		\$14.304	Probable High (Cost Parameter	0.234375	\$17.880	\$20.426

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	3.2	10	32.00	L	\$51.95	incl. in rate	incl. in rate	\$1,662.50
Electrician	Active	1.00	3.2	10	32.00	L	\$49.75	incl. in rate	incl. in rate	\$1,592.1
Hydraulic Crane (17tn)	Active	1.00	3.2	10	32.00	E	\$81.52	incl. in rate	incl. in rate	\$2,608.6
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	3.2	10	32.00	E	\$111.64	incl. in rate	incl. in rate	\$3,572.48
Truck Driver (light)	Active	1.00	3.2	10	32.00	L	\$61.92	incl. in rate	incl. in rate	\$1,981.4
Equipment Operator (crane)	Active	1.00	3.2	10	32.00	L	\$75.25	incl. in rate	incl. in rate	\$2,408.0
				Labor Hours	128				TOTAL LABOR	\$7,644.0
				Equipment Hours	64			TO	TAL EQUIPMENT	\$6,181.1

Description	Item	Order	Conversion	Order	Order	Materia
	Quantity	Unit	Factor / Waste	Factor / Waste Quantity		Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS								
Labor Cost	\$7,644.03	Labor Burden @	0.0%	\$0.00		\$7,644.03		
Material Cost	\$0.00	Material Tax @	7.8%	\$0.00		\$0.00		
Equipment Cost	\$6,181.12	Equipment Tax @	7.8%	\$479.04		\$6,660.16		
Subcontractors	\$0.00					\$0.00		
DIRECT COST SUBTOTALS	\$13,825			\$479	DIRECT COST SUBTOTALS	\$14,304		
Additional Pay Item Notes:								

Production is based off of RSMs using Crew Elec2 : 1 El. Forman and 1 Electrician,1 Crane , 1 Laborer and 1 truck for disposal.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	5.029		Project	: KRRP - Iron Gate			
Description	:	Remove all auxiliary equipment @Sub	bstation (Allowance)	Group	: D06			
Quantity	:	1.00 LS		 '				
Daily Production	:	0.31 LS per	10 hour shift	Project #	: 4			
Work Days	:	3.0 Days		Estimator	: M Mihaela Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	:	\$30,514.04 per LS		Probable Low Co	ost Parameter	0.359375	\$25,937	\$29,630
Total Cost	:	\$30,514		Probable High C	ost Parameter	0.234375	\$38,143	\$43,574

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	3.0	10	30.00	L	\$51.95	incl. in rate	incl. in rate	\$1,558.59
Electrician	Active	2.00	3.0	10	60.00	L	\$49.75	incl. in rate	incl. in rate	\$2,985.18
Hydraulic Crane (17tn)	Active	1.00	0.2	10	2.00	E	\$81.52	incl. in rate	incl. in rate	\$163.04
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	0.2	10	4.00	E	\$111.64	incl. in rate	incl. in rate	\$446.56
Truck Driver (light)	Active	2.00	0.2	10	4.00	L	\$61.92	incl. in rate	incl. in rate	\$247.68
Equipment Operator (crane)	Active	1.00	0.2	10	2.00	L	\$75.25	incl. in rate	incl. in rate	\$150.50
Laborer	Active	2.00	4.0	10	80.00	L	\$50.38	incl. in rate	incl. in rate	\$4,030.40
Hydraulic Excavator (2.5cy)	Active	1.00	4.0	10	40.00	E	\$203.63	incl. in rate	incl. in rate	\$8,145.20
Truck, Utility, with Man-Basket	Active	1.00	2.0	10	20.00	E	\$31.90	incl. in rate	incl. in rate	\$638.00
Vibratory Hammer & Extractor	Active	1.00	0.2	10	2.00	E	\$94.34	incl. in rate	incl. in rate	\$188.68
Equipment Operator (light)	Active	1.00	4.0	10	40.00	L	\$71.39	incl. in rate	incl. in rate	\$2,855.60
Grader, 180hp, 13' blade	Active	1.00	4.0	10	40.00	E	\$80.79	incl. in rate	incl. in rate	\$3,231.60
				Labor Hours	216				TOTAL LABOR	\$11,827.
				Equipment Hours	108			TO	TAL EQUIPMENT	\$12,813.0

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high voltage line work - Rent per day	1.00	days		\$3,000.00	\$3,000.00
Hauling to Yreka Transfer 40 Miles	1.00	Load	20 tons per load	\$400.00	\$400.00
Disposal Fee	20.00	Ton		\$74.00	\$1,480.00
				TOTAL SU	BCONTRACTS \$4,880.00

UMMARY OF COSTS					
Labor Cost	\$11,827.95	Labor Burden @	0.0%	\$0.00	
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00	
Equipment Cost	\$12,813.08	Equipment Tax @	7.75%	\$993.01	
Subcontractors	\$4,880.00				
DIRECT COST SUBTOTALS	\$29,521	•		\$993	DIRECT COST SUBTOTALS
Additional Pay Item Notes :					·

Assumed 3 days of work to clean and the substation rights-of-way to be restored to the natural conditions. Production is based off of RSMs using Crew formed of 1 Forman, 4 Electrician, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck., 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations, 1 utility truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard.

PAY ITEM COST DETAIL WORK	COLLET		5.0	JO NEW COMMECUN	on enon oat	e natchery no	iii Facilicorp's F	IOITIDI OOK SUL	ostation (Allowance
PAY ITEM INFORMATION									
PAY ITEM NUMBER	5.030			Project	: KRRP - Ir	on Gate			
Description	: (Allowance)	N. O.		Group	: D06				
Quantity Daily Production		LS per	10 hour shift	Project #	: 4				
Work Days	: 10.0	Days	nour stillt	Estimator	: Mihaela 1	Tomulescu	LS per	Total Cost	Unit Price Per LS
Unit Price	: \$279,000.00	per LS		Probable Lo	w Cost Parameter	r	1.375	\$251,100	\$286,857
Total Cost	: \$279,000			Probable High	gh Cost Paramete	r	1.125	\$306,900	\$350,603
CREW COSTS									
Description	Active	#in D	ays Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew Wo	rked /day	Hours		Rate	Cost	Rate	Cost
				bor Hours 0 ent Hours 0			тот	TOTAL LABOR	\$0.00 \$0.00
MATERIAL COSTS									
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	_	Order Price			Material Cost
							T	OTAL MATERIAL	\$0.00
SUBCONTRACT COSTS									
Description	Quantity	Units	Notes / Company		Unit Price				Contract or Quote Amount
New Connection (Allowane)	2.22			0.000					
New Connection (Allowance)	0.90	miles		310,000	J.UU				\$279,000.00
							TOTAL S	UBCONTRACTS	\$279,000.00
SUMMARY OF COSTS Labor Cost		Labor Burden @		0.0% \$0	0.00				\$0.00

					TOTAL SUBCONTRACTS	\$279,000.00
SUMMARY OF COSTS						
Labor Cost	\$0.00	Labor Burden @	0.0%	\$0.00		\$0.00
Material Cost	\$0.00	Material Tax @	7.75%	\$0.00		\$0.00
Equipment Cost	\$0.00	Equipment Tax @	7.75%	\$0.00		\$0.00
Subcontractors	\$279,000.00					\$279,000.00
DIRECT COST SUBTOTALS	\$279,000	_		\$0	DIRECT COST SUBTOTALS	\$279,000
Additional Pay Item Notes :						
						I .
					Substation (5G19). Details for connection requirements are unknown at thi	
	owance for assumed 0.9 mile	es of overhead distribution line	e. Transmission line poles or structu	ires are common	ly between 60 and 140 feet tall. Distribution line structures are approxima	ely
40 to 60 feet tall.						
					poled or multi-poled. They can be single-circuited, carrying one set of	
transmission lines or double-circ		A typical new 69 KV overnead	a single-circuit transmission line cos	sts approximately	\$315,000 per mile as opposed to \$1.6 million per mile for a new 69 kV	

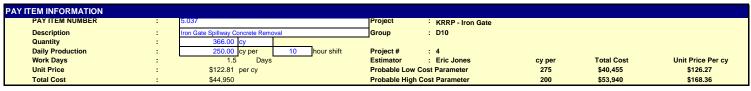
PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.036	Project	: KRRP - Iron Gate			
Description	:	Removal Of Residence Building (Spillway Bank)	Group	: D10			
Quantity	:	7,707.00 SF					
Daily Production	:	1,125.00 SF per 10 hour shift	Project #	: 4			
Work Days	:	6.9 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	:	\$13.92 per SF	Probable Low (Cost Parameter	1293.75	\$91,211	\$13.52
Total Cost	:	\$107,307	Probable High	Cost Parameter	956.25	\$123,403	\$18.29

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	6.9	10	69.00	L	\$53.10	incl. in rate	incl. in rate	\$3,663.69
Laborer	Active	4.00	6.9	10	276.00	L	\$50.38	incl. in rate	incl. in rate	\$13,904.88
Equipment Operator (medium)	Active	2.00	6.9	10	138.00	L	\$72.91	incl. in rate	incl. in rate	\$10,061.30
Hydraulic Excavator (5.0cy)	Active	1.00	6.9	10	69.00	E	\$274.63	incl. in rate	incl. in rate	\$18,949.47
Loader, FE Rubber Tire (3.5cy)	Active	1.00	6.9	10	69.00	E	\$64.23	incl. in rate	incl. in rate	\$4,431.87
				Labor Hours	483				TOTAL LABOR	\$27,629.88
					138					

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Conversion (SFXH*.33/27)	1,130	CY				\$0.00
Conversion CY to Tons (2 tons per CY)	566.00	tons	Klamath County Landfill	\$74.00		\$41,884.00
Hauling cost to landfill	63.00	Loads	18 CY per load	\$200.00		\$12,600.00
						\$0.00
					TOTAL SUBCONTRACTS	\$54,484.00

			TOTAL SUBCONTRACTS	\$54,484.00
SUMMARY OF COSTS				
Labor Cost	\$27,629.88 Labor Burden	0.0% \$0.00		\$27,629.8
Material Cost	\$0.00 Material Tax (7.75% \$0.00		\$0.0
Equipment Cost	\$23,381.34 Equipment Ta	. @ \$1,812.05		\$25,193.3
Subcontractors	\$54,484.00			\$54,484.0
IRECT COST SUBTOTALS	\$105,495	\$1,812	DIRECT COST SUBTOTALS	\$107,30
dditional Pay Item Notes :				



CREW COSTS	Anthor	# 1	D	Harris	T-4-1	. /=	I I a contra	Halo con co	Paradan.	Labor / Employment
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.5	10	15.00	L	\$53.10	incl. in rate	incl. in rate	\$796.46
Laborer	Active	3.00	1.5	10	45.00	L	\$50.38	incl. in rate	incl. in rate	\$2,267.10
Equipment Operator (medium)	Active	2.00	1.5	10	30.00	L	\$72.91	incl. in rate	incl. in rate	\$2,187.24
Truck Driver (heavy)	Active	1.00	1.5	10	15.00	L	\$63.35	incl. in rate	incl. in rate	\$950.24
Air Compressor 900 cfm	Active	1.00	1.5	10	15.00	E	\$38.87	incl. in rate	incl. in rate	\$583.03
Air Tool, Chipping Hammer	Active	2.00	1.5	10	30.00	E	\$1.64	incl. in rate	incl. in rate	\$49.17
Generator, Small Generator, 10 - 15 kW	Active	1.00	1.5	10	15.00	E	\$7.04	incl. in rate	incl. in rate	\$105.60
Hydraulic Excavator (2.5cy)	Active	1.00	1.5	10	15.00	E	\$203.63	incl. in rate	incl. in rate	\$3,054.45
Kobelco SK260LC-10 Ex With CP100 Magnet	Active	1.00	1.5	10	15.00	E	\$89.29	incl. in rate	incl. in rate	\$1,339.35
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	1.5	10	15.00	E	\$174.47	incl. in rate	incl. in rate	\$2,617.05
				Labor Hours	105				TOTAL LABOR	\$6,201.03
			E	quipment Hours	105				TOTAL EQUIPMENT	\$7,748.65

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

Quantity	Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
1	AL	Allowance	\$20,000.00	\$20,000.00
2.00	Loads	150lbs per CY	\$200.00	\$400.00
1.00	AL	Allowance	10,000.00	\$10,000.00

	1 2.00	1 AL 2.00 Loads	Company 1 AL Allowance 2.00 Loads 150lbs per CY	Company Price 1 AL Allowance \$20,000.00 2.00 Loads 150lbs per CY \$200.00

			TOTAL SUBCONTRACTS	\$30,400.00
CUMMARY OF COOTS				
SUMMARY OF COSTS			<u> </u>	
Labor Cost	\$6,201.03 Labor Burden @	0.0% \$0.00 Included in hourly labor rate.		\$6,201.03
Material Cost	\$0.00 Material Tax @	7.75% \$0.00		\$0.00
Equipment Cost	\$7,748.65 Equipment Tax @	7.75% \$600.52		\$8,349.18
Subcontractors	\$30,400.00			\$30,400.00
DIRECT COST SUBTOTALS	\$44,350	\$601	DIRECT COST SUBTOTALS	\$44,950
Additional Pay Item Notes :				

JC BOYLE DAM REMOVAL

TOTAL MATERIAL

\$127.00

PAY ITEM INFORMATION		1.001						
PAY ITEM NUMBER	:	1.001		Project	: KRRP - JC Boyle			
Description	:	Removal of Diversion Conduit	Bulkheads	Group	: D02			
Quantity	1.001	14.00 CY						
Daily Production	1.001	14.00 CY per	20 hour shift	Project #	: 1			
Work Days	1.001	1.0 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.001	\$1,566.66 per CY		Probable Low	Cost Parameter	14.70	\$20,837	\$1,417.46
Total Cost	1.001	\$21,933		Probable High	Cost Parameter	13.30	\$23,030	\$1,731.58

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	20	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	2.00	1.0	20	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.92
Equipment Operator (medium)	Active	1.00	1.0	20	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Equipment Operator (crane)	Active	1.00	1.0	20	20.00	L	\$81.60	incl. in rate	incl. in rate	\$1,631.96
Truck Driver (heavy)	Active	1.00	1.0	20	20.00	L	\$66.92	incl. in rate	incl. in rate	\$1,338.48
Hydraulic Excavator (2.5cy)	Active	1.00	1.0	20	20.00	E	\$205.40	incl. in rate	incl. in rate	\$4,108.00
Crawler Crane (130tn)	Active	1.00	1.0	20	20.00	E	\$262.91	incl. in rate	incl. in rate	\$5,258.20
Air Compressor 600 cfm	Active	1.00	1.0	20	20.00	E	\$21.74	incl. in rate	incl. in rate	\$434.78
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	1.0	20	20.00	E	\$57.41	incl. in rate	incl. in rate	\$1,148.20
Air Track Drill 4"	Active	1.00	1.0	20	20.00	Е	\$160.98	incl. in rate	incl. in rate	\$3,219.6
				Labor Hours	120				TOTAL LABOR	\$7,637.5
			Ear	uipment Hours	100			то	OTAL EQUIPMENT	\$14,168.7

MATERIAL COSTS						
Description	ltem	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Blasting Explosives and Caps	10.00	EA	1.000	10.00	\$12.70	\$127.00

SUBCONTRACT COSTS									
Description	Quantity	Units	Notes /	Unit		Contract or Quote			
			Company	Price		Amount			
					TOTAL SUBCONTRACTS	\$0.00			

Labor Cost	\$7,637.52 Labor Burden @	0.0%		\$7,637.52
Material Cost	\$127.00 Material Tax @	0.00% \$0.00		\$127.00
Equipment Cost	\$14,168.78 Equipment Tax @	0.00% \$0.00		\$14,168.78
Subcontractors	\$0.00			\$0.00
IRECT COST SUBTOTALS	\$21,933	\$0	DIRECT COST SUBTOTALS	\$21,933
dditional Pay Item Notes :				
	m the down stream side to avoid using divers due to the			

PAY ITEM INFORMATION		1.002					
PAY ITEM NUMBER	:	1.00	Project	: KRRP - JC Boyle			
Description	:	Remove Water from behind Tailrace Cofferdam	Group :	D02			
Quantity	1.002	500,000.00 GAL					
Daily Production	1.002	191,400.00 GAL per 10 hour shift	Project #	: 1			
Work Days	1.002	2.6 Days	Estimator	: Eric Jones	GAL per	Total Cost	Unit Price Per GAL
Unit Price	1.002	\$0.01 per GAL	Probable Low Cos	st Parameter	210,540.00	\$4,256	\$0.02
Total Cost	1.002	\$4,729	Probable High Co.	st Parameter	162,690.00	\$5,438	\$0.03

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.6	10	26.00	L	\$58.87	incl. in rate	incl. in rate	\$1,530.67
Laborer	Active	2.00	2.6	10	52.00	L	\$51.07	incl. in rate	incl. in rate	\$2,655.80
Pump, Submersible Trash Pump, 3" & 4"	Active	1.00	2.6	10	26.00	E	\$3.87	incl. in rate	incl. in rate	\$100.62
Truck, Pickup (4x4, 3/4tn)	Active	1.00	2.6	10	26.00	E	\$16.99	incl. in rate	incl. in rate	\$441.74
				Labor Hours	78				TOTAL LABOR	\$4,186.47
				Equipment Hours	52			TO	OTAL EQUIPMENT	\$542.36

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS										
Description	Quantity Unit	ts Notes /	Unit		Contract or Quote					
		Company	Price		Amount					
	-									
ĺ										
				TOTAL SUBCONTRACTS	\$0.00					

SUMMARY OF COSTS					
Labor Cost	\$4,186.47 Labor Burden @	0.0%	1		\$4,186.47
Material Cost	\$0.00 Material Tax @	0.00%	\$0.00		\$0.00
Equipment Cost	\$542.36 Equipment Tax @	0.00%	\$0.00		\$542.36
Subcontractors	\$0.00				\$0.00
DIRECT COST SUBTOTALS	\$4,729		\$0	DIRECT COST SUBTOTALS	\$4,729
Additional Pay Item Notes :					
3" pump can pump 19,140 gallons p	per hour, 191,400 gallons per 10 hour shift, rough 1.5 days to	remove water, 1 foreman t	o run operatio	on, 2 laborer to tend to pump during the day, 1 laborer to tend	

3" pump can pump 19,140 gallons per hour, 191,400 gallons per 10 hour shift, rough 1.5 days to remove water. 1 foreman to run operation, 2 laborer to tend to pump during the day, 1 laborer to tend pump at night.

PAY ITEM INFORMATION		1.003						
PAY ITEM NUMBER	:	1.003		Project	: KRRP - JC Boyle			
Description	:	Provide Dewatering behind Tailrace C	Cofferdam	Group	D02			
Quantity	1.003	1.00 LS		_'				
Daily Production	1.003	1.25 LS per 10	hour shift	Project #	: 1			
Work Days	1.003	0.8 Days		Estimator	: Eric Jones	LS per	Total Cost	Unit Price Per LS
Unit Price	1.003	\$67,995.82 per LS		Probable Low Co	st Parameter	1.38	\$61,196	\$44,506.35
Total Cost	1.003	\$67,996		Probable High Co	ost Parameter	1.06	\$78,195	\$73,595.48

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	23.0	10	230.00	L	\$58.87	incl. in rate	incl. in rate	\$13,540.56
Laborer	Active	2.00	46.0	10	920.00	L	\$51.07	incl. in rate	incl. in rate	\$46,987.16
Pump, Submersible Trash Pump, 3" & 4"	Active	1.00	92.0	10	920.00	Е	\$3.87	incl. in rate	incl. in rate	\$3,560.40
Truck, Pickup (4x4, 3/4tn)	Active	1.00	23.0	10	230.00	Е	\$16.99	incl. in rate	incl. in rate	\$3,907.70
				Labor Hours	1150				TOTAL LABOR	\$60,527.72
					1150				TAL EQUIPMENT	\$7,468.10

MATERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS										
Description	Quantity	Units	Notes /	Unit		Contract or Quote				
			Company	Price		Amount				
					_					
					TOTAL SUBCONTRACTS	\$0.0				

			TOTAL SUBCONTRACTS	ψ0.00
			-	
SUMMARY OF COSTS				
Labor Cost	\$60,527.72 Labor Burden @	0.0%		\$60,527.72
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$7,468.10 Equipment Tax @	0.00% \$0.00		\$7,468.10
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$67,996	\$0	DIRECT COST SUBTOTALS	\$67,996
Additional Pay Item Notes :				

Pump will be running for 3 months or 92 days (day and night), 1 laborer to maintain (refuel, adjust houses) during the day, 1 laborer to maintain (refuel, adjust houses) during the night, 1 foreman on activity .25 of the time to oversee operation.

PAY ITEM INFORMATION		1.001						
PAY ITEM NUMBER	:	1.001		Project	: KRRP - JC Boyle			
Description	:	Removal of Diversion Conduit	Bulkheads	Group	: D02			
Quantity	1.001	14.00 CY						
Daily Production	1.001	14.00 CY per	20 hour shift	Project #	: 1			
Work Days	1.001	1.0 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.001	\$1,566.66 per CY		Probable Low	Cost Parameter	14.70	\$20,837	\$1,417.46
Total Cost	1.001	\$21,933		Probable High	Cost Parameter	13.30	\$23,030	\$1,731.58

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	20	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	2.00	1.0	20	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.92
Equipment Operator (medium)	Active	1.00	1.0	20	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Equipment Operator (crane)	Active	1.00	1.0	20	20.00	L	\$81.60	incl. in rate	incl. in rate	\$1,631.96
Truck Driver (heavy)	Active	1.00	1.0	20	20.00	L	\$66.92	incl. in rate	incl. in rate	\$1,338.48
Hydraulic Excavator (2.5cy)	Active	1.00	1.0	20	20.00	E	\$205.40	incl. in rate	incl. in rate	\$4,108.00
Crawler Crane (130tn)	Active	1.00	1.0	20	20.00	E	\$262.91	incl. in rate	incl. in rate	\$5,258.20
Air Compressor 600 cfm	Active	1.00	1.0	20	20.00	E	\$21.74	incl. in rate	incl. in rate	\$434.78
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	1.0	20	20.00	E	\$57.41	incl. in rate	incl. in rate	\$1,148.20
Air Track Drill 4"	Active	1.00	1.0	20	20.00	E	\$160.98	incl. in rate	incl. in rate	\$3,219.60
				Labor Hours	120				TOTAL LABOR	\$7,637.52
			E	Equipment Hours	100			тс	TAL EQUIPMENT	\$14,168.78

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Blasting Explosives and Caps	10.00	EA	1.000	10.00	\$12.70	\$127.00

SURCONTRACT COSTS \$127.00

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount

TOTAL SUBCONTRACTS \$0.00

SUMMARY OF COSTS

Labor Cost 0.0% \$7,637.52 Material Cost \$0.00 \$127.00 Equipment Cost \$14,168.78 Equipment Tax @ 0.00% \$0.00 \$14,168.78 Subcontractors \$0.00 \$0.00 DIRECT COST SUBTOTALS \$21,933 \$0 DIRECT COST SUBTOTALS \$21,933 Additional Pay Item Notes :

Crew markup is based on blasting from the down stream side to avoid using divers due to the safety risk from the high flow.

1.004 Construct Embankment Cofferdam in Tailrace around Powerhouse ligh Cost Factors Low Cost Factors No Bad Weather Gas Price Decrease No Unforeseen Conta Gas Price Increase Unforeseen Contamin Hours 33 Haul Notes Excavator Loading Production per shift 2,000.00 CY per Hour 20% CY Bucket Size 35.17 Swell Factor 2400 Buckets Per Hour 10.2 # of Excavators 1 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift Bulk CY Haul Vehicle 85% Capacity (1.3 tons per CY) # of Haul Vehicles Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes) Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Haul Speed (Loaded MPH) 5 Efficient Compared to Ideal Production Return Speed (Unloaded MPH) Haul Distance (Miles) Shift Length (Hours) Cyce Time Load Time (Load Time Minutes / 60mins) Haul Time (Haul Distance / Haul Speed) Dump Time (Dump Time Minutes / 60 Mins) 0.08 0.05 0.08 Dump Time (bund Distance / Return Speed) Return Time (blaud Distance / Return Speed) Hours Per Cycle Efficiency Factor (Right Work, Traffic Retrictions, Coffee Breaks, ECT) Actual Hours Per Cycle (blows per Cycle / Efficiency Factor) Number of Cyclest glauk CY/ (Raud Vehicle Cap X of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X humber of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days cofferdam is expected to come from surrounding built up areas that were built up during the construction of the power house. This item is expected to be double shifted due to the Oregon in water wet work permit restrictions.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.005	Project : KRRP - JC Boyle			
Description	:	Remove Spillway Concrete	Group D07			
Quantity	1.005	2,100.00 CY				
Daily Production	1.005	300.00 CY per 20 hour shift	Project # : 1			
Work Days	1.005	7.0 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.005	\$73.34 per CY	Probable Low Cost Parameter	345.00	\$130,913	\$379.46
Total Cost	1.005	\$154,015	Probable High Cost Parameter	240.00	\$184,818	\$770.08

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	7.0	20	140.00	L	\$58.87	incl. in rate	incl. in rate	\$8,242.08
Laborer	Active	4.00	7.0	20	560.00	L	\$51.07	incl. in rate	incl. in rate	\$28,600.88
Equipment Operator (medium)	Active	2.00	7.0	20	280.00	L	\$72.34	incl. in rate	incl. in rate	\$20,254.08
Truck Driver (heavy)	Active	1.00	6.7	20	42.00	L	\$66.92	incl. in rate	incl. in rate	\$2,810.81
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	6.7	20	42.00	Е	\$117.28	incl. in rate	incl. in rate	\$4,925.76
Air Compressor 900 cfm	Active	1.00	7.0	20	140.00	Е	\$38.87	incl. in rate	incl. in rate	\$5,441.65
Air Tool, Chipping Hammer	Active	4.00	7.0	20	560.00	Е	\$1.64	incl. in rate	incl. in rate	\$917.86
Generator, Small Generator, 10 - 15 kW	Active	2.00	7.0	20	280.00	E	\$7.04	incl. in rate	incl. in rate	\$1,971.20
Hydraulic Excavator (2.5cy)	Active	2.00	7.0	20	280.00	E	\$205.40	incl. in rate	incl. in rate	\$57,512.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	7.0	20	140.00	E	\$63.28	incl. in rate	incl. in rate	\$8,859.20
Hydraulic Thumbs/Shear Attachment	Active	1.00	7.0	20	140.00	Е	\$24.92	incl. in rate	incl. in rate	\$3,488.80
				Labor Hours	1022	_			TOTAL LABOR	\$59,907.6
				Equipment Hours	1582			то	TAL EQUIPMENT	\$59,907 \$83.116

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
onsumables (10% labor)	1.00	LS	1.000	1.00	\$5,990.78	\$5,990.7
					TOTAL MA	TERIAL \$5,99

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1	AL	Allowance	\$5,000.00		\$5,000.00
					TOTAL SUBCONTRACTS	\$5,000,00

SUMMARY OF COSTS				
Labor Cost	\$59,907.85 Labor Burden @	0.0%		\$59,907.85
Material Cost	\$5,990.78 Material Tax @	0.00% \$0.00		\$5,990.78
Equipment Cost	\$83,116.47 Equipment Tax @	0.00% \$0.00		\$83,116.47
Subcontractors	\$5,000.00			\$5,000.00
DIRECT COST SUBTOTALS	\$154,015	\$0	DIRECT COST SUBTOTALS	\$154,015
Additional Pay Item Notes :				
See Details Page				
occ betains i age				

	1.005	5 Remove Spillway Concrete	
		Details	
ligh Cost Factors		Low Cost Factors	
3ad Weather	0% 10%		
Gas Price Increase Unforeseen Contaminated Mats/ Access Issues	10%		
Sinciposon Contaminated mater Access isolated	20%		
Production Per Hour Hou		Overall Production	
15	8		
	20	300	
Haul Notes		Excavator Loading Production per shift	
CY		CY per Hour	25.00
Swell Factor		CY Bucket Size	2.50
Bulk CY		Buckets Per Hour	10
Haul Vehicle 60% Capacity (2 tons per CY)		# of Excavators	1.00
# of Haul Vehicles	1	CY per Hour (2.5 CY Bucket)	25
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)	5	CY Per Hour Ideal Production Per 8 Hour Shift	95
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)	3	Efficient Compared to Ideal Production	26%
Haul Speed (Loaded MPH)	15	Inefficiencies Compared to Ideal Production	74%
Return Speed (Unloaded MPH)	20		
Haul Distance (Miles) Along Power Canal	3		
Shift Length (Hours)	20		
Cyce Time		Breaker Production per shift	
Load Time (Load Time Minutes / 60mins)	0.08	·	
Haul Time (Haul Distance / Haul Speed)		Hydraulic Hammer CY per Hour	15
Dump Time (Dump Time Minutes / 60 Mins)		# of Hammers	1.00
Return Time (Haul Distance / Return Speed)		CY per Hour	15
Hours Per Cycle		CY per Hour Back Check	15
Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		32CY per HR per 8hr shift (Ideal prod)	32
Actual Hours Per Cycle (Hours per Cycle / Efficcency Factor)		Efficient Compared to Ideal Production Inefficiencies Compared to Ideal Production	47% 53%
Fotal Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	134.4		33 /6
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)	2.08		
Number of Haul Days	6.72		
Speed Loaded			
Max Weight lbs of loaded 725	103,707.00		
Tons	52		
20lbs/Ton Rolling weigth Rolling Resitance (1% for each 20lbs/Ton)	3 3%		
Slope Grade	8%		
Total Resistance	11%		
Max Gear per CAT Chart	4		
Max MPH Speed Empty	15		
Speed Empty Max Weight lbs of Empty 725	50,795.00		
Tons Empty	25		
20lbo/Ten Delline malekt Francis			
20lbs/Ton Rolling weight Empty Rolling Resitance (1% per 20lbs/Ton) Empty	1 1%		
Average Slope Empty	8%		
Total Resistance Empty	9%		
Max Gear per CAT Chart Empty Max MPH Empty	6 20		

Other Notes

Due to the amount of reinforcement in the concrete it is expected that demolition production will be inefficient when compared to ideal productions. It is expected that hauling will occur at night only due to the small amount of demolished material. All work has been double shifted to account for the Oregon wet work permit restrictions. The existing haul route along the power canal will be used to haul material to the scour hole.

ΡΑΥ ΙΊ	TEM INFORMATION							
	PAY ITEM NUMBER	:	1.006	Project	: KRRP - JC Boyle			
	Description	:	Remove Monorail Structural Steel Components	Group	: D10			
	Quantity	:	15,000.00 LBS					
	Daily Production	:	23,125.00 LBS per 10 hour shift	Project #	: 1			
	Work Days	:	0.6 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
	Unit Price	:	\$0.38 per LBS	Probable Low C	ost Parameter	25,437.50	\$5,189	\$0.20
	Total Cost	:	\$5,765	Probable High C	ost Parameter	15,031.25	\$7,783	\$0.52

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.23
Laborer	Active	3.00	0.6	10	18.00	L	\$51.07	incl. in rate	incl. in rate	\$919.31
Steelworker	Active	2.00	0.6	10	12.00	L	\$78.10	incl. in rate	incl. in rate	\$937.20
Equipment Operator (crane)	Active	1.00	0.6	10	6.00	L	\$81.60	incl. in rate	incl. in rate	\$489.59
Equipment Operator (medium)	Active	1.00	0.6	10	6.00	L	\$72.34	incl. in rate	incl. in rate	\$434.02
Crawler Crane (130tn)	Active	1.00	0.6	10	6.00	E	\$262.91	incl. in rate	incl. in rate	\$1,577.46
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.6	10	6.00	E	\$63.11	incl. in rate	incl. in rate	\$378.66
Acetylene Torches	Active	2.00	0.6	10	12.00	Е	\$0.47	incl. in rate	incl. in rate	\$5.64
Acetylene Totches	Active	2.00	0.0	10	12.00	-	φυ. 4 7	III. III rate	IIICI. III Tate	\$5.04
				_		_			_	
				Labor Hours	48				TOTAL LABOR	\$3,133.35
				Equipment Hours	24				TOTAL EQUIPMENT	\$1,961.76

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 15% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$470.00		\$470.00
						TOTAL MATERIAL	2470.00

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
dauling Disposal Cost	1.00	Loads	20 tons a load			\$200.00	\$200
						TOTAL SUBCONTRAC	TS \$200
UMMARY OF COSTS							
abor Cost		abor Burden @		49.7% \$0.00			\$3,133
laterial Cost	\$470.00 N	Material Tax @		0.0% \$0.00			\$470
quipment Cost	\$1,961.76 E	quipment Tax @		0.0% \$0.00			\$1,96
ubcontractors	\$200.00						\$200
DIRECT COST SUBTOTALS	\$5,765			\$0		DIRECT COST SUBTOTA	LS \$5,:
dditional Pay Item Notes :							
dutional Fay item Notes .							

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.007	Project : KRRP - JC Boyle			
Description	:	Remove Fish Ladder Concrete	Group D07			
Quantity	1.007	1,820.00 CY				
Daily Production	1.007	140.00 CY per 10 hour shift	Project # : 1			
Work Days	1.007	13.0 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.007	\$93.59 per CY	Probable Low Cost Parameter	154.00	\$153,300	\$995.45
Total Cost	1.007	\$170,333	Probable High Cost Parameter	126.00	\$187,367	\$1,487.04

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	13.0	10	130.00	L	\$58.87	incl. in rate	incl. in rate	\$7,653.36
Laborer	Active	4.00	13.0	10	520.00	L	\$51.07	incl. in rate	incl. in rate	\$26,557.96
Equipment Operator (medium)	Active	2.00	13.0	10	260.00	L	\$72.34	incl. in rate	incl. in rate	\$18,807.36
Truck Driver (heavy)	Active	2.00	7.0	10	140.36	L	\$66.92	incl. in rate	incl. in rate	\$9,393.45
Air Compressor 600 cfm	Active	1.00	13.0	10	130.00	E	\$21.74	incl. in rate	incl. in rate	\$2,826.06
Air Compressor 900 cfm	Active	1.00	13.0	10	130.00	E	\$38.87	incl. in rate	incl. in rate	\$5,052.96
Air Tool, Chipping Hammer	Active	3.00	13.0	10	390.00	E	\$1.64	incl. in rate	incl. in rate	\$639.22
Generator, Small Generator, 10 - 15 kW	Active	2.00	13.0	10	260.00	E	\$7.04	incl. in rate	incl. in rate	\$1,830.40
Hydraulic Excavator (2.5cy)	Active	2.00	13.0	10	260.00	E	\$205.40	incl. in rate	incl. in rate	\$53,404.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	13.0	10	130.00	E	\$63.28	incl. in rate	incl. in rate	\$8,226.40
Hydraulic Thumbs/Shear Attachment	Active	1.00	13.0	10	130.00	E	\$24.92	incl. in rate	incl. in rate	\$3,239.60
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	7.0	10	140.36	E	\$117.28	incl. in rate	incl. in rate	\$16,461.42

Labor Hours	1050.36	TOTAL LABOR	\$62,412.13
Equipment Hours	1570.36	TOTAL EQUIPMENT	\$91,680.06

WATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (10% labor)	1.00	LS	1.000	1.00	\$6,241.21	\$6,241.21

TOTAL MATERIAL \$6,241.21

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	1 AL	Allowance	\$10,000.00	\$10,000.00

TOTAL SUBCONTRACTS \$10,000.00

SUMMARY OF COSTS			
Labor Cost	\$62,412.13 Labor Burden @	0.0%	
Material Cost	\$6,241.21 Material Tax @	0.00% \$0.00	
Equipment Cost	\$91,680.06 Equipment Tax @	0.00% \$0.00	
Subcontractors	\$10,000.00		
DIRECT COST SUBTOTALS	\$170,333	\$0	DIRECT COST SUBTOTALS
A LEW COLD BOOK NOW MAKES			

See Details Page

	Low Cost Factors No Bad Weather Gas Prico Decrease No Unforeseen Contaminated Mats/ Access Issues	20.69 2.50 8 1.00
5% 5% 10% Overall Production 8 8 10 Excavator Loading Production per shift CY per Hour 60% (CY Bucket Size 2212 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour (4eal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production	No Bad Weather Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues	2.50 8
5% 5% 10% Overall Production 8 8 10 Excavator Loading Production per shift CY per Hour 60% (CY Bucket Size 2212 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour (4eal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production	Gas Price Decrease No Unforeseen Contaminated Mats/ Access Issues	2.50 8
Overall Production 8	No Unforeseen Contaminated Mats/ Access Issues	2.50 8
Overall Production 8 Cxeavator Loading Production per shift 0.00 CY per Hour 60% CY Bucket Size 212 Buckets Per Hour 12 8 of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour (4eal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production	112.00	2.50 8
8 10 Excavator Loading Production per shift 100 CY per Hour 60% CY Bucket Size 2912 Buckets Per Hour 12 #0 Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
8 10 Excavator Loading Production per shift 100 CY per Hour 60% CY Bucket Size 2912 Buckets Per Hour 12 #0 Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
Excavator Loading Production per shift CY per Hour 60% CY Bucket Size 29212 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour (deal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
Excavator Loading Production per shift 0.00 CY per Hour 60% CY Bucket Size 2912 Buckets Per Hour 12 #0 Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
0.00 CY per Hour 60% CY Bucket Size 2921 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
60% CY Bucket Size 2912 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
60% CY Bucket Size 2912 Buckets Per Hour 12 # of Excavators 2 CY per Hour (2.5 CY Bucket) 5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		2.50 8
12 # of Excavators 2 CV per Hour (2.5 CY Bucket) 5 CV Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		
12 # of Excavators 2 CV per Hour (2.5 CY Bucket) 5 CV Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		
5 CY Per Hour Ideal Production Per 8 Hour Shift 3 Efficient Compared to Ideal Production		
3 Efficient Compared to Ideal Production		20.68965517
3 Efficient Compared to Ideal Production		95
The state of the s		22%
		78%
20		
2.58		
10		
Breaker Production		
0.08 Hydraulic Hammer CY per Hour		14
0.26 # of Hammers		1.00
0.05 CY per Hour		14
		14
		32
90% Efficient Compared to Ideal Production		44%
0.58 Inefficiencies Compared to Ideal Production		56%
1.72		
.018		
7.00		
52		
2%		
5.00		
25		
1		
3%		
5		
20		
	Breaker Production 1.08 Hydraulic Hammer CY per Hour 1.08 of of Hammers 1.05 CY per Hour 1.13 CY per Hour Back Check 1.52 32CY per HR per 8hr shift (Ideal prod) 1.09 inficiencies Compared to Ideal Production 1.21 1.12 1.18 1.72 1.18 1.70 1	Breaker Production Job Hydraulic Hammer CY per Hour Job S of Hammers Job CY per Hour Job S OF Der Hour Job S Jack Check Job S Jack C

Other Notes
It is expected that trucks will haul material half of the demolition duration to achieve better hauling productions. It is expected that 1 of the excavators will be used half of the time to load the trucks.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.008	Project : KRRP - JC Boyle			
Description	:	Remove Gravity Dam Section Concrete	Group D07			
Quantity	1.008	600.00 CY				
Daily Production	1.008	260.00 CY per 20 hour shift	Project # : 1			
Work Days	1.008	2.3 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.008	\$95.09 per CY	Probable Low Cost Parameter	299.00	\$48,497	\$162.20
Total Cost	1.008	\$57,056	Probable High Cost Parameter	208.00	\$68,467	\$329.17

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.3	20	46.00	L	\$58.87	incl. in rate	incl. in rate	\$2,708.11
Laborer	Active	2.00	2.3	20	92.00	L	\$51.07	incl. in rate	incl. in rate	\$4,698.72
Equipment Operator (medium)	Active	2.00	2.3	20	92.00	L	\$72.34	incl. in rate	incl. in rate	\$6,654.91
Truck Driver (heavy)	Active	1.00	2.2	20	43.20	L	\$66.92	incl. in rate	incl. in rate	\$2,891.12
Air Compressor 600 cfm	Active	1.00	2.3	20	46.00	E	\$21.74	incl. in rate	incl. in rate	\$999.99
Air Compressor 900 cfm	Active	1.00	2.3	20	46.00	E	\$38.87	incl. in rate	incl. in rate	\$1,787.97
Air Tool, Chipping Hammer	Active	2.00	2.3	20	92.00	E	\$1.64	incl. in rate	incl. in rate	\$150.79
Generator, Small Generator, 10 - 15 kW	Active	1.00	2.3	20	46.00	E	\$7.04	incl. in rate	incl. in rate	\$323.84
Hydraulic Excavator (2.5cy)	Active	1.00	2.3	20	46.00	E	\$205.40	incl. in rate	incl. in rate	\$9,448.40
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.3	20	46.00	E	\$63.28	incl. in rate	incl. in rate	\$2,910.88
Hydraulic Excavator (5.0cy)	Active	1.00	2.3	20	46.00	E	\$276.50	incl. in rate	incl. in rate	\$12,719.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	2.2	20	43.20	Е	\$117.28	incl. in rate	incl. in rate	\$5,066.50

Labor Hours	273.2	TOTAL LABOR	\$16,952.86
Equipment Hours	411.2	TOTAL EQUIPMENT	\$33,407.37

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
Consumables (10% labor)	1.00	LS	1.000	1.00	\$1,695.29	\$1,695.29

TOTAL MATERIAL \$1,695.29

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1 /	AL	Allawance	\$5,000.00		\$5,000.00
						\$0.00
						\$0.00
					_	\$0.00
					TOTAL SUBCONTRACTS	\$5,000.00

SUMMARY OF COSTS				
Labor Cost	\$16,952.86 Labor Burden @	0.0%		\$16,952.86
Material Cost	\$1,695.29 Material Tax @	0.00% \$0.00		\$1,695.29
Equipment Cost	\$33,407.37 Equipment Tax @	0.00% \$0.00		\$33,407.37
Subcontractors	\$5,000.00			\$5,000.00
DIRECT COST SUBTOTALS	\$57,056	\$0	DIRECT COST SUBTOTALS	\$57,056
Additional Pay Item Notes :				<u>-</u>
See Details Page				
SSS SSIEST AUGS				

	1.008 Remove Gravity Dam Section Con Details	crete	
High Cost Factors		Low Cost Factors	
Bad Weather Gas Price Increase	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Issues	5%
	20%		15%

	Overall Production	tion Per Hour Hours
	104.00 260.00	13 i
	260.00	20
	Excavator Loading Production per shift	otes
44.44	CY per Hour	
2.50	CY Bucket Size	
9	Buckets Per Hour	960
0.50	# of Excavators	ehicle 60% Capacity (2 tons per CY)
44	CY per Hour (2.5 CY Bucket)	ul Vehicles
95	CY Per Hour Ideal Production Per 8 Hour Shift	ime (Includes Spot Time, Maneuver Time, & Loading) (Minutes)
47%	Efficient Compared to Ideal Production	Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)
53%	Inefficiencies Compared to Ideal Production	
5578	memorates compared to total richards	Speed (Unloaded MPH) 2i
		stance (Miles) Along Power Canal 2.50
		ength (Hours)
	Breaker Production	ime
13	Hydraulic Hammer CY per Hour	ime (Load Time Minutes / 60mins)
1.00	# of Hammers	me (Haul Distance / Haul Speed) 0.1
13	CY per Hour	Firme (Dump Time Minutes / 60 Mins) 0.05
13	CY per Hour Back Check	Time (Haul Distance / Return Speed) 0.13
32	32CY per HR per 8hr shift (Ideal prod)	Per Cycle 0.4
41%	Efficient Compared to Ideal Production	tcy Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)
59%	Inefficiencies Compared to Ideal Production	
		r of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)
		umber of Haul Hours (Actual Cycle Hours X Number of Cycles) Per Hour (Number of Cycles / Total Number of Haul Hours) 1.88
		r of Haul Days 2.10
		2
		Loaded
		Max Weight lbs of loaded 725 103,707.00 Tons 52
		20lbs/Ton Rolling weigth 3
		Rolling Resitance (1% for each 20lbs/Ton) 39
		Average Slope 29
		Total Resistance 5%
		Max Gear per CAT Chart
		Max MPH 19
		Max Weight lbs of Empty 725 50,795.00
		Tons Empty 25
		20lbs/Ton Rolling weight Empty 1
		Rolling Resitance (1% per 20lbs/Ton) Empty 19 Average Slope Empty 29
		Average Slope Empty 27 Total Resistance Empty 39
		Max Gear per CAT Chart Empty
		Max MPH Empty 20

Other Notes The product

ner the production on the breaker is reduced due to the amount of reinforecement in the concrete. Excavator's loading production is low due to This item will be double shifted because it is considered as in channel work and has a restricted window due to the Oregon in water work per

TOTAL MATERIAL

\$338.36

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.009	Project	: KRRP - JC Boyle			
Description	:	Remove Timber Equipment Ramp on left side of Dam	Group	: D10			
Quantity	:	10,500.00 LBS					
Daily Production	:	18,750.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	0.6 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.38 per LBS	Probable Low C	Cost Parameter	21,562.50	\$3,391	\$0.16
Total Cost	:	\$3.990	Probable High (Cost Parameter	12.187.50	\$5.386	\$0.44

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.23
Electrician	Active	1.00	0.6	10	6.00	L	\$55.80	incl. in rate	incl. in rate	\$334.82
Carpenters, Journeyman	Active	1.00	0.6	10	6.00	L	\$77.54	incl. in rate	incl. in rate	\$465.23
Laborer	Active	2.00	0.6	10	12.00	L	\$51.07	incl. in rate	incl. in rate	\$612.88
Hydraulic Crane (50tn)	Active	1.00	0.6	10	6.00	E	\$136.20	incl. in rate	incl. in rate	\$817.20
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.6	10	6.00	E	\$63.11	incl. in rate	incl. in rate	\$378.66
Equipment Operator (crane)	Active	1.00	0.6	10	6.00	L	\$81.60	incl. in rate	incl. in rate	\$489.59
				Labor Hours	36				TOTAL LABOR	\$2,255.75
				Equipment Hours	12				TOTAL EQUIPMENT	\$1,195.86

MATERIAL COSTS												
	Description	Item	Order	Conversion	Order	Order	Material					
		Quantity	Unit	Factor / Waste	Quantity	Price	Cost					
	Consumables 15% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$338.36	\$338.36					

SUBCONTRACT COSTS Quantity Unit Price Contract or Quote Amount Units Notes / Description Hauling Disposal Cost 1.00 Loads 20 tons a load \$200.00 TOTAL SUBCONTRACTS \$200.00 SUMMARY OF COSTS Labor Cost Material Cost Equipment Cost Subcontractors \$2,255.75 Labor Burden @ \$338.36 Material Tax @ \$1,195.86 Equipment Tax @ \$200.00 49.7% \$0.00 \$2,255.75 \$1,195.86 \$200.00 0.0% \$0.00 DIRECT COST SUBTOTALS \$3,990 \$0 DIRECT COST SUBTOTALS \$3,990 Additional Pay Item Notes :

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.01	Project	: KRRP - JC Boyle			
Description	:	Remove Pressure-Treated Lumber from Footbridge around Intake	Group	: D10			
Quantity	1.010	3,600.00 SF					
Daily Production	1.01	1,800.00 SF per 20 hour shift	Project #	: 1			
Work Days	1.01	2.0 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.01	\$5.63 per SF	Probable Low C	ost Parameter	1,980.00	\$18,253	\$9.22
Total Cost	1.01	\$20,282	Probable High C	Cost Parameter	1,530.00	\$23,324	\$15.24

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Description	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Crane (50tn)	Active	1.00	2.0	20	40.00	E	\$136.20	incl. in rate	incl. in rate	\$5,448.00
Labor Foreman	Active	1.00	2.0	20	40.00	L	\$58.87	incl. in rate	incl. in rate	\$2,354.88
Laborer	Active	1.00	2.0	20	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.92
Equipment Operator (crane)	Active	3.00	2.0	20	120.00	L	\$81.60	incl. in rate	incl. in rate	\$9,791.76
				Labor Hours	200				TOTAL LABOR	\$14,189.56
				Equipment Hours	40			Tr	TAL EQUIPMENT	\$5,448.00

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
	10 CY				
Conversion CY to Tons (2 tons per CY)	6.00 tons	Klamath County LandFill	\$74.00		\$444.00
Hauling cost to landfill	1.00 Loads	18 CY per load	\$200.00		\$200.00
Weight per SF of 2x10					
				TOTAL SUBCONTRACTS	\$644.00

			TOTAL SUBCONTRACTS	\$644.0
UMMARY OF COSTS				
_abor Cost	\$14,189.56 Labor Burden @	0.0%		\$14,189.
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.
quipment Cost	\$5,448.00 Equipment Tax @	0.00% \$0.00		\$5,448.
Subcontractors	\$644.00			\$644.
RECT COST SUBTOTALS	\$20,282	\$0	DIRECT COST SUBTOTALS	\$20,2
ditional Pay Item Notes :				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.011	Project : KRRP - JC I	Boyle		
Description	:	Remove Storage Shed located on access road	Group : D10			
Quantity	1.011	4,480.00 SF				
Daily Production	1.011	1,125.00 SF per 10 hour shift	Project # : 1			
Work Days	1.011	4.0 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.011	\$13.76 per SF	Probable Low Cost Parameter	1,181.25	\$58,562	\$49.58
Total Cost	1.011	\$61,644	Probable High Cost Parameter	1,012.50	\$67,808	\$66.97

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.0	10	40.00	L	\$58.87	incl. in rate	incl. in rate	\$2,354.8
Laborer	Active	4.00	4.0	10	160.00	L	\$51.07	incl. in rate	incl. in rate	\$8,171.6
Equipment Operator (medium)	Active	2.00	4.0	10	80.00	L	\$72.34	incl. in rate	incl. in rate	\$5,786.8
Hydraulic Excavator (5.0cy)	Active	1.00	4.0	10	40.00	Е	\$276.50	incl. in rate	incl. in rate	\$11,060.0
Loader, FE Rubber Tire (3.5cy)	Active	1.00	4.0	10	40.00	E	\$63.11	incl. in rate	incl. in rate	\$2,524.4
				Labor Hours	280				TOTAL LABOR	\$16,313.

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL \$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	657 CY				
Conversion CY to Tons (2 tons per CY)	329.00 tons	Klamath County LandFill	\$74.00		\$24,346.00
Hauling cost to landfill	37.00 Loads	18 CY per load	\$200.00		\$7,400.00
				TOTAL SUBCONTRACTS	\$31,746.00

			TOTAL SOBCONTRACTS	\$31,740.00
SUMMARY OF COSTS				
Labor Cost	\$16,313.44 Labor Burden @	0.0%		\$16,313.4
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.0
Equipment Cost	\$13,584.40 Equipment Tax @	0.00% \$0.00		\$13,584.4
Subcontractors	\$31,746.00			\$31,746.0
DIRECT COST SUBTOTALS	\$61,644	\$0	DIRECT COST SUBTOTALS	\$61,64
Additional Pay Item Notes :				
				ĺ
				i i
Storage Shed will be demolished wit	th excavators and material will be bauled to Klamath	County Landfill		i .

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.012	Project : KRRP - JC Bo	yle		
		Remove Warehouse, North Residence, and South Residence	Near			
Description	:	Dam Access Road	Group : D10			
Quantity	1.012	8,965.00 SF				
Daily Production	1.012	900.00 SF per 10 hour shift	Project # : 1			
Work Days	1.012	10.0 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.012	\$15.42 per SF	Probable Low Cost Parameter	945.00	\$131,325	\$138.97
Total Cost	1.012	\$138,237	Probable High Cost Parameter	810.00	\$152,060	\$187.73

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	10.0	10	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.20
Laborer	Active	4.00	10.0	10	400.00	L	\$51.07	incl. in rate	incl. in rate	\$20,429.20
Equipment Operator (medium)	Active	2.00	10.0	10	200.00	L	\$72.34	incl. in rate	incl. in rate	\$14,467.20
Hydraulic Excavator (5.0cy)	Active	1.00	10.0	10	100.00	E	\$276.50	incl. in rate	incl. in rate	\$27,650.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	10.0	10	100.00	E	\$63.11	incl. in rate	incl. in rate	\$6,311.00
				Labor Hours	700				TOTAL LABOR	\$40,783.60
				Equipment Hours	200			т	OTAL EQUIPMENT	\$33,961.00

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
					TOT	AL MATERIAL	\$

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	1,315 CY				
Conversion CY to Tons (2 tons per CY)	658.00 tons	Klamath County LandFill	\$74.00		\$48,692.00
Hauling cost to landfill	74.00 Loads	18 CY per load	\$200.00		\$14,800.00
				TOTAL SUBCONTRACTS	\$63,492.00

Labor Cost	\$40,783.60 Labor Burden @	0.0%	\$40,						
Material Cost	\$0.00 Material Tax @	0.00% \$0.00	<u> </u>						
Equipment Cost	\$33,961.00 Equipment Tax @	0.00% \$0.00	\$33,						
Subcontractors	\$63,492.00		\$63,						
IRECT COST SUBTOTALS	\$138,237	\$0	DIRECT COST SUBTOTALS \$1						
Additional Pay Item Notes :									
Demolition is to be done using excavators and a loader. Building Demolition will be hauled to Klamath County landfill									
Demolition is to be done using ever	waters and a leader Building Demolition will be bauled to Klamat	h County landfill							

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.013	Project	: KRRP - JC Boyl	e		
Description	:	Remove Fire System Control Bldg. on left abutm	ent Group	: D10			
Quantity	1.013	520.00 SF					
Daily Production	1.013	1,125.00 SF per 10 hour shift	Project #	: 1			
Work Days	1.013	0.5 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.013	\$14.66 per SF	Probable Low	Cost Parameter	1,181.25	\$7,242	\$6.13
Total Cost	1.013	\$7,623	Probable High	Cost Parameter	1,012.50	\$8,386	\$8.28

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.36
Laborer	Active	4.00	0.5	10	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.46
Equipment Operator (medium)	Active	2.00	0.5	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Hydraulic Excavator (5.0cy)	Active	1.00	0.5	10	5.00	E	\$276.50	incl. in rate	incl. in rate	\$1,382.50
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	10	5.00	Е	\$63.11	incl. in rate	incl. in rate	\$315.55
				Labor Hours	35				TOTAL LABOR	\$2,039.18

Description	Item	Order	Conversion	Order	Order	Mater
	Quantity	Unit	Factor / Waste	Quantity	Price	Cos

Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	76 CY				
Conversion CY to Tons (2 tons per CY)	39.00 tons	Klamath County LandFill	\$74.00		\$2,886.00
Hauling cost to landfill	5.00 Loads	18 CY per load	\$200.00		\$1,000.00
				TOTAL SUBCONTRACTS	\$3,886.00

Labor Cost Material Cost	\$2,039.18 Labor Burden @ \$0.00 Material Tax @	0.0% 0.00% \$0.00		\$2,039.1 \$0.0
Equipment Cost	\$1,698.05 Equipment Tax @	0.00% \$0.00		\$1,698.0
Subcontractors	\$3,886.00			\$3,886.0
DIRECT COST SUBTOTALS	\$7,623	\$0	DIRECT COST SUBTOTALS	\$7,62
Additional Pay Item Notes :				
·				
,				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.014	Project : KRRP	- JC Boyle		
Description	:	Remove Dam Communication Bldg. on left abutn	ent Group : D10			
Quantity	1.014	490.00 SF				
Daily Production	1.014	1,125.00 SF per 10 hour shift	Project # : 1			
Work Days	1.014	0.4 Days	Estimator : Eric Jo	ones SF per	Total Cost	Unit Price Per SF
Unit Price	1.014	\$13.17 per SF	Probable Low Cost Parame	eter 1,181.25	\$6,131	\$5.19
Total Cost	1.014	\$6.454	Probable High Cost Parame	eter 1.012.50	\$7.099	\$7.01

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	4.00	0.4	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Hydraulic Excavator (5.0cy)	Active	1.00	0.4	10	4.00	E	\$276.50	incl. in rate	incl. in rate	\$1,106.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.44
				Labor Hours	28	1			TOTAL LABOR	\$1,631.34
				Equipment Hours	8			TC	TAL EQUIPMENT	\$1,358.44

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.0

SUBCONTRACT COSTS Description	Quantity Units	Notes /	Unit	Contract or Quote
·	· ·	Company	Price	Amount
Dump Fee Coversion (SFXH*.33/27)	72 CY			
Conversion CY to Tons (2 tons per CY)	36.00 tons	Klamath County LandFill	\$74.00	\$2,664.00
Hauling cost to landfill	4.00 Loads	18 CY per load	\$200.00	\$800.00
				TOTAL SUBCONTRACTS \$3,464.00

SUMMARY OF COSTS				
Labor Cost	\$1,631.34 Labor Burden @	0.0%		\$1,631.34
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$1,358.44 Equipment Tax @	0.00% \$0.00		\$1,358.44
Subcontractors	\$3,464.00			\$3,464.00
DIRECT COST SUBTOTALS	\$6,454	\$0	DIRECT COST SUBTOTALS	\$6,454
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.015		Project	: KRRP - JC Boyle)		
Description	:	Remove Concrete Slab on left abutm Control House	nent for former	Group	: D10			
Quantity	1.015	6.00 CY						
Daily Production	1.015	15.00 CY per 10	hour shift	Project #	: 1			
Work Days	1.015	0.4 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.015	\$697.54 per CY		Probable Low Cost	Parameter	16.50	\$3,767	\$228.28
Total Cost	1.015	\$4,185		Probable High Cost	t Parameter	12.75	\$4,813	\$377.49

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman (out)	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$66.92	incl. in rate	incl. in rate	\$267.70
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Hydraulic Excavator (5.0cy)	Active	2.00	0.4	10	8.00	E	\$276.50	incl. in rate	incl. in rate	\$2,212.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.4	10	4.00	E	\$57.41	incl. in rate	incl. in rate	\$229.64
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	0.4	10	4.00	Е	\$63.28	incl. in rate	incl. in rate	\$253.12
				Labor Hours	24				TOTAL LABOR	\$1.400.4
										\$1,490.4
			Equ	ipment Hours	16			TO	TAL EQUIPMENT	\$2,694.7

Description	Item	Order	Conversion	Order	Order	Mate	erial
	Quantity	Unit	Factor / Waste	Quantity	Price	Co	ost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

Material Cost \$0.00 Material Tax @ 0.00% \$0.00 Equipment Cost \$2,694.76 Equipment Tax @ 0.00% \$0.00	\$0.00
\$2.694.76 Equipment Tax @ 0.00% \$0.00	
Ψ2,004.70 Equipment Tax (9) 0.0070 ψ0.00	\$2,694.76
Subcontractors \$0.00	\$0.00
DIRECT COST SUBTOTALS \$4,185 \$0	DIRECT COST SUBTOTALS \$4,185
Additional Pay Item Notes :	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.016	Project	: KRRP - JC Boyle	9		
		Remove 4'x5' Metal Hatch on top of Concrete Pul					
Description	:	on left abutment	Group	: D10			
Quantity	1.016	1.00 CY					
Daily Production	1.016	3.75 CY per 10 hour shift	Project #	: 1			
Work Days	1.016	0.3 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.016	\$1,749.35 per CY	Probable Low Cos	st Parameter	4.13	\$1,574	\$381.68
Total Cost	1.016	\$1,749	Probable High Co	st Parameter	3.38	\$1,924	\$570.16

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.62
Laborer	Active	1.00	0.3	10	3.00	L	\$51.07	incl. in rate	incl. in rate	\$153.22
Truck Driver (heavy)	Active	1.00	0.3	10	3.00	L	\$66.92	incl. in rate	incl. in rate	\$200.77
Equipment Operator (medium)	Active	1.00	0.3	10	3.00	L	\$72.34	incl. in rate	incl. in rate	\$217.01
Hydraulic Excavator (5.0cy)	Active	1.00	0.3	10	3.00	E	\$276.50	incl. in rate	incl. in rate	\$829.50
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.3	10	3.00	Е	\$57.41	incl. in rate	incl. in rate	\$172.23
				Labor Hours	12				TOTAL LABOR	\$747.62
			Eq	uipment Hours	6			то	TAL EQUIPMENT	\$1,001.73

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
				-			
						TOTAL MATERIAL	\$0.00

SUE	CONTRACT COSTS						
	Description	Quantity	Units	Notes /	Unit		Contract or Quote
				Company	Price		Amount
						TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$747.62	Labor Burden @	0.0%			\$747.6
Material Cost	\$0.00	Material Tax @	0.00%	\$0.00		\$0.0
Equipment Cost	\$1,001.73	Equipment Tax @	0.00%	\$0.00		\$1,001.7
Subcontractors	\$0.00					\$0.0
DIRECT COST SUBTOTALS	\$1,749			\$0	DIRECT COST SUBTOTALS	\$1,74
Additional Pay Item Notes :						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.017	Project : KRRP - JC Boy	le		
Description	:	Remove Reservoir Level Gauge House on Dam Crest	Group : D10			
Quantity	1.017	24.00 SF				
Daily Production	1.017	60.00 SF per 10 hour shift	Project # : 1			
Work Days	1.017	0.4 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.017	\$139.07 per SF	Probable Low Cost Parameter	63.00	\$3,171	\$50.33
Total Cost	1.017	\$3,338	Probable High Cost Parameter	54.00	\$3,672	\$67.99

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	4.00	0.4	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Equipment Operator (medium)	Active	2.00	0.4	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Hydraulic Excavator (5.0cy)	Active	1.00	0.4	10	4.00	E	\$276.50	incl. in rate	incl. in rate	\$1,106.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	Е	\$63.11	incl. in rate	incl. in rate	\$252.44
				Labor Hours	28				TOTAL LABOR	\$1,631.34
				Equipment Hours	8			TC	TAL EQUIPMENT	\$1,358.44

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL

Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	4 CY				
Conversion CY to Tons (2 tons per CY)	2.00 tons	Klamath County LandFill	\$74.00		\$148.00
Hauling cost to landfill	1.00 Loads	18 CY per load	\$200.00		\$200.00
				TOTAL SUBCONTRACTS	\$348.00

SUMMARY OF COSTS						
Labor Cost	\$1,631.34	Labor Burden @	0.0%			\$1,631.34
Material Cost	\$0.00	Material Tax @	0.00%	\$0.00		\$0.00
Equipment Cost	\$1,358.44	Equipment Tax @	0.00%	\$0.00		\$1,358.44
Subcontractors	\$348.00					\$348.00
DIRECT COST SUBTOTALS	\$3,338			\$0	DIRECT COST SUBTOTALS	\$3,338
Additional Pay Item Notes :						

Operation will take 1/2 of a day to complete including mobilizing to area, excavator will be used to demolish and load material, truck will haul off material, to dump location, laborer to support equipment and truck coordination, foreman to oversee operation.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.018	Project : KRRP - JC Boyle			
Description	:	Downstream Riprap	Group : D08			
Quantity	1.018	2,200.00 CY	_			
Daily Production	1.018	525.00 CY per 10 hour shift	Project # : 1			
Work Days	1.018	4.2 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.018	\$14.05 per CY	Probable Low Cost Parameter	577.50	\$27,818	\$48.17
Total Cost	1.018	\$30,909	Probable High Cost Parameter	472.50	\$33,999	\$71.96

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	4.2	10	42.00	Е	\$276.50	incl. in rate	incl. in rate	\$11,613.00
Equipment Operator (medium)	Active	1.00	4.2	10	42.00	L	\$72.34	incl. in rate	incl. in rate	\$3,038.11
Truck Driver (heavy)	Active	1.00	3.9	10	38.85	L	\$66.92	incl. in rate	incl. in rate	\$2,600.00
Labor Foreman	Active	1.00	4.2	10	42.00	L	\$58.87	incl. in rate	incl. in rate	\$2,472.62
Laborer	Active	2.00	4.2	10	84.00	L	\$51.07	incl. in rate	incl. in rate	\$4,290.13
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	3.9	10	38.85	E	\$177.47	incl. in rate	incl. in rate	\$6,894.71
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	3.9	10	38.85	E	\$177.47	incl. in rate	incl. in rate	\$6,894.71
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	3.9	10	38.85	E	\$177.47	incl. in rate	incl. in rate	\$6,894.71 \$12,400.87

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
	Quantity	Oint	ractor/ waste	quantity	Trice		COSt
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
		•			TOTAL SUBCONTRACTS	\$0.00

			·
Labor Cost	\$12,400.87 Labor Burden @	0.0%	\$12,400
Material Cost	\$0.00 Material Tax @	0.00% \$0.00	\$0
Equipment Cost	\$18,507.71 Equipment Tax @	0.00% \$0.00	\$18,507
Subcontractors	\$0.00		\$0
IRECT COST SUBTOTALS	\$30,909	\$0	DIRECT COST SUBTOTALS \$30,
dditional Pay Item Notes :			
0 - 1	Local III .		
See Additional production notes for	breakdown.		

		1.018 Downstream Riprap Details		
High Cost Factors		Dotailo	Low Cost Factors	
Bad Weather			No Bad Weather	0%
Gas Price Increase	10	6 /a	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues		6	No Unforeseen Contaminated Mats/ Access Issues	0% 10%
	10	<u>6</u>		10%
Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
Production Fet Hous	75	8	70%	420
		0	70%	525
Haul Notes		Excavator Loading Production per shift		<u></u>
CY		CY per Hour		74
Swell Factor		6 CY Bucket Size		5.00
Bulk CY		Buckets Per Hour		15
Haul Vehicle 85% Capacity (1.3 tons per CY)	27	2 # of Excavators		1.00
# of Haul Vehicles		1 CY per Hour (5 CY Bucket)		74
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		5 CY Per Hour Ideal Production Per 8 Hour Shift		160
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		4 Efficient Compared to Ideal Production		46%
Haul Speed (Loaded MPH)		9 Inefficiencies Compared to Ideal Production		54%
Return Speed (Unloaded MPH)		0		
Haul Distance (Miles)	0.			
Shift Length (Hours)		0		
Cyce Time				
Load Time (Load Time Minutes / 60mins) Haul Time (Haul Distance / Haul Speed)	0.			
	0.			
Dump Time (Dump Time Minutes / 60 Mins)	0.			
Return Time (Haul Distance / Return Speed)	0.			
Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)	0.	6		
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	0.	7		
Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	1	5		
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	38.	5		
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days	2.			
Number of fluid buys	· ·			
Speed Loaded	Max Weight lbs of loaded 745 164,500.0			
	Tons 82.2			
	20lbs/Ton Rolling weigth			
	Rolling Resitance (1% for each 20lbs/Ton) Slope Grade			
	Total Resistance 12	6		
	Max Gear per CAT Chart	4		
Speed Empty	Max MPH 8	8		
	Max Weight lbs of Empty 745 74,100.0			
	Tons 37.0			
	20lbs/Ton Rolling weigth			
	Rolling Resitance (1% for each 20lbs/Ton)	6		
	Slope Grade 8 Total Resistance 10	6		
	Max Gear per CAT Chart	5		
	Max MPH	o <mark>l</mark>		
Other Notes				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.019	Project	: KRRP - JC Boyle)			
Description	:	Upstream Riprap	Group	: D08				
Quantity	1.019	1,300.00 CY						
Daily Production	1.019	525.00 CY per	10 hour shift	Project #	: 1			
Work Days	1.019	2.5 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.019	\$16.80 per CY		Probable Low (Cost Parameter	577.50	\$19,653	\$34.03
Total Cost	1.019	\$21,837		Probable High	Cost Parameter	472.50	\$24,020	\$50.84

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	2.5	10	25.00	Е	\$276.50	incl. in rate	incl. in rate	\$6,912.
Equipment Operator (medium)	Active	1.00	2.5	10	25.00	L	\$72.34	incl. in rate	incl. in rate	\$1,808
Labor Foreman	Active	1.00	2.5	10	25.00	L	\$58.87	incl. in rate	incl. in rate	\$1,471
Laborer	Active	2.00	2.5	10	50.00	L	\$51.07	incl. in rate	incl. in rate	\$2,553
Truck Driver (heavy)	Active	3.00	2.5	10	75.00	L	\$66.92	incl. in rate	incl. in rate	\$5,019.
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.3	10	22.94	Е	\$177.47	incl. in rate	incl. in rate	\$4,071
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.3	10	22.94	E	\$177.47	incl. in rate	incl. in rate	\$4,071
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	2.3	10	22.94	E	\$177.47	incl. in rate	TOTAL LABOR	\$4,07 ² \$10,853

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
					-	TOTAL MATERIAL	\$

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

OUR ARY OF COOTS							
SUMMARY OF COSTS	#10.050.45	Late Davids 6	0.007			040.050.45	
Labor Cost		Labor Burden @	0.0%			\$10,853.15	
Material Cost	\$0.00	Material Tax @	0.00%	\$0.00		\$0.00	
Equipment Cost	\$10,983.66	Equipment Tax @	0.00%	\$0.00		\$10,983.66	
Subcontractors	\$0.00					\$0.00	
DIRECT COST SUBTOTALS	\$21,837			\$0	DIRECT COST SUBTOTALS	\$21,837	
Additional Pay Item Notes :							
						i	
Based on using 2 excavators loading 5 trucks each truck is expected to get 10 loads a day,							

			1.019 Upstream Riprap		
			Details		
High Cost Factors			Low	Cost Factors	
Bad Weather		0%			0%
Bad Weather Gas Price Increase		10%		Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues		0%	No Ui	Inforeseen Contaminated Mats/ Access Issues	0%
		10%			10%
Production Per Hour	He	ours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) Over	rall Production	
	75	10		420 525	
		10	70%	525	
Haul Notes			Excavator Loading Production per shift		
CY		1.300.00	CY per Hour	74	
Swell Factor			CY Bucket Size	5.00	
Bulk CY			Buckets Per Hour	15	
Haul Vehicle 85% Capacity (1.3 tons per CY)			# of Excavators	1.00	
of Haul Vehicles			CY per Hour (5 CY Bucket)	74	
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)			CY Per Hour Ideal Production Per 8 Hour Shift	160	
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes) Haul Speed (Loaded MPH)			Efficient Compared to Ideal Production	46% 54%	
Return Speed (Unloaded MPH)		10	Inefficiencies Compared to Ideal Production	34%	
Haul Distance (Miles)		0.50			
Shift Length (Hours)		10			
Cyce Time					
Load Time (Load Time Minutes / 60mins)		0.08			
Haul Time (Haul Distance / Haul Speed)		0.06			
Dump Time (Dump Time Minutes / 60 Mins)		0.07			
Return Time (Haul Distance / Return Speed)		0.05			
Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		0.26 70%			
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)		0.37			
Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)		62 22.94			
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)		2.70			
Number of Haul Days		2.3			
Speed Loaded	Max Weight lbs of loaded 745	164,500.00			
	Tons	82.25			
	20lbs/Ton Rolling weigth Rolling Resitance (1% for each 20lbs/Ton)	4%			
	Slope Grade	4% 8% 12%			
	Total Resistance	12%			
	Max Gear per CAT Chart Max MPH	8.8			
Speed Empty					
	Max Weight lbs of Empty 745 Tons Empty	74,100.00 37.05			
	20lbs/Ton Rolling weight Empty	2			
	Rolling Resitance (1% per 20lbs/Ton) Empty	2%			
	Average Slope Empty	89/			
	Total Resistance Empty Max Gear per CAT Chart Empty	10% 5			
	Max MPH Empty	10			

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.020	Project : KRRP - JC Boyle			
Description	:	Miscellaneous Excavation (Dam Earth Section)	Group D08			
Quantity	1.020	132,500.00 CY				
Daily Production	1.02	2,800.00 CY per 10 hour shift	Project # : 1			
Work Days	1.02	47.3 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.02	\$7.11 per CY	Probable Low Cost Parameter	3,080.00	\$847,892	\$275.29
Total Cost	1.02	\$942,102	Probable High Cost Parameter	2,240.00	\$1,130,522	\$504.70

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	47.3	10	473.00	E	\$276.50	incl. in rate	incl. in rate	\$130,784.50
Loader, FE Rubber Tire (5.25cy)	Active	2.00	47.3	10	946.00	E	\$76.00	incl. in rate	incl. in rate	\$71,896.00
Equipment Operator (medium)	Active	4.00	47.3	10	1,892.00	L	\$72.34	incl. in rate	incl. in rate	\$136,859.71
Truck Driver (heavy)	Active	5.00	43.1	10	2,153.90	L	\$66.92	incl. in rate	incl. in rate	\$144,147.60
Laborer	Active	2.00	47.3	10	946.00	L	\$51.07	incl. in rate	incl. in rate	\$48,315.06
Labor Foreman	Active	1.00	47.3	10	473.00	L	\$58.87	incl. in rate	incl. in rate	\$27,846.46
CAT 745 (32 CY) OFF ROAD TRUCK	Active	5.00	43.1	10	2,153.90	E	\$177.47			\$382,252.60
				Labor Hours	5464.9				TOTAL LABOR	\$357,168.83

Description	Item	Order	Conversion	Order	Order	•	Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					_	
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS			
Labor Cost	\$357,168.83 Labor Burden @	0.0%	\$357,168.83
Material Cost	\$0.00 Material Tax @	0.00% \$0.00	\$0.00
Equipment Cost	\$584,933.13 Equipment Tax @	0.00% \$0.00	\$584,933.13
Subcontractors	\$0.00		\$0.00
DIRECT COST SUBTOTALS	\$942,102	\$0	DIRECT COST SUBTOTALS \$942,102
Additional Pay Item Notes :			

1.020 Miscellaneous Excavation Details	(Dam Earth Section)
High Cost Factors	Low Cost Factors
Bad Westher 0%	No Bad Weather 0%
Gas Price Increase 10%	Gas Price Decrease 10%
Unforeseen Contaminated Mats/ Access Issues 10%	
20%	10%
Production Per Hour Hours	Efficiency Factor (Access, Activity, Cty, High Rebar Density, Breaks, Ect) Overall Production
400	70% 2240
16	70% 2800
Haul Notes	Excavator Loading Production per shift CY per Hour 80
	Li per riour C'Y Bucket Size 5.00
	Suckets Per Hour 16
	# of Excavators 1.00
	CY per Hour (5 CY Bucket) 80
	CY Per Hour Ideal Production Per 8 Hour Shift 160
	Efficient Compared to Ideal Production 50%
	Intelligencies Compared to Ideal Production 50%
Return Speed (Unloaded MPH)	
Haul Distance (Miles) 0.55	
Shift Length (Hours)	
Cyce Time	
Haul Time (Heal Distance / Heal Speed)	
Dump Time (bump Time Misuss / 60 Mins)	
Return Time (Haul Distance / Return Speed)	
Hours Per Cycle 0.24 Efficiency Factor (pligs Wark, Traffic Retrictions, Coffee Breaks, ECT) 709	
Efficiency Factor (Nighe Work, Traffic Retrictions, Coffee Breaks, ECT) 70%	
Actual Hours Per Cycle (Hours per Cycle (Hours per Cycle / Efficiency Factor) Number of Cycles (But CY (Hour Verlet Cap X or Heat Vehicles) 1287	
Number or Lyches Baik Cit (Neal Vehicle Cap X of Hair Vehicles) 1.26/ Total Number of Haul Hours (Actional Cycle Hours X Number of Cycles) 430.78	
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) 2.94	
Number of Haul Days 43.078	
Speed Loaded	
Max Weight lbs of loaded 745 164,500.00 2 70 70 70 70 70 70 70 70 70 70 70 70 70	
20lbs/Ton Rolling weigth 4	
Rolling Resitance (1% for each 20lbs/Ton) 4%	
Slope Grade 8W Total Resistance 129	
Max Gear per CAT Chart 4	
Max MPH 8.8	
Speed Empty Max Weight lbs of Empty 745 74,100.00	
Tons Empty 37	
20lbs/Ton Rolling weight Empty 2	
Rolling Resitance (1% per 20lbs/Ton) Empty 2%	
Average Slope Empty 8%	
Total Resistance Empty Max Gear per CAT Chart Empty N/A	
Max MPH Empty N/A	
Notes Due to weight and Grade Speed Calculation is not applicable	
Other Notes Overall efficiency is reduced to account for developing initial access for trucks, maintaining access as dam elevation lowers, and any down time. Disposal site is roughly 1/2 mile away from earth dam locati	on trucks are expected to run slower loaded due to rolling resistance being high and driving up a slight incline to disposal site (Roughly a 7% Signe)
, and the state of	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.021	Project : KRRP - JC Boy	le		
Description	:	Cutoff Wall Concrete Demolition	Group : D07			
Quantity	1.021	70.00 CY				
Daily Production	1.021	80.00 CY per 10 hour shift	Project # : 1			
Work Days	1.021	0.9 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.021	\$126.12 per CY	Probable Low Cost Parameter	84.00	\$8,387	\$99.85
Total Cost	1.021	\$8,829	Probable High Cost Parameter	68.00	\$10,153	\$149.31

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	2.00	0.9	10	18.00	Е	\$205.40	incl. in rate	incl. in rate	\$3,697.20
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.9	10	9.00	E	\$117.28	incl. in rate	incl. in rate	\$1,055.52
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.9	10	9.00	E	\$16.99	incl. in rate	incl. in rate	\$152.91
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	0.9	10	9.00	E	\$63.28	incl. in rate	incl. in rate	\$569.52
Labor Foreman	Active	1.00	0.9	10	9.00	L	\$58.87	incl. in rate	incl. in rate	\$529.85
Laborer	Active	2.00	0.9	10	18.00	L	\$51.07	incl. in rate	incl. in rate	\$919.31
Equipment Operator (medium)	Active	2.00	0.9	10	18.00	L	\$72.34	incl. in rate	incl. in rate	\$1,302.05
Truck Driver (heavy)	Active	1.00	0.9	10	9.00	L	\$66.92	incl. in rate	incl. in rate	\$602.32
				Labor Hours	54				TOTAL LABOR	\$3,353.53
				Equipment Hours	45			TO	TAL EQUIPMENT	\$5,475.15

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

			TOTAL SUBCONTRACTS	\$0.0
SUMMARY OF COSTS				
Labor Cost Material Cost	\$3,353.53 Labor Burden @ \$0.00 Material Tax @	0.0% 0.00% \$0.00		\$3,353. \$0.
Equipment Cost Subcontractors	\$5,475.15 Equipment Tax @	0.00% \$0.00		\$5,475. ⁻ \$0.0
DIRECT COST SUBTOTALS	\$8,829	\$0	DIRECT COST SUBTOTALS	\$8,8
dditional Pay Item Notes :				

	Il Concrete Demolition Details	
High Cost Factors Bad Weather 0	Low Cost Factors No Bad Weather	0%
Gas Price Increase 10	9% Gas Price Decrease	5%
Unforeseen Contaminated Mats/ Access Issues 5	No Unforeseen Contaminated Mats/ Access Issues	0% 5%
		3%
Production Per Hour Hours	Overall Production 64	
	10 80	
Haul Notes	Excavator Loading Production per shift	
	00 CY per Hour 20.69	
	CY Bucket Size 2.50	
	12 Buckets Per Hour 8 12 # of Excavators 1.00	
For Hauf vehicles	1 CY per Hour (2.5 CY Bucket) 21	
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)	5 CY Per Hour Ideal Production Per 8 Hour Shift 95	
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)	5 Efficient Compared to Ideal Production 22%	
Haul Speed (Loaded MPH)	15 Inefficiencies Compared to Ideal Production 78%	
	20	
Haul Distance (Miles) Along Power Canal 2.5		
Shift Length (Hours)	10	
Cyce Time	Breaker Production	
	08 Hydraulic Hammer CY per Hour 8	
	17 # of Hammers 1.00	
	08 CY per Hour 8	
	13 CY per Hour Back Check 8	
Hours Per Cycle 0.4	46 32CY per HR per 8hr shift (Ideal prod) 32	
	% Efficient Compared to Ideal Production 25%	
Actual nours per Cycles (Bulk CTV) (Real Vehicles Cap X # of Haul Vehicles) U.S. Number of Cycles (Bulk CTV) (Real Vehicle Cap X # of Haul Vehicles)	58 Inefficiencies Compared to Ideal Production 75%	
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) 5.3		
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) 1.7. Number of Haul Days 0.52		
Speed Loaded		
Max Weight lbs of loaded 725 103,707.0	0	
Tons 5 20lbs/Ton Rolling weigth	3	
Rolling Resitance (1% for each 20lbs/Ton) 3	3%	
Average Slope 2 Total Resistance 5	2% 5%	
Max Gear per CAT Chart	4	
Max MPH 1 Speed Empty	15	
Max Weight lbs of Empty 725 50,795.0		
Tons Empty 2	25	
	1	
Rolling Resitance (1% per 20lbs/Ton) Empty 1 Average Slope Empty 2	% 2%	
Total Resistance Empty 3	3%	
Max Gear per CAT Chart Empty Max MPH Empty	5 20	
Other Notes		
Due to the low demolition quantity it is expected that the equipment will be less efficient when compared to ideal productions.		

PAY ITEM COST DETAIL WORKSHEET 1.022 Cuttoff Wall Anchors

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.022	Project : KRRP - JC Boyle			
Description	:	Cuttoff Wall Anchors	D07			
Quantity	:	285.00 EA				
Daily Production	:	560.00 EA per 20 hour shift	Project # : 1			
Work Days	:	0.5 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$18.67 per EA	Probable Low Cost Parameter	588.00	\$5,056	\$8.60
Total Cost	:	\$5,322	Probable High Cost Parameter	504.00	\$5,854	\$11.61

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	20	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	2.00	0.5	20	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.46
Ironworkers	Active	2.00	0.5	20	20.00	L	\$78.16	incl. in rate	incl. in rate	\$1,563.10
Equipment Operator (medium)	Active	1.00	0.5	20	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	20	10.00	E	\$63.11	incl. in rate	incl. in rate	\$631.10
Acetylene Torches	Active	2.00	0.5	20	20.00	E	\$0.47	incl. in rate	incl. in rate	\$9.40
·										
				Labor Hours	60				TOTAL LABOR	\$3,896.64
				Equipment Hours	30				TOTAL EQUIPMENT	\$640.50

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$584.50	\$584.50

			TOTAL MA	TERIAL \$584.50
SUBCONTRACT COSTS				
Description	Quantity Units	Notes / Company	Unit Price	Contract or Quote Amount
Hauling Disposal Cost	1.00 Loads	20 tons a load	\$200.00	\$200.0
			TOTAL SUBCONT	TRACTS \$200.0
SUMMARY OF COSTS				
Labor Cost Material Cost Equipment Cost Subcontractors	\$3,896.64 Labor Burden @ \$584.50 Material Tax @ \$200.00	49.7% \$0.00 0.0% \$0.00 0.0% \$0.00		\$3,896.6 \$584.5 \$640.5 \$200.0
DIRECT COST SUBTOTALS Additional Pay Item Notes :	\$5,322	\$0	DIRECT COST SUBT	FOTALS \$5,32

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.023	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose Hand Rails and Light Poles	Group : D10			
Quantity	:	5,000.00 LBS				
Daily Production	:	10,000.00 LBS per 10 hour shift	Project# : 1			
Work Days	:	0.5 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.78 per LBS	Probable Low Cost Parameter	10,500.00	\$3,721	\$0.35
Total Cost		\$3 917	Probable High Cost Parameter	8 500 00	\$4 505	\$0.53

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.36
Laborer	Active	2.00	0.5	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.73
Ironworkers	Active	1.00	0.5	10	5.00	L	\$78.16	incl. in rate	incl. in rate	\$390.78
Equipment Operator (crane)	Active	1.00	0.5	10	5.00	L	\$81.60	incl. in rate	incl. in rate	\$407.99
Equipment Operator (medium)	Active	1.00	0.5	10	5.00	L	\$72.34	incl. in rate	incl. in rate	\$361.68
Hydraulic Crane (80tn)	Active	1.00	0.5	10	5.00	E	\$197.66	incl. in rate	incl. in rate	\$988.30
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	10	5.00	Е	\$63.11	incl. in rate	incl. in rate	\$315.55
Acetylene Torches	Active	1.00	0.5	10.00	5.00	Е	\$0.47	incl. in rate	incl. in rate	\$2.35
				Labor Hours	30				TOTAL LABOR	\$1,965.54
				Equipment Hours	15				TOTAL EQUIPMENT	\$1,306.20

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$196.55	\$196.55

UBCONTRACT COSTS	Otit	Units	Notes /		Unit		Contract or Quote
Description	Quantity	Units	Company		Price		Amount
azardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)							
	0.25	ton	1.000	0.25	\$595.00		\$148
uling Disposal Cost 30 Miles to Klamath County Landfill	1.00	Loads	20 tons a load		\$300.00		\$300
						TOTAL SUBCONTRACTS	\$448
SUMMARY OF COSTS							
abor Cost	\$1.965.54	_abor Burden @		9.7% \$0.00			\$1,965
Material Cost		Material Tax @		0.0% \$0.00			\$196
Equipment Cost	\$1,306.20	Equipment Tax @		0.0% \$0.00			\$1,306
Subcontractors	\$448.75						\$448
DIRECT COST SUBTOTALS	\$3,917			\$0		DIRECT COST SUBTOTALS	\$3,9
Iditional Pay Item Notes :							

TOTAL MATERIAL

\$3,534.47

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.024	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose Spillway Radial Gates and Hoists	Group : D03			
Quantity	:	124,000.00 LBS				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	5.0 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.42 per LBS	Probable Low Cost Parameter	27,500.00	\$46,821	\$1.70
Total Cost	:	\$52.024	Probable High Cost Parameter	16.250.00	\$70.232	\$4.32

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	2.00	5.0	10	100.00	L	\$51.07	incl. in rate	incl. in rate	\$5,107.30
Ironworkers	Active	2.00	5.0	10	100.00	L	\$78.16	incl. in rate	incl. in rate	\$7,815.50
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Equipment Operator (medium)	Active	1.00	5.0	10	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Crawler Crane (130tn)	Active	1.00	5.0	10	50.00	E	\$262.91	incl. in rate	incl. in rate	\$13,145.50
Loader, FE Rubber Tire (3.5cy)	Active	1.00	5.0	10	50.00	E	\$63.11	incl. in rate	incl. in rate	\$3,155.50
Acetylene Torches	Active	2.00	5.0	10.00	100.00	E	\$0.47	incl. in rate	incl. in rate	\$47.00
									·	
				Labor Hours	350				TOTAL LABOR	\$23,563.10
				Equipment Hours	200				TOTAL EQUIPMENT	\$16,348.00
<u> </u>							-			<u>. </u>

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 15% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$3,534.47	\$3,534.47

Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (20% of material)							
Hauling Disposal Cost 30 Miles to Klamath County	12.40 4.00	ton Loads	1.000 20 tons a load	12.40	\$595.00 \$300.00		\$7,378.00 \$1,200.00
						TOTAL SUBCONTRACTS	\$8,578.00

\$23,563.10 Lab	bor Burden @	49.7%	\$0.00		\$23,563.10
		0.0%	\$0.00		\$3,534.47
\$16,348.00 Equ	uipment Tax @	0.0%	\$0.00		\$16,348.00
\$8,578.00					\$8,578.00
\$52,024			\$0	DIRECT COST SUBTOTALS	\$52,024
	\$3,534.47 \$16,348.00 \$8,578.00	<u> </u>	\$3,534.47 Material Tax @ 0.0% \$16,348.00 Equipment Tax @ 0.0% \$8,578.00	\$3,534.47 Material Tax @ 0.0% \$0.00 \$16,348.00 Equipment Tax @ 0.0% \$0.00	\$3,534.47 Material Tax @ \$0.00

\$4,956.89

TOTAL MATERIAL

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.025	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose Stop Logs and Slots (steel)	Group : D03			
Quantity	:	92,000.00 LBS	 ,			
Daily Production	:	62,000.00 LBS per 20 hour shift	Project # : 1			
Work Days	:	1.5 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.44 per LBS	Probable Low Cost Parameter	68,200.00	\$36,584	\$0.54
Total Cost		\$40.649	Probable High Cost Parameter	49 600 00	\$48 779	\$0.08

CREW COSTS										
Description Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.5	20	30.00	L	\$58.87	incl. in rate	incl. in rate	\$1,766.16
Laborer	Active	2.00	1.5	20	60.00	L	\$51.07	incl. in rate	incl. in rate	\$3,064.38
Ironworkers	Active	2.00	1.5	20	60.00	L	\$78.16	incl. in rate	incl. in rate	\$4,689.30
Equipment Operator (medium)	Active	1.00	1.5	20	30.00	L	\$72.34	incl. in rate	incl. in rate	\$2,170.08
Equipment Operator (crane)	Active	1.00	1.5	20	30.00	L	\$81.60	incl. in rate	incl. in rate	\$2,447.94
Hydraulic Excavator (2.5cy)	Active	1.00	1.5	20	30.00	E	\$205.40	incl. in rate	incl. in rate	\$6,162.00
Crawler Crane (130tn)	Active	1.00	1.5	20	30.00	E	\$262.91	incl. in rate	incl. in rate	\$7,887.30
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	1.5	20	30.00	Е	\$36.81	incl. in rate	incl. in rate	\$1,104.30
Acetylene Torches	Active	2.00	1.5	20.00	60.00	E	\$0.44	incl. in rate	incl. in rate	\$26.40
				Labor Hours	210				TOTAL LABOR	\$14,137.86
				Equipment Hours	150				TOTAL EQUIPMENT	\$15,180.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$706.89	\$706.89
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	5,000.00	LF	1.000	5,000.00	\$0.85	\$4,250.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (20%)						
Hauling Disposal Cost 30 Miles to Klamath County Landfill	9.20 3.00	ton Loads	1.000 18 tons a load	9.20	\$595.00 \$300.00	\$5,474.00 \$900.00

			TOTAL SUBCONTRACTS	\$6,374.00
SUMMARY OF COSTS				
Labor Cost Material Cost Equipment Cost Subcontractors	\$14,137.86 Labor Burden @ \$4,956.89 Material Tax @ Equipment Tax @ \$15,180.00 \$6,374.00	49.7% \$0.00 0.0% \$0.00 0.0% \$0.00		\$14,137.86 \$4,956.89 \$15,180.00 \$6,374.00
DIRECT COST SUBTOTALS	\$40,649	\$0	DIRECT COST SUBTOTALS	\$40,649
Additional Pay Item Notes :				

TOTAL MATERIAL

\$294.83

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.026	Project : KRRP - JC Boyle			
		Remove & Dispose of 24" Slide Gate at Entrance to Fish Ladder Structure				
Description	:		Group : D03			
Quantity	:	4,200.00 LBS				
Daily Production	:	8,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	0.5 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.30 per LBS	Probable Low Cost Parameter	8,400.00	\$5,170	\$0.62
Total Cost	:	\$5,442	Probable High Cost Parameter	4,400.00	\$7,891	\$1.79

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Bestription	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.3
Laborer	Active	2.00	0.5	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.73
Ironworkers	Active	1.00	0.5	10	5.00	L	\$78.16	incl. in rate	incl. in rate	\$390.7
Equipment Operator (crane)	Active	1.00	0.5	10	5.00	L	\$81.60	incl. in rate	incl. in rate	\$407.9
Equipment Operator (medium)	Active	1.00	0.5	10	5.00	L	\$72.34	incl. in rate	incl. in rate	\$361.6
Crawler Crane (130tn)	Active	1.00	0.5	10	5.00	E	\$262.91	incl. in rate	incl. in rate	\$1,314.5
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	10	5.00	E	\$63.11	incl. in rate	incl. in rate	\$315.5
Acetylene Torches	Active	1.00	0.5	10.00	5.00	Е	\$0.44	incl. in rate	incl. in rate	\$2.20
				Labor Hours	30				TOTAL LABOR	\$1,965.5
				Equipment Hours	15				TOTAL EQUIPMENT	\$1,632.3

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
onsumables 5% labor (saw blades, drill bits, Torch Gas, etc)	1.00	LS	1.000	1.00	\$294.83	\$294.

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Hauling Disposal Cost 30 Miles to Klamath County Landfill	2.10 1.00	ton Loads	1.000 20 tons a load	2.10	\$595.00 \$300.00	\$1,249.50 \$300.00
					TOTAL SUBCONTRACTS	\$1,549.50

SUMMARY OF COSTS						
Labor Cost	\$1,965.54	Labor Burden @	49.7%	\$0.00		\$1,965.54
Material Cost	\$294.83	Material Tax @	0.0%	\$0.00		\$294.83
Equipment Cost	\$1,632.30	Equipment Tax @	0.0%	\$0.00		\$1,632.30
Subcontractors	\$1,549.50					\$1,549.50
DIRECT COST SUBTOTALS	\$5,442			\$0	DIRECT COST SUBTOTALS	\$5,442
Additional Pay Item Notes :						
<u> </u>						

PAY ITEM INFORMATION
PAY ITEM NUMBER : KRRP - JC Boyle Description Quantity Daily Production Work Days Unit Price : D09 Group 2.3 Days \$11.85 per GAL \$18,961 10 hour shift Project # : 1
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter GAL per 790.63 Total Cost \$16,117 Unit Price Per GAL \$20.38 Total Cost \$18,961 Probable High Cost Parameter 481.25 \$24,649 \$51.22

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.3	10	23.00	L	\$58.87	incl. in rate	incl. in rate	\$1,354.06
Electrician	Active	1.00	2.3	10	23.00	L	\$55.80	incl. in rate	incl. in rate	\$1,283.47
Laborer	Active	4.00	2.3	10	92.00	L	\$51.07	incl. in rate	incl. in rate	\$4,698.72
Pump, Centrifugal, 3"	Active	3.00	2.3	10	69.00	E	\$2.76	incl. in rate	incl. in rate	\$190.14
Truck Driver (heavy)	Active	1.00	2.3	10	23.00	L	\$75.72	incl. in rate	incl. in rate	\$1,741.65
Truck, Tractor (400hp)	Active	1.00	2.3	10	23.00	E	\$69.98	incl. in rate	incl. in rate	\$1,609.54
Equipment Operator (medium)	Active	1.00	2.3	10	23.00	L	\$72.34	incl. in rate	incl. in rate	\$1,663.73
Loader, FE Rubber Tire (3.5cy)	Active	1.00	2.3	10	23.00	E	\$63.11	incl. in rate	incl. in rate	\$1,451.53
				Labor Hours	184				TOTAL LABOR	\$10,741.62

ERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						TOTAL MATERIAL

Description	Quantity	Units	Notes / Company	Unit Price			Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment	18.40	hour	RSM Means 028120101260		\$270.00		\$4,968
						TOTAL SUBCONTRACTS	\$4,968
SUMMARY OF COSTS							
Labor Cost Material Cost Equipment Cost Subcontractors	\$0.00	Labor Burden @ Material Tax @ Equipment Tax @	49.7% 0.0% 0.0%	\$0.00 \$0.00 \$0.00			\$10,74° \$6 \$3,25° \$4,968
DIRECT COST SUBTOTALS	\$18,961			\$0		DIRECT COST SUBTOTALS	\$18
DIRECT COST SUBTOTALS Additional Pay Item Notes :	\$18,961			\$0		DIRECT COST SUBTOTALS	

TOTAL MATERIAL

\$333.88

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.027	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Spillway gate motor & control panel	Group	: D04			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,151.05 per EA	Probable Low (Cost Parameter	1.38	\$1,036	\$753.41
Total Cost	:	\$1,151	Probable High	Cost Parameter	1.00	\$1,381	\$1,381.26

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
						_				
				Labor Hours	16				TOTAL LABOR	\$817.17
				Equipment Hours	0				TOTAL EQUIPMENT	\$0.00
				•					•	
MATERIAL COSTS										
Description	Item	Order		Conversion	Order		Order			Material

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 0.5% labor (Side Cutter, Sharp- Nose Pliers, Sharp Tip Tweezers PCB Clamp, etc)	4.09	LS	1.000	4.09	\$81.72	\$333.8

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$817.17	Labor Burden @	49.7%	\$0.00		\$817.
Material Cost	\$333.88	Material Tax @	0.0%	\$0.00		\$333.
Equipment Cost	\$0.00	Equipment Tax @	0.0%	\$0.00		\$0.0
Subcontractors	\$0.00					\$0.
DIRECT COST SUBTOTALS	\$1,151			\$0	DIRECT COST SUBTOTALS	\$1,1
Additional Pay Item Notes :					<u> </u>	
Assumed that two workers will work of		d remove the control panel and	d the gate motor. They will disch	arge the control pa	anel and the gate motor in an available truck used for the other scope of work on the	



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Electrician	Active	1.00	1.6	10.0	16.0	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Equipment Operator (crane)	Active	1.00	1.0	10.0	10.0	L	\$81.60	incl. in rate	incl. in rate	\$815.98
Hydraulic Crane (17tn)	Active	1.00	1.0	10.0	10.0	Е	\$82.43	incl. in rate	incl. in rate	\$824.30
				Labor Hours	42				TOTAL LABOR	\$2,601.68
				Equipment Hours	10				TOTAL EQUIPMENT	\$824.30

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
	Quantity	Onit	i actor / Waste	Quantity	11100		COST
Consumables 0.5% labor (Side Cutter, Sharp-Nose Pliers, Sharp Tip							
Tweezers PCB Clamp, etc)	0.00	LS	1.000	0.00	\$130.08		\$0.00
1 OB Gramp, stoy	0.00	20	1.000	0.00	\$100.00		ψ0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hauling Disposal Cost 30 Miles to Klamath County Landfill	1.00	Loads	20 tons a load	\$300.00	_	\$300.00
					TOTAL SUBCONTRACTS	\$300.00

SUMMARY OF COSTS						
Labor Cost	\$2,601.68	Labor Burden @	49.7%	\$0.00		\$2,601.68
Material Cost	\$0.00	Material Tax @	0.0%	\$0.00		\$0.00
Equipment Cost	\$824.30	Equipment Tax @	0.0%	\$0.00		\$824.30
Subcontractors	\$300.00					\$300.00
DIRECT COST SUBTOTALS	\$3,726			\$0	DIRECT COST SUBTOTALS	\$3,72
Additional Pay Item Notes :						
Assumed that electrical crew formed of 1 Formar	and 1 Electricians will work two days to	unconnected and remove th	e distribution panels. They are goin	g to use same	crane and a truck for disposal of spillway intake, trash rake and radial motor &	
control panel. Assumed weight: 500 LBS						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.029	Project : KRRP - JC Boyle	е		
Description	:	Remove Powerhouse Concrete down to Elevation 3324.0	Group : D07			
Quantity	1.029	1,500.00 CY				
Daily Production	1.029	105.00 CY per 10 hour shift	Project # : 1			
Work Days	1.029	14.3 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.029	\$234.12 per CY	Probable Low Cost Parameter	115.50	\$316,066	\$2,736.51
Total Cost	1.029	\$351,185	Probable High Cost Parameter	84.00	\$421,422	\$5,016.93

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	14.3	10	143.00	L	\$58.87	incl. in rate	incl. in rate	\$8,418.70
Laborer	Active	3.00	14.3	10	429.00	L	\$51.07	incl. in rate	incl. in rate	\$21,910.32
Equipment Operator (medium)	Active	2.00	14.3	10	286.00	L	\$72.34	incl. in rate	incl. in rate	\$20,688.10
Truck Driver (heavy)	Active	2.00	5.4	10	108.00	L	\$66.92	incl. in rate	incl. in rate	\$7,227.79
Air Compressor 900 cfm	Active	1.00	14.3	10	143.00	E	\$38.87	incl. in rate	incl. in rate	\$5,558.26
Air Tool, Chipping Hammer	Active	2.00	14.3	10	286.00	E	\$1.64	incl. in rate	incl. in rate	\$468.76
Generator, Small Generator, 10 - 15 kW	Active	1.00	14.3	10	143.00	E	\$7.04	incl. in rate	incl. in rate	\$1,006.72
Hydraulic Excavator (5.0cy)	Active	1.00	14.3	10	143.00	E	\$276.50	incl. in rate	incl. in rate	\$39,539.50
Hydraulic Excavator (2.5cy)	Active	1.00	14.3	10	143.00	E	\$205.40	incl. in rate	incl. in rate	\$29,372.20
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	14.3	10	143.00	E	\$63.28	incl. in rate	incl. in rate	\$9,049.04
Hydraulic Thumbs/Shear Attachment	Active	1.00	14.3	10	143.00	E	\$24.92	incl. in rate	incl. in rate	\$3,563.56
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	5.4	10	108.00	E	\$117.28	incl. in rate	incl. in rate	\$12,666.24
Drilling and Blasting Operator	Active	3.00	14.3	10	429.00	L	\$48.70	incl. in rate	incl. in rate	\$20,890.87
Air Track Drill 4"	Active	1.00	14.3	10	143.00	Е	\$212.49	incl. in rate	incl. in rate	\$30,386.07
Hydraulic Crane (50tn)	Active	1.00	3.6	10	35.75	E	\$134.32	incl. in rate	incl. in rate	\$4,801.94
				Labor Hours	1395				TOTAL LABOR	\$79,135.77
				Equipment Hours	1430.75			тс	OTAL EQUIPMENT	\$136,412.29

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
Consumables (5% labor)	1.00	LS	1.000	1.00	\$6,820.61	\$6,820.61
Blasting Material	16,400.00	CY	1.050	17,220.00	\$5.56	\$95,777.64
Drill Bit Wear Allowance (10% of Drilling Eq)	1.00	LS	1.000	1.00	\$3,038.61	\$3,038.61

SUBCONTRACT COSTS

Page rightion Quantity Units Notes / Unit Contract or Quote

0020011111101 00010				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	1 AL	Allowance	\$20,000.00	\$20,000.00
(assumption)	1.00 AL	Allowance	10,000.00	\$10,000.00

			TOTAL SUBCONTRACTS	\$30,000.00
		_		
SUMMARY OF COSTS				
Labor Cost	\$79,135.77 Labor Burden @	0.0%		\$79,135.77
Material Cost	\$105,636.86 Material Tax @	0.00% \$0.00		\$105,636.86
Equipment Cost	\$136,412.29 Equipment Tax @	0.00% \$0.00		\$136,412.29
Subcontractors	\$30,000.00			\$30,000.00
DIRECT COST SUBTOTALS	\$351,185	\$0	DIRECT COST SUBTOTALS	\$351,185
Additional Pay Item Notes :				

Production Per Hour Hours		Efficiency Factor (Access, Activity, Oty, High Rebar Density, Breaks, Ect) Overall Production
Production Per Hour Hours 30	8	
	10	
Haul Notes		Excavator Loading Production per shift
CY	1,500.00	CY per Hour
Swell Factor	60%	C Bucket Size
Bulk CY		Buckets Per Hour
Haul Vehicle 60% Capacity (2 tons per CY)		# of Excavtors
# of Haul Vehicles		CV per Hour (5 CY Bucket)
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		Cr per hour (deal Production Per 8 Hour Shift
Dump Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		C.F. et nour useal refouncion et a nour sinit Efficient Compared to Ideal Production
Haul Speed (Loaded MPH)		Inefficiencies Compared to Ideal Production
Return Speed (Unloaded MPH)	20.00	
Haul Distance (Miles) Along Power Canal	2.58 10	
Shift Length (Hours)	10	
		Breaker Production
Cyce Time		Hydraulic Hammer CY per Hour
Load Time (Load Time Minutes / 60mins)		≢ of Hammers
Haul Time (Haul Distance / Haul Speed)	0.17	CY per Hour
Dump Time (Dump Time Minutes / 60 Mins)	0.05	CY per Hour Back Check
Return Time (Haul Distance / Return Speed)	0.13	32CY per HR per 8hr shift (Ideal prod)
Hours Per Cycle		Efficient Compared to Ideal Production
Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		Inefficiencies Compared to Ideal Production
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	0.54	
Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	100	Drilling and Blasting Production per shift
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)		Drilling and Blasting CY per Hour
Number of Haul Days		# of Drills
		CY per Hour
		CY per Hour Back Check
Speed Loaded Max Weight lbs of loaded 725	102 707 00	38CY per HR per 8hr shift (Ideal prod) Efficient Compared to Ideal Production
Tons		Emerican Compared to Ideal Production
20lbs/Ton Rolling weigth	3	
Rolling Resitance (1% for each 20lbs/Ton)	3%	
Slope Grade	7%	
Total Resistance	9%	
Max Gear per CAT Chart Max MPH	15	
Speed Empty	13	
Max Weight lbs of Empty 725	50,795.00	
Tons Empty	25	
20lbs/Ton Rolling weight Empty	1	
Rolling Resitance (1% per 20lbs/Ton) Empty	1%	
Average Slope Empty	7%	
Total Resistance Empty	8%	1,029 Remove Powerhouse Concrete down to El, 3324
Max Gear per CAT Chart Empty	5 20	
Max MPH Empty	20	



22 2.50 9 1.00 22 95 23% 77%

1 10.50 10.5 32 0.328125 67% 0%

Other Notes

This estimate presents that the power house concrete will be demolished by using a combination of blisting and concrete breakers/ Crushers. It is expected that the power house concrete will have dense reinforcement and other embedded items and the efficiency has been reduced to account for ending the draft tube as the concrete demolition progresses.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.030	Project	: KRRP - JC Boyle			
Description	:	Remove Structural Steel Item associated with Powerhouse	Group	: D10			
Quantity	:	94,000.00 LBS					
Daily Production	:	19,000.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	4.9 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.56 per LBS	Probable Low C	ost Parameter	20,900.00	\$47,165	\$2.26
Total Cost	:	\$52,405	Probable High C	Cost Parameter	16,150.00	\$60,266	\$3.73

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.9	10	49.00	L	\$58.87	incl. in rate	incl. in rate	\$2,884.73
Laborer	Active	3.00	4.9	10	147.00	L	\$51.07	incl. in rate	incl. in rate	\$7,507.73
Steelworker	Active	2.00	4.9	10	98.00	L	\$78.10	incl. in rate	incl. in rate	\$7,653.80
Equipment Operator (crane)	Active	1.00	4.9	10	49.00	L	\$81.60	incl. in rate	incl. in rate	\$3,998.30
Equipment Operator (medium)	Active	1.00	4.9	10	49.00	L	\$72.34	incl. in rate	incl. in rate	\$3,544.46
Crawler Crane (130tn)	Active	1.00	4.9	10	49.00	E	\$262.91	incl. in rate	incl. in rate	\$12,882.59
Loader, FE Rubber Tire (5.25cy)	Active	1.00	4.9	10	49.00	E	\$76.00	incl. in rate	incl. in rate	\$3,724.00
				Labor Hours Equipment Hours	392 98				TOTAL LABOR	\$25,589.03 \$16,606.59

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$3,838.35	\$3,838.35

						TOTAL MATERIAL	\$3,838.35
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)							
Hauling Disposal Cost Selective demolition, torch cutting, steel, 1" thick plate (assumption)	4.70 3.00 3,500.00	ton Loads LF	1.000 20 tons a load 1.000	4.70 3,500.00	\$595.00 \$200.00 \$0.85		\$2,796.5 \$600.0 \$2,975.0
						TOTAL SUBCONTRACTS	\$6,371.5
SUMMARY OF COSTS							
Labor Cost		_abor Burden @		19.7% \$0.00			\$25,589.0
Material Cost		Material Tax @		0.0% \$0.00			\$3,838.3
Equipment Cost		Equipment Tax @		0.0% \$0.00			\$16,606.59
Subcontractors	\$6,371.50						\$6,371.50
DIRECT COST SUBTOTALS	\$52,405			\$0		DIRECT COST SUBTOTALS	\$52,405
Additional Pay Item Notes :							

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.031	Project : KRRP - JC Bo	yle		
Description	:	Remove Warehouse near Powerhouse	Group : D10			
Quantity	1.031	5,060.00 SF				
Daily Production	1.031	1,125.00 SF per 10 hour shift	Project # : 1			
Work Days	1.031	4.5 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.031	\$14.82 per SF	Probable Low Cost Parameter	1,181.25	\$71,251	\$60.32
Total Cost	1.031	\$75,002	Probable High Cost Parameter	1,012.50	\$82,502	\$81.48

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	4.5	10	45.00	L	\$58.87	incl. in rate	incl. in rate	\$2,649.24
Laborer	Active	3.00	4.5	10	135.00	L	\$51.07	incl. in rate	incl. in rate	\$6,894.86
Steelworker	Active	1.00	4.5	10	45.00	L	\$78.16	incl. in rate	incl. in rate	\$3,516.9
Equipment Operator (medium)	Active	2.00	4.5	10	90.00	L	\$72.34	incl. in rate	incl. in rate	\$6,510.24
Hydraulic Excavator (5.0cy)	Active	1.00	4.5	10	45.00	Е	\$276.50	incl. in rate	incl. in rate	\$12,442.50
Loader, FE Rubber Tire (3.5cy)	Active	1.00	4.5	10	45.00	Е	\$63.11	incl. in rate	incl. in rate	\$2,839.95
Acetylene Torches	Active	1.00	4.5	10	45.00	E	\$0.44	incl. in rate	incl. in rate	\$19.80
				Labor Hours	315				TOTAL LABOR	\$19,571.3
				Equipment Hours	135			TC	TAL EQUIPMENT	\$15,302.2

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00
						TOTAL WATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	742 CY				\$0.00
Conversion CY to Tons (2 tons per CY)	372.00 tons	Klamath County LandFill	\$74.00		\$27,528.00
Hauling cost to landfill	42.00 Loads	18 CY per load	\$300.00		\$12,600.00
					\$0.00
				TOTAL SUBCONTRACTS	\$40,128.00

				Ψ0.00
			TOTAL SUBCONTRACTS	\$40,128.0
UMMARY OF COSTS				
Labor Cost	\$19,571.31 Labor Burden @	0.0%		\$19,571.3
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.0
Equipment Cost	\$15,302.25 Equipment Tax @	0.00% \$0.00		\$15,302.25
Subcontractors	\$40,128.00			\$40,128.00
IRECT COST SUBTOTALS	\$75,002	\$0	DIRECT COST SUBTOTALS	\$75,00
dditional Pay Item Notes :				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.032	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of 2 - Governor oil systems	Group : D03			
Quantity	:	52,500.00 LBS				
Daily Production	:	18,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	2.9 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.97 per LBS	Probable Low Cost Parameter	18,900.00	\$48,403	\$2.56
Total Cost		\$50.951	Probable High Cost Parameter	15 300 00	\$58 594	\$3.83

Electrician Foreman A Electrician A	Active	1.00	Worked 2.9	/day 10	29.00		Rate	Cost	Rate	Cost
Electrician A			2.9	10	20.00					
	Active				29.00	L	\$55.80	incl. in rate	incl. in rate	\$1,618.29
		1.00	2.9	10	29.00	L	\$55.80	incl. in rate	incl. in rate	\$1,618.29
Ironworkers A	Active	4.00	2.9	10	116.00	L	\$78.16	incl. in rate	incl. in rate	\$9,065.98
Hydraulic Excavator (5.0cy)	Active	1.00	2.9	10	29.00	E	\$276.50	incl. in rate	incl. in rate	\$8,018.50
Hydraulic Crane (80tn)	Active	1.00	2.9	10	29.00	E	\$197.66	incl. in rate	incl. in rate	\$5,732.14
Equipment Operator (medium)	Active	1.00	2.9	10	29.00	L	\$72.34	incl. in rate	incl. in rate	\$2,097.74
Equipment Operator (crane)	Active	1.00	2.9	10	29.00	L	\$81.60	incl. in rate	incl. in rate	\$2,366.34

\$16,766.64	TOTAL LABOR	232	Labor Hours
\$13.750.64	TOTAL EQUIPMENT	58	Equipment Hours

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$2,515.00	\$2,515.00

TOTAL MATERIAL	\$2,515.00

						TOTAL MATERIAL	\$2,510.
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum							
Hauling Disposal Cost 30 Miles to Klamath County Landfill	26.25 2.00	ton Loads	1.000 20 tons a load	26.25	\$595.00 \$300.00		\$15,618 \$600
Selective demolition, torch cutting, steel, 1* thick plate (assumption)	2,000.00	LF	1.000	2,000.00	\$0.85		\$1,700
						TOTAL SUBCONTRACTS	\$17,918
SUMMARY OF COSTS							
Labor Cost	\$16,766.64	Labor Burden @	4	9.7% \$0.00			\$16,766
Material Cost	\$2,515.00	Material Tax @		0.0% \$0.00			\$2,515
Equipment Cost	\$13,750.64	Equipment Tax @		0.0% \$0.00			\$13,750
Subcontractors	\$17,918.75						\$17,918
DIRECT COST SUBTOTALS	\$50.951			\$0		DIRECT COST SUBTOTALS	\$50.9

DIRECT COST SUBTOTALS \$50,951 \$0 DIRECT COST SUBTOTALS

Additional Pay Item Notes:

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.033	Project : KRRP - JC B	oyle		
Description	:	Remove & Dispose of Cooling water and bearing oil systems	Group : D03			
Quantity	:	6,500.00 LBS				
Daily Production	:	14,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	0.5 Days	Estimator : Mihaela Tom	ulescu LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.14 per LBS	Probable Low Cost Parameter	15,400.00	\$6,656	\$0.43
Total Cost	:	\$7,395	Probable High Cost Parameter	11,900.00	\$8,504	\$0.71

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.36
Laborer	Active	1.00	0.5	10	5.00	L	\$51.07	incl. in rate	incl. in rate	\$255.37
Steelworker	Active	1.00	0.5	10	5.00	L	\$78.10	incl. in rate	incl. in rate	\$390.50
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.5	10	5.00	E	\$225.40	incl. in rate	incl. in rate	\$1,127.00
Truck Driver (heavy)	Active	1.00	0.5	10	5.00	L	\$75.72	incl. in rate	incl. in rate	\$378.62
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	0.5	10	5.00	E	\$117.28	incl. in rate	incl. in rate	\$586.40
Equipment Operator (light)	Active	1.00	0.5	10	5.00	L	\$69.19	incl. in rate	incl. in rate	\$345.95

Labor Hours	25	TOTAL LABOR	\$1,664.80
Equipment Hours	10	TOTAL EQUIPMENT	\$1,713.40

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$83.24	\$83.24

					TOTAL WATERIAL	\$63.Z4
					•	
Quantity	Units	Notes /	Unit			Contract or Quote
		Company	Price	•		Amount
oulk						
3.25	ton	1.000	3.25	\$595.00		\$1,933.75
	•	pulk	Company Company	Company Price	Company Price	Company Price

\$300.00 \$300.00 1.00 Loads 20 tons a load Selective demolition, torch cutting, steel, 1" thick plate (assumption) LF 2.000.00 1.000 2,000.00 \$0.85 \$1,700.00

TOTAL SUBCONTRACTS \$3,933.75

SUMMARY OF COSTS						
Labor Cost	\$1,664.80	Labor Burden @	49.7%	\$0.00		\$1,664.80
Material Cost	\$83.24	Material Tax @	0.0%	\$0.00		\$83.24
Equipment Cost	\$1,713.40	Equipment Tax @	0.0%	\$0.00		\$1,713.40
Subcontractors	\$3,933.75					\$3,933.75
DIRECT COST SUBTOTALS	\$7,395			\$0	DIRECT COST SUBTOTALS	\$7,395

Additional Pay Item Notes :

Used RS Means: Assumed * Pipe, metal pipe, to 1-1/2* diam., selective demolition*, 2390 LF of 1 1/2* oil pipes at 2.72 Lbs/LF. Used 1 Forman, 1 Steeworkers to cut the pipes and 1 Laborers to load the pipes in the truck. The cooling and lubrication systems for the Hydroelectric Barge turbine, speed increaser and generator will be a combination of water and oil. These systems will be isolated from the water passages so that no contamination of passing water will occur. The following is a list of hazardous materials, substances, chemicals, and wastes normally found at a hydropower facility that may require disposal actions if not recycled or reused for their intended purpose:

1. Polychorizated Biphenyls (PCBs)

2. Asbestos

3. Paint/abrasive blast grit (red lead paint)

4. Oil

5. Mercury

6. Antifreeze

7. Halogenated and non-halogenated solvents

8. Greases

9. Pesticides (includes herbicides, insecticides, and wood preservatives)

10. Petroleum contaminated

11. Chlorinated fluorocarbons (CFCs) Freori-Halon

12. Gasoline/Giesel (includes product and sludge in tanks)

13. Batteries (includes acid)

14. Water treatment sludge (septic tanks/wastewater treatment). Assumed hazardous waste 100% of the total lbs

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.034	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of 2 - Francis Turbines	Group : D03			
Quantity	:	560,000.00 LBS				
Daily Production	:	28,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	20.0 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.47 per LBS	Probable Low Cost Parameter	32,200.00	\$221,915	\$6.89
Total Cost	:	\$261.076	Probable High Cost Parameter	21.000.00	\$326.345	\$15.54

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	20.0	10	200.00	L	\$58.87	incl. in rate	incl. in rate	\$11,774.40
Laborer	Active	3.00	20.0	10	600.00	L	\$51.07	incl. in rate	incl. in rate	\$30,643.80
Electrician Foreman	Active	1.00	20.0	10	200.00	L	\$55.80	incl. in rate	incl. in rate	\$11,160.60
Electrician	Active	2.00	20.0	10	400.00	L	\$55.80	incl. in rate	incl. in rate	\$22,321.20
Steelworker	Active	2.00	20.0	10	400.00	L	\$78.10	incl. in rate	incl. in rate	\$31,240.00
Millwright	Active	2.00	20.0	10	400.00	L	\$82.04	incl. in rate	incl. in rate	\$32,815.20
Equipment Operator (medium)	Active	1.00	20.0	10	200.00	L	\$72.34	incl. in rate	incl. in rate	\$14,467.20
Equipment Operator (crane)	Active	1.00	20.0	10	200.00	L	\$81.60	incl. in rate	incl. in rate	\$16,319.60
Hydraulic Crane (50tn)	Active	1.00	20.0	10	200.00	E	\$136.20	incl. in rate	incl. in rate	\$27,240.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	20.0	10	200.00	E	\$63.11	incl. in rate	incl. in rate	\$12,622.00
Acetylene Torches	Active	2.00	20.0	10.00	400.00	Е	\$0.47	incl. in rate	incl. in rate	\$188.00
				Labor Hours	2600				TOTAL LABOR	\$170,742.00
				Equipment Hours	800				TOTAL EQUIPMENT	\$40,050.00

MATERIAL COSTS												
Description	Item	Order	Conversion	Order	Order	Material						
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost						
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$17,074.20	\$17,074.20						
(assumption)	3,000.00	LF	1.000	3,000.00	\$0.85	\$2,550.00						

TOTAL MATERIAL \$19,624.20

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Uni	t	Contract or Quote
			Company	Pric	e	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)						
Hauling Disposal Cost 30 Miles to Klamath County	28.00	ton	1.000	28.00	\$595.00	\$16,660.00
Landfill (wide Load)	14.00	Loads	1.000	14.00	\$1,000.00	\$14,000.00

SUMMARY OF COSTS						
Labor Cost	\$170,742.00 Lab	bor Burden @	49.7%	\$0.00		\$170,742.00
Material Cost	\$19,624.20 Mat	aterial Tax @	0.0%	\$0.00		\$19,624.20
Equipment Cost	\$40,050.00 Equ	uipment Tax @	0.0%	\$0.00		\$40,050.00
Subcontractors	\$30,660.00					\$30,660.00
DIRECT COST SURTOTAL S	\$264.076	-		*0	DIRECT COST SUBTOTALS	\$264.076

DIRECT COST SUBTOTALS

\$30,660.00

TOTAL SUBCONTRACTS

Additional Pay Item Notes :

The crew will open the engine side panels, and remove the nacelle access panels. Then they will disconnect the engine thermocouple leads at the terminal board. Before disconnecting any lines all fuel, oil, and hydraulic fluid valves are closed. All lines will be plug as they are disconnected to prevent entrance of foreign material. Remove the clamps securing the bleed-air ducts at the firewall. Then, disconnect the electrical connector plugs, engine breather and vent lines, and fuel, oil, and hydraulic lines. Disconnect the engine power lever and propeller control rods or cables. Remove the covers from the lift points, attach the sling, and remove slack from the cables using a suitable hoist. The sling must be adjusted to position. Remove the engine mount bolts then the engine is ready to be removed. Move the engine forward, out of the nacelle structure. Lower the engine into position on the stand, and secure it prior to removing the engine sling. The crew will cut into manageable pieces and the overhead crane with support of a crawler crane will load the turbines on to disposal trucks. Due to size of the loads it is expected to have extra hauling cost to account for lead cars and potential permits.

TOTAL LABOR

TOTAL EQUIPMENT

\$48,039.20

\$37,464.80

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.035	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of 150 Ton crane	Group	: D10			
Quantity	:	240,000.00 LBS					
Daily Production	:	30,000.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	8.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.43 per LBS	Probable Low	Cost Parameter	34,500.00	\$86,799	\$2.52
Total Cost	:	\$102,116	Probable High	Cost Parameter	24,000.00	\$122,539	\$5.11

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	8.0	10	80.00	L	\$58.87	incl. in rate	incl. in rate	\$4,709.76
Laborer	Active	3.00	8.0	10	240.00	L	\$51.07	incl. in rate	incl. in rate	\$12,257.52
Ironworkers	Active	3.00	8.0	10	240.00	L	\$78.16	incl. in rate	incl. in rate	\$18,757.20
Equipment Operator (medium)	Active	1.00	8.0	10	80.00	L	\$72.34	incl. in rate	incl. in rate	\$5,786.88
Equipment Operator (crane)	Active	1.00	8.0	10	80.00	L	\$81.60	incl. in rate	incl. in rate	\$6,527.84
Crawler Crane (130tn)	Active	1.00	8.0	10	80.00	E	\$262.91	incl. in rate	incl. in rate	\$21,032.80
Hydraulic Excavator (2.5cy)	Active	1.00	8.0	10	80.00	E	\$205.40	incl. in rate	incl. in rate	\$16,432.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$2,401.96	\$2,401.96

Equipment Hours

							TOTAL MATERIAL	\$2,401.9
JBCONTRACT COSTS								
Description	Quantity	Units	Notes /			Unit		Contract or Quote
			Company			Price		Amount
zardous waste cleanup/pickup/disposal, solid pickup,								
k material, maximum								
5% of total weight)	18.00	ton	1.000		18.00	\$595.00		\$10,710
auling Disposal Cost 30 Miles to Klamath County								
andfill	6.00	Loads	20 tons a load			\$300.00		\$1,800.
ssumption)	2,000.00	LF	1.000		2,000.00	\$0.85		\$1,700.
							TOTAL SUBCONTRACTS	\$14,210.
SUMMARY OF COSTS								
abor Cost	\$48,039.20	Labor Burden @		49.7%	\$0.00			\$48,039.
Material Cost	\$2,401.96	Material Tax @		0.0%	\$0.00			\$2,401
Equipment Cost	\$37,464.80	Equipment Tax @		0.0%	\$0.00			\$37,464.
Subcontractors	\$14,210.00							\$14,210.
DIRECT COST SUBTOTALS	\$102,116	-	·		\$0		DIRECT COST SUBTOTALS	\$102,1
Idial and Barriera Materia								, , ,
dditional Pay Item Notes :								

dditional Pay Item Notes :

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.036	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Compressed Air systems	Group	: D03			
Quantity	:	1,100.00 LBS	 '				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	0.147 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.88 per LBS	Probable Low (Cost Parameter	8,250.00	\$868	\$0.11
T-1-1 O1		#OOF	Deck - blo I Bak	O D	E 00E 00	64 000	60.04

Active Active Active	1.00 3.00 1.00	0.1 0.1	10 10	1.47	E	\$76.00	incl. in rate	incl. in rate	
Active		0.1	10			4	moi. III rate	inci. in rate	\$111.47
	1.00		10	4.40	L	\$51.07	incl. in rate	incl. in rate	\$224.72
Active		0.1	10	1.47	L	\$78.10	incl. in rate	incl. in rate	\$114.55
	1.00	0.1	10	1.47	L	\$69.19	incl. in rate	incl. in rate	\$101.48
Active	1.00	0.1	10	1.47	L	\$58.87	incl. in rate	incl. in rate	\$86.35
			Labor Hours	8.8				TOTAL LABOR	\$527.0
				Labor Hours Equipment Hours					

Description	Item	Order	Conversion	Order	Order	Material
sumables 5% labor (saw blades, drill bits, etc)	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
	1.00	LS	1.000	1.00	\$26.35	\$26.

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
auling Disposal Cost 30 Miles to Klamath County andfill	1.00	Loads	20 tons a load		\$300.00		\$300.
						TOTAL SUBCONTRACTS	\$300.
SUMMARY OF COSTS							
Labor Cost Material Cost Equipment Cost Subcontractors	\$26.35 N	abor Burden @ Material Tax @ Equipment Tax @		7% \$0.00 0% \$0.00 0% \$0.00			\$527.0 \$26.3 \$111.4 \$300.0
DIRECT COST SUBTOTALS	\$965			\$0		DIRECT COST SUBTOTALS	\$9

DIRECT COST SUBTOTALS

\$4,520

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.037	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of 2 - CO2 systems	Group : D03			
Quantity	:	6,600.00 LBS				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	0.9 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.68 per LBS	Probable Low Cost Parameter	8,250.00	\$4,068	\$0.49
Total Cost	:	\$4.520	Probable High Cost Parameter	6.000.00	\$5.423	\$0.90

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.9	10	9.00	L	\$58.87	incl. in rate	incl. in rate	\$529.85
Laborer	Active	2.00	0.9	10	18.00	L	\$51.07	incl. in rate	incl. in rate	\$919.31
Steelworker	Active	2.00	0.9	10	18.00	L	\$78.10	incl. in rate	incl. in rate	\$1,405.80
Equipment Operator (light)	Active	1.00	0.9	10	9.00	L	\$69.19	incl. in rate	incl. in rate	\$622.71
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.9	10	9.00	Е	\$63.11	incl. in rate	incl. in rate	\$567.99

L				
ſ	Labor Hours	54	TOTAL LABOR	\$3,477.67
L	Equipment Hours	9	TOTAL EQUIPMENT	\$567.99

MATERIAL COSTS								
Description	Item	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$173.88		\$17	73.88
						TOTAL MATERIAL	\$17	73.88

Description	Quantity	Units	Notes /			Unit			Contract or Quote
			Company			Price			Amount
auling Disposal Cost 30 Miles to Klamath County Landfill									
	1.00	Loads	20 tons a load				\$300.00		\$300.00
								TOTAL SUBCONTRACTS	\$300.00
SUMMARY OF COSTS									
Labor Cost	\$3,477.67 L	abor Burden @		49.7%	\$0.00				\$3,477.67
Material Cost	\$173.88	Material Tax @		0.0%	\$0.00				\$173.88
		· · · · ·		0.007	£0.00				\$567.99
Equipment Cost Subcontractors	\$567.99 \$300.00	Equipment Tax @		0.0%	\$0.00				\$300.00

DIRECT COST SUBTOTALS
Additional Pay Item Notes:

Used RS Means: Pipe, metal pipe, to 1-1/2* diam., selective demolition, 2430 LF of 1 1/2* pipes at 2.72 Lbs. Used 1 Forman, 2 Steelworkers to cut the pipes and 2 Laborers to load the pipes in the truck.

\$4,520

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.038	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Plant Water and Fire Protection	Group	: D05			
Quantity	:	3,100.00 LBS					
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.53 per LBS	Probable Low 0	Cost Parameter	8,250.00	\$1,469	\$0.18
Total Cost	:	\$1,632	Probable High	Cost Parameter	6,000.00	\$1,959	\$0.33

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Steelworker	Active	2.00	0.4	10	8.00	L	\$78.10	incl. in rate	incl. in rate	\$624.80
						_			_	
				Labor Hours	20				TOTAL LABOR	\$1,268.87
				Equipment Hours	0				TOTAL EQUIPMENT	\$0.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
onsumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$6 3.44	\$63.

Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
auling Disposal Cost 30 Miles to Klamath County andfill	1.00	Loads	20 tons a load		\$300.00	\$300.
					TOTAL	SUBCONTRACTS \$300.
SUMMARY OF COSTS						
Labor Cost Material Cost Equipment Cost Subcontractors	\$63.44	Labor Burden @ Material Tax @ Equipment Tax @	49.7% 0.0% 0.0%	\$0.00 \$0.00 \$0.00		\$1,268 \$63. \$0. \$300.
DIRECT COST SUBTOTALS	\$1,632			\$0	DIRECT C	COST SUBTOTALS \$1,6

TOTAL SUBCONTRACTS

\$783.44

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - JC Boyle Description Group : D09 10 hour shift Daily Production 7,500.00 LBS per 0.9 Project # 0.9 Days \$0.58 per LBS Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 8,625.00 Total Cost \$3,214 Unit Price Per LBS \$0.37 Work Days Unit Price \$3,781 Probable High Cost Parameter 6,000.00 \$4,537 \$0.76 **Total Cost**

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.9	10	9.00	L	\$58.87	incl. in rate	incl. in rate	\$529.85
Laborer	Active	2.00	0.9	10	18.00	L	\$51.07	incl. in rate	incl. in rate	\$919.31
Steelworker	Active	2.00	0.9	10	18.00	L	\$78.10	incl. in rate	incl. in rate	\$1,405.80
				Labor Hours	45				TOTAL LABOR	\$2,854.9
				Equipment Hours	0				TOTAL EQUIPMENT	\$0.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$142.75	\$142.75

TOTAL MATERIAL \$142.75

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum						
Hauling Disposal Cost 30 Miles to Klamath County	0.81	ton	1.000	0.81	\$595.00	\$483.44
Landfill	1.00	Loads	20 tons a load		\$300.00	\$300.00

SUMMARY OF COSTS						
Labor Cost	\$2,854.96	Labor Burden @	49.7%	\$0.00		\$2,854.96
Material Cost	\$142.75	Material Tax @	0.0%	\$0.00		\$142.75
Equipment Cost	\$0.00	Equipment Tax @	0.0%	\$0.00		\$0.00
Subcontractors	\$783.44					\$783.44
DIRECT COST SUBTOTALS	\$3,781	•		\$0	DIRECT COST SUBTOTALS	\$3.781

Additional Pay Item Notes :

Used RS Means: Pipe, metal pipe, to 1-1/2" diam., selective demolition, 2390 LF of 1 1/2" fire protection pipes at 2.72 Lbs. Used 1 Forman, 2 Steelworkers to cut the pipes and 3 Laborers to load the pipes in the truck. Calculated 58.6 miles from JC Boyle to Yreka Transfer Recycling.

Each hydropower facility has at least 150,000 gallons to 250,000 gallon of oil currently in use. This oil would have to be properly disposed of in the event of decommissioning. Oil removed from the turbines and other equipment, including transformer oil, would be either a waste oil or used oil, depending on prior use and contaminants found in the oil. Containerized oil containing contaminants such as solvents are commonly encountered at hydropower facilities. Oil sludge are common in tanks. Oil disposal would likely be costly due to the large volumes found at hydropower facilities and the ease of contamination with other regulated hazardous wastes.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.040	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Unwatering Piping	Group	: D05			
Quantity	:	33,000.00 LBS	_				
Daily Production	:	22,500.00 LBS per 10 hour shift	Project #	: 1			
Work Days	: 7	1.5 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.48 per LBS	Probable Low Co	ost Parameter	27,000.00	\$12,626	\$0.47
Total Cost	:	\$15,783	Probable High C	ost Parameter	16,875.00	\$19,728	\$1.17

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.5	10	15.00	L	\$58.87	incl. in rate	incl. in rate	\$883.08
Electrician	Active	1.00	1.5	10	15.00	L	\$55.80	incl. in rate	incl. in rate	\$837.05
Steelworker	Active	4.00	1.5	10	60.00	L	\$78.10	incl. in rate	incl. in rate	\$4,686.00
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.5	10	15.00	E	\$225.40	incl. in rate	incl. in rate	\$3,381.00
Laborer	Active	2.00	1.5	10	30.00	L	\$51.07	incl. in rate	incl. in rate	\$1,532.19
Gas Welding Machine	Active	4.00	1.5	10	60.00	E	\$2.88	incl. in rate	incl. in rate	\$172.62
Equipment Operator (medium)	Active	1.00	1.5	10	15.00	L	\$72.34	incl. in rate	incl. in rate	\$1,085.04
				Labor Hours	135				TOTAL LABOR	\$9,023.36
				Equipment Hours	75				TOTAL EQUIPMENT	\$3,553.62

MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$451.17		\$451.17
						TOTAL MATERIAL	\$451.17

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
lazardous waste cleanup/pickup/disposal, solid ickup, bulk material, maximum (25% from total reight)							
In the Disease Coat 20 Miles to Miles the Country	4.13	ton	1.000	4.13	\$595.00		\$2,454.3
Hauling Disposal Cost 30 Miles to Klamath County andfill	1.00	Loads	20 tons a load		\$300.00		\$300.0
						TOTAL SUBCONTRACTS	\$2,754.3
SUMMARY OF COSTS							
Labor Cost		abor Burden @	49.79				\$9,023.3
Material Cost Equipment Cost		Material Tax @ Equipment Tax @	0.09			<u> </u>	\$451. ² \$3,553.6
Subcontractors	\$2,754.38	quipment rax @	0.07	50.00		-	\$2,754.3
DIRECT COST SUBTOTALS	\$15,783			\$0		DIRECT COST SUBTOTALS	\$15,78
Additional Pay Item Notes :						_	
Additional Pay Item Notes :							

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - JC Boyle Description
Quantity
Daily Production
Work Days
Unit Price Group : D05 10,000.00 LBS per 1.0 Days \$0.53 per LBS 10 hour shift Project # : 1
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter LBS per 11,500.00 Total Cost \$4,467 Unit Price Per LBS \$0.39 Total Cost \$5,255 Probable High Cost Parameter 8,000.00 \$6,306 \$0.79

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.7
Laborer	Active	1.00	1.0	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.7
Steelworker	Active	1.00	1.0	10	10.00	L	\$78.10	incl. in rate	incl. in rate	\$781.0
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.0	10	10.00	E	\$225.40	incl. in rate	incl. in rate	\$2,254.0
Equipment Operator (light)	Active	1.00	1.0	10	10.00	L	\$69.19	incl. in rate	incl. in rate	\$691.9
Equipment Operator (light)	Active	1.00	1.0	10	10.00	L	\$69.19	incl. in rate	incl. in rate	

Labor Hours	40	TOTAL LABOR	\$2,572.35
Equipment Hours	10	TOTAL EQUIPMENT	\$2,254.00

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$128.62	\$ 128.62
						TOTAL MATERIAL \$128.62

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
lauling Disposal Cost 30 Miles to Klamath County andfill	1.00	Loads	20 tons a load		\$300.00		\$300.
						TOTAL SUBCONTRACTS	\$300.
SUMMARY OF COSTS							
Labor Cost Material Cost Equipment Cost Subcontractors	\$128.62	Labor Burden @ Material Tax @ Equipment Tax @	49.7 0.0 0.0	% \$0.00			\$2,572.3 \$128.1 \$2,254.1 \$300.1
DIRECT COST SUBTOTALS	\$5,255		<u> </u>	\$0		DIRECT COST SUBTOTALS	\$5,2

2750 LF of 1 " drainage pipes at 3.66 Lbs. Used 1 Loader and 1 Forman, 1 Steelworkers to cut the pipes and 1 Laborers to load the pipes in the truck.

TOTAL EQUIPMENT

\$247.29

PAY ITEM INFORMATION							
PAY ITEM NUMBER		1.042	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of 2-Oil Sump pumps	Group	: D05			
Quantity	:	2,000.00 LBS	 '				
Daily Production	:	7,500.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	0.3 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.03 per LBS	Probable Low C	ost Parameter	8,250.00	\$1,848	\$0.22
Total Cost		\$2,053	Probable High C	Cost Parameter	6.375.00	\$2,361	\$0.37

	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.62
Electrician	Active	1.00	0.3	10	3.00	L	\$55.80	incl. in rate	incl. in rate	\$167.41
Laborer	Active	2.00	0.3	10	6.00	L	\$51.07	incl. in rate	incl. in rate	\$306.44
Hydraulic Crane (17tn)	Active	1.00	0.3	10	3.00	E	\$82.43	incl. in rate	incl. in rate	\$247.29
Equipment Operator (medium)	Active	1.00	0.3	10	3.00	L	\$72.34	incl. in rate	incl. in rate	\$217.01

MATERIAL COSTS								
Description	Item	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$43.37			\$43.37
						TOTAL MATERIAL		\$43.37

Equipment Hours

Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (assumed weight)	Description	Quantity	Units	Notes / Company		Unit Price			Contract or Quote Amount
1.00 Loads 20 tons a load \$300.00 \$3	Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (assumed weight)								
1.00 Loads 20 tons a load \$300.00	outing Disposal Cost 20 Miles to Klamath County	1.00	ton	1.000	1.0	0	\$595.00		\$595
SUMMARY OF COSTS Labor Cost \$867.47 Labor Burden @ 49.7% \$0.00 Material Cost \$43.37 Material Tax @ 0.0% \$0.00 Equipment Cost \$247.29 Equipment Tax @ 0.0% \$0.00		1.00	Loads	20 tons a load			\$300.00		\$300.
Labor Cost \$867.47 Labor Burden @ 49.7% \$0.00 Material Cost \$43.37 Material Tax @ 0.0% \$0.00 Equipment Cost \$247.29 Equipment Tax @ 0.0% \$0.00								TOTAL SUBCONTRACTS	\$895.
Material Cost \$43.37 Material Tax @ 0.0% \$0.00 Equipment Cost \$247.29 Equipment Tax @ 0.0% \$0.00	SUMMARY OF COSTS								
Subcontractors \$895.00	Material Cost Equipment Cost	\$43.37 N	Material Tax @		0.0% \$0.0	0			\$867 \$43 \$247 \$895
DIRECT COST SUBTOTALS \$2,053 \$0 DIRECT COST SUBTOTALS diditional Pay Item Notes :		\$2,053			\$	0		DIRECT COST SUBTOTALS	\$2,

TOTAL MATERIAL

\$542.49

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.043	Project	: KRRP - JC Boyle			
		Remove & Dispose of Draft Tube Bulk Head Gates and Hoists at the					
Description	:	Powerhouse	Group	: D04			
Quantity	:	65,000.00 LBS					
Daily Production	:	31,250.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	2.1 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.36 per LBS	Probable Low	Cost Parameter	35,937.50	\$20,148	\$0.56
Total Cost	:	\$23,704	Probable High	Cost Parameter	23,437.50	\$29,630	\$1.26

Description	ldle	# in crew	Worked	Hours /day	Hours	L/E	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	2.1	10	21.00	L	\$58.87	incl. in rate	incl. in rate	\$1,236.31
Electrician	Active	1.00	2.1	10	21.00	L	\$55.80	incl. in rate	incl. in rate	\$1,171.86
Ironworkers	Active	2.00	2.1	10	42.00	L	\$78.16	incl. in rate	incl. in rate	\$3,282.51
Millwright	Active	2.00	2.1	10	42.00	L	\$82.04	incl. in rate	incl. in rate	\$3,445.60
Crawler Crane (270tn)	Active	1.00	2.1	10	21.00	Е	\$454.10	incl. in rate	incl. in rate	\$9,536.10
Gas Welding Machine	Active	4.00	2.1	10	84.00	E	\$2.88	incl. in rate	incl. in rate	\$241.67
Equipment Operator (crane)	Active	1.00	2.1	10	21.00	L	\$81.60	incl. in rate	incl. in rate	\$1,713.56
				Labor Hours	147				TOTAL LABOR	\$10,849.84
				Equipment Hours	105				TOTAL EQUIPMENT	\$9,777.77

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$542.49	\$542.49

Description	Quantity	Units	Notes /		Unit		Contract or Quote
•	-		Company		Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum							
	3.25	ton	1.000	3.25	\$595.00		\$1,933.75
Hauling Disposal Cost 30 Miles to Klamath County							
_andfill	2.00	Loads	20 tons a load		\$300.00		\$600.00
							\$0.00
							\$0.00
						TOTAL SUBCONTRACTS	\$2,533.75
SUMMARY OF COSTS							
Labor Cost		abor Burden @	49.7				\$10,849.84
Material Cost		Material Tax @	0.0				\$542.49
Equipment Cost		Equipment Tax @	0.0	\$0.00			\$9,777.77
Subcontractors	\$2,533.75						\$2,533.75
DIRECT COST SUBTOTALS	\$23,704			\$0		DIRECT COST SUBTOTALS	\$23,704
Additional Pay Item Notes :						-	
additional Fay item Notes :							

TOTAL EQUIPMENT

\$5,512.92

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.043a	Project	: KRRP - JC Boyle			
Description	:	Remove petroleum products from Mechanical Equipment	Group	: D09			
Quantity	:	2,700.00 GAL					
Daily Production	:	687.50 GAL per 10 hour shift	Project #	: 1			
Work Days	:	3.9 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$12.33 per GAL	Probable Low	Cost Parameter	790.63	\$28,286	\$35.78
Total Cost	:	\$33,278	Probable High	Cost Parameter	481.25	\$43,261	\$89.89

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.9	10	39.00	L	\$58.87	incl. in rate	incl. in rate	\$2,296.01
Electrician	Active	1.00	3.9	10	39.00	L	\$55.80	incl. in rate	incl. in rate	\$2,176.32
Laborer	Active	4.00	3.9	10	156.00	L	\$51.07	incl. in rate	incl. in rate	\$7,967.39
Pump, Centrifugal, 3"	Active	3.00	3.9	10	117.00	E	\$2.76	incl. in rate	incl. in rate	\$322.41
Truck Driver (heavy)	Active	1.00	3.9	10	39.00	L	\$75.72	incl. in rate	incl. in rate	\$2,953.24
Truck, Tractor (400hp)	Active	1.00	3.9	10	39.00	E	\$69.98	incl. in rate	incl. in rate	\$2,729.22
Equipment Operator (medium)	Active	1.00	3.9	10	39.00	L	\$72.34	incl. in rate	incl. in rate	\$2,821.10
Loader, FE Rubber Tire (3.5cy)	Active	1.00	3.9	10	39.00	E	\$63.11			\$2,461.29
			3.9	10	0.00	0	\$0.00			\$0.00
			3.9	10	0.00	0	\$0.00			\$0.00
			3.9	10	0.00	0	\$0.00			\$0.00
			3.9	10	0.00	0	\$0.00			\$0.00
						-				
				Labor Hours	312				TOTAL LABOR	\$18,214.05

MATERIAL COSTS								
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost	
Consumables 5% labor (filters, pads, etc)	1.00	LS	1.000	1.00	\$910.70			\$910.70
						TOTAL MATERIAL		\$910.70

Equipment Hours

Description	Quantity	Units	Notes / Company	Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment	32.00	hour	RSM Means 028120101260		\$270.00	\$8,640.0
NUMBER OF COSTS					TOTAL SUBCONTR	ACTS \$8,640.0
SUMMARY OF COSTS Labor Cost Material Cost Equipment Cost Subcontractors	\$910.70	Labor Burden @ Material Tax @ Equipment Tax @	49.7% 0.0% 0.0%	\$0.00 \$0.00 \$0.00		\$18,214.0 \$910.7 \$5,512.9; \$8,640.0
DIRECT COST SUBTOTALS Additional Pay Item Notes: The petroleum waste is saved in drums I Electrician to unplug the power and to				\$0 Forman, 4 Laborers to tak	DIRECT COST SUBTO	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.044	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Outdoor Vertical AC Generator, Unit 1: 53 MVA	Group	: D04			
Quantity	:	2.00 EA					
Daily Production	:	0.40 EA per 10 hour shift	Project #	: 1			
Work Days	:	5.0 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$52,105.28 per EA	Probable Low	Cost Parameter	0.46	\$88,579	\$192,562.97
Total Cost		\$104 211	Probable High	Cost Parameter	0.34	\$119.842	\$352 476 86

			Vertical AC Ge		Group	: D04				
Quantity :		00 EA		1 20.						
Daily Production : Work Days :	5.	DEA per Days	10 hour s	nift	Project # Estimator	: 1 : Mibao	la Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price :	\$52,105.28				Probable Low C			0.46	\$88,579	\$192,562.97
Total Cost :	\$104,21				Probable High			0.34	\$119,842	\$352,476.86
	, ,									, ,
REW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
rawler Crane (270tn)	Active	1.00	5.0	10	50.00	E	\$454.10	incl. in rate	incl. in rate	\$22,705
Electrician	Active	4.00	5.0	10	200.00	L	\$55.80	incl. in rate	incl. in rate	\$11,160
				10						
Equipment Operator (oiler)	Active	1.00	5.0		50.00	L	\$73.43	incl. in rate	incl. in rate	\$3,671
Equipment Operator (crane)	Active	1.00	5.0	10	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079
Steelworker	Active	5.00	5.0	10	250.00	L	\$78.10	incl. in rate	incl. in rate	\$19,525
oader, FE Rubber Tire (8.6cy)	Active	2.00	5.0	10	100.00	Е	\$225.40	incl. in rate	incl. in rate	\$22,540
Labor Foreman	Active	1.00	5.0	10	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943
Electrician Foreman	Active	1.00	5.0	10	50.00	L	\$55.80	incl. in rate	incl. in rate	\$2,790
Welder	Active	4.00	5.0	10	200.00	E	\$7.84	incl. in rate	incl. in rate	\$1,568
				Labor Hours	650				TOTAL LABOR	\$44,170
				Equipment Hours	350				TOTAL EQUIPMENT	\$46,813
ATERIAL COSTS										
ATERIAL COSTS Description	Item	Order		Conversion	Order		Order			Material
Description	Item Quantity	Order Unit		Conversion Factor / Waste	Order Quantity		Order Price			Material Cost
Description Insumables 10% labor (saw blades, drill bits,		Unit						.05		
ATERIAL COSTS Description onsumables 10% labor (saw blades, drill bits, c)	Quantity	Unit		Factor / Waste	Quantity		Price	.05		Cost
Description onsumables 10% labor (saw blades, drill bits,	Quantity	Unit		Factor / Waste	Quantity		Price	.05	TOTAL MATERIAL	Cost
Description onsumables 10% labor (saw blades, drill bits,	Quantity	Unit		Factor / Waste	Quantity		Price	.05	TOTAL MATERIAL	Cost \$4,417
Description onsumables 10% labor (saw blades, drill bits, :) JBCONTRACT COSTS	Quantity 1.00	Unit D LS		1.000	Quantity	Ual	Price \$4,417	.05	TOTAL MATERIAL	Cost \$4,417 \$4,417
Description nsumables 10% labor (saw blades, drill bits,)	Quantity	Unit		1.000 Notes /	Quantity	Uni	Price \$4,417	.05	TOTAL MATERIAL	\$4,417 \$4,417 \$4,417
Description onsumables 10% labor (saw blades, drill bits, c) UBCONTRACT COSTS Description	Quantity 1.00	Unit D LS		1.000	Quantity	Uni Pric	Price \$4,417		TOTAL MATERIAL	Cost \$4,417 \$4,417
Description onsumables 10% labor (saw blades, drill bits, c) JBCONTRACT COSTS Description sposal fee (for 115 tons) uuling Disposal Cost 30 Miles to Klamath	Quantity 1.00 Quantity	Units Units		Notes / Company	Quantity 1.00		Price \$4,417	.00	TOTAL MATERIAL	\$4,41 \$4,41 Contract or Quote Amount \$8,511
Description nsumables 10% labor (saw blades, drill bits,) DECONTRACT COSTS Description uposal fee (for 115 tons) uling Disposal Cost 30 Miles to Klamath	Quantity 1.00 Quantity	Unit Unit Units		1.000 Notes / Company	Quantity 1.00		Price \$4,417	.00	TOTAL MATERIAL	\$4,41 \$4,41 Contract or Quote Amount \$8,511
Description sumables 10% labor (saw blades, drill bits, BCONTRACT COSTS Description bosal fee (for 115 tons) ling Disposal Cost 30 Miles to Klamath	Quantity 1.00 Quantity	Units Units		Notes / Company	Quantity 1.00		Price \$4,417	.00	TOTAL MATERIAL	\$4,41 \$4,41 Contract or Quote Amount \$8,51
Description Insumables 10% labor (saw blades, drill bits,) DECONTRACT COSTS Description Quantity 1.00 Quantity	Units Units		Notes / Company	Quantity 1.00		Price \$4,417	.00		\$4,41 \$4,41 Contract or Quote Amount \$8,51	
Description onsumables 10% labor (saw blades, drill bits, c) JBCONTRACT COSTS Description sposal fee (for 115 tons) suling Disposal Cost 30 Miles to Klamath ounty Landfill JMMARY OF COSTS	Quantity 1.00 Quantity	Units Units Units Units	rden @	Notes / Company	1.00 115.00		Price \$4,417	.00		\$4,41 \$4,41 Contract or Quote Amount \$8,511 \$300
Description onsumables 10% labor (saw blades, drill bits, c) JBCONTRACT COSTS Description sposal fee (for 115 tons) ulting Disposal Cost 30 Miles to Klamath unty Landfill JMMARY OF COSTS abor Cost	Quantity 1.00 Quantity 118 1.00	Units Units Units Loads		Notes / Company 1.000 20 tons a load	1.00 1.00 \$0.00		Price \$4,417	.00		\$4,41 \$4,41 Contract or Quote Amount \$8,511 \$300 \$8,811
Description onsumables 10% labor (saw blades, drill bits, c)	Quantity 1.00 Quantity 110 \$44,170.56 \$4,417.05 \$46,813.00	Units Units Units Loads Loads Loads Labor Bu Material Equipme	Гах @	Notes / Company 1.000 20 tons a load	1.00 115.00		Price \$4,417	.00		Cost \$4,41' \$4,41' Contract or Quote Amount \$8,51(\$300 \$8,81(\$44,177 \$4,41' \$46,81'
Description onsumables 10% labor (saw blades, drill bits, c) DBCONTRACT COSTS Description sposal fee (for 115 tons) suling Disposal Cost 30 Miles to Klamath unity Landfill DMMARY OF COSTS abor Cost daterial Cost cquipment Cost	Quantity 1.00 Quantity 118 1.00 \$44,170.55	Units Units Units Loads Loads Loads Labor Bu Material Equipme	Гах @	Notes / Company 1.000 20 tons a load	1.00 1.00 \$0.00 \$0.00		Price \$4,417	.00		\$4,417 Contract or Quote Amount \$8,510 \$300 \$8,810 \$44,177 \$44,417
Description Onsumables 10% labor (saw blades, drill bits, c) UBCONTRACT COSTS Description Sposal fee (for 115 tons) Juling Disposal Cost 30 Miles to Klamath Juny Landfill UMMARY OF COSTS Labor Cost Material Cost	Quantity 1.00 Quantity 110 \$44,170.56 \$4,417.05 \$46,813.00	Units Units Loads Labor Bu Labor Bu Material 5 Equipmen	Гах @	Notes / Company 1.000 20 tons a load	1.00 1.00 \$0.00 \$0.00		Price \$4,417	.00		\$4,417

Yreka Transfer Recycling (back and forth). Total Weight 650,000 LBS; Heaviest lift around: 300,000 LBS.

TOTAL EQUIPMENT

TOTAL MATERIAL

\$7,651.15

\$1,404.44

PAY ITEM COST DETAIL WORKSHEET

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	2.00	1.6	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Electrician	Active	4.00	1.6	10	64.00	L	\$55.80	incl. in rate	incl. in rate	\$3,571.39
Laborer	Active	4.00	1.6	10	64.00	L	\$51.07	incl. in rate	incl. in rate	\$3,268.67
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.6	10	16.00	E	\$225.40	incl. in rate	incl. in rate	\$3,606.40
Hydraulic Crane (120tn)	Active	1.00	1.6	10	16.00	E	\$242.08	incl. in rate	incl. in rate	\$3,873.28
Welder	Active	1.00	1.6	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.44
Gas Welding Machine	Active	1.00	1.6	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Equipment Operator (crane)	Active	1.00	1.6	10	16.00	L	\$81.60	incl. in rate	incl. in rate	\$1,305.57

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$554.44	\$554.4
selective demolition, torch cutting, steel, 1" thick late (assumed qty)	1,000.00	LF	1.000	1,000.00	\$0.85	\$850.0

Equipment Hour

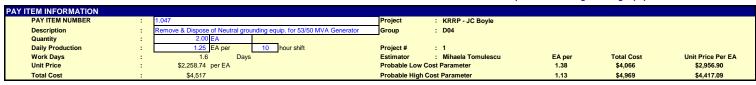
Description	Quantity	Units	Notes / Company		Init rice		Contract or Quote Amount
Hauling Disposal Cost 30 Miles to Klamath County Landfill	2.00	Loads	20 tons a load		\$300.00		\$600.00
						TOTAL SUBCONTRACTS	\$600.00
SUMMARY OF COSTS							
Labor Cost Material Cost Equipment Cost Subcontractors	\$1,404.44	Labor Burden @ Material Tax @ Equipment Tax @	49.7% 0.0% 0.0%	\$0.00			\$11,088.70 \$1,404.44 \$7,651.15 \$600.00
DIRECT COST SUBTOTALS Additional Pay Item Notes :	\$20,744			\$0		DIRECT COST SUBTOTALS	\$20,744

PAY ITEM INFORMATION							
PAY ITEM NUMBER		1.046	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Surge protection equip. for 53/50 MVA Generator	Group	: D04			
Quantity	:	2.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,718.83 per EA	Probable Low	Cost Parameter	1.38	\$10,294	\$7,486.47
Total Cost		\$11.438	Probable High	Cost Parameter	1.13	\$12.581	\$11.183.49

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	2.00	1.6	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Electrician	Active	2.00	1.6	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.6	10	16.00	E	\$225.40	incl. in rate	incl. in rate	\$3,606.40
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
				Labor Hours	112				TOTAL LABOR	\$6,363.10
				Equipment Hours	16				TOTAL EQUIPMENT	\$3,606.40

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$318.16		\$318.16
Selective demolition, torch cutting, steel, 1" thick							
plate (assumed qty)	1,000.00	LF	1.000	1,000.00	\$0.85		\$850.00
						TOTAL MATERIAL	\$1,168.16

Description	Quantity	Units	Notes / Company	Unit Price			Contract or Quote Amount
uling Disposal Cost 30 Miles to Klamath County ndfill	1.00	Loads	20 tons a load		\$300.00		\$300.0
						TOTAL SUBCONTRACTS	\$300.0
SUMMARY OF COSTS							
abor Cost faterial Cost equipment Cost Subcontractors	\$6,363.10 Lat \$1,168.16 Ma \$3,606.40 Eq \$300.00		49.79 0.09 0.09	\$0.00			\$6,363. \$1,168. \$3,606. \$300.
DIRECT COST SUBTOTALS	\$11,438			\$0		DIRECT COST SUBTOTALS	\$11,4



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
				•						
Electrician Foreman	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Ironworkers	Active	1.00	1.6	10	16.00	L	\$78.16	incl. in rate	incl. in rate	\$1,250.48
Laborer	Active	1.00	1.6	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Gas Welding Machine	Active	1.00	1.6	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Welder	Active	1.00	1.6	10	16.00	E	\$7.84	incl. in rate	incl. in rate	\$125.44
				Labor Hours	64				TOTAL LABOR	\$3,853.34
				Equipment Hours	32				TOTAL EQUIPMENT	\$171.47

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$192.67	\$192.67

TOTAL MATERIAL \$192.67

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
auling Disposal Cost 30 Miles to Klamath County ndfill	1.00	Loads	20 tons a load		\$300.00		\$300
CUMMARY OF COOTS						TOTAL SUBCONTRACTS	\$300.
SUMMARY OF COSTS Labor Cost Material Cost Equipment Cost Subcontractors	\$192.67	Labor Burden @ Material Tax @ Equipment Tax @		49.7% \$0.00 0.0% \$0.00 0.0% \$0.00			\$3,853 \$192 \$171 \$300
DIRECT COST SUBTOTALS	\$4,517			\$0		DIRECT COST SUBTOTALS	\$4,5

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.048	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Generator Switchgear, 15kV - (6 sections)	Group	: D04			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$14,212.64 per EA	Probable Low (Cost Parameter	1.44	\$12,081	\$8,404.00
Total Cost	:	\$14,213	Probable High	Cost Parameter	0.94	\$17,766	\$18,950.19

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	3.00	0.8	10	24.00	L	\$55.80	incl. in rate	incl. in rate	\$1,339.27
Electrician	Active	9.00	0.8	10	72.00	L	\$55.80	incl. in rate	incl. in rate	\$4,017.82
Laborer	Active	6.00	0.8	10	48.00	L	\$51.07	incl. in rate	incl. in rate	\$2,451.50
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	Е	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Hydraulic Crane (120tn)	Active	1.00	0.8	10	8.00	Е	\$242.08	incl. in rate	incl. in rate	\$1,936.64
Welder	Active	1.00	0.8	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.72
Gas Welding Machine	Active	1.00	0.8	10	8.00	E	\$2.88	incl. in rate	incl. in rate	\$23.02
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$81.60	incl. in rate	incl. in rate	\$652.78

MATERIAL COSTS									
Description	Item	Order	Conversion	Order	Order	Material			
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost			
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$452.00	\$452.00			

Equipment Hour

TOTAL MATERIAL \$452.00

TOTAL LABOR

TOTAL EQUIPMENT

\$9,040.06

\$3,825.58

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
Hazardous waste cleanup/pickup/disposal, solid			Company	Price		Amount
pickup, bulk material, maximum (assumed qty)						
Hauling Disposal Cost 30 Miles to Klamath County	1.00	ton	1.000	1.00	\$595.00	\$595.00
Landfill	1.00	Loads	20 tons a load		\$300.00	\$300.00

TOTAL SUBCONTRACTS \$895.00

SUMMARY OF COSTS					
Labor Cost	\$9,040.06 Labor Burden @	49.7%	\$0.00		\$9,040.06
Material Cost	\$452.00 Material Tax @	0.0%	\$0.00		\$452.00
Equipment Cost	\$3,825.58 Equipment Tax @	0.0%	\$0.00		\$3,825.58
Subcontractors	\$895.00				\$895.00
DIRECT COST SUBTOTALS	\$14,213		\$0	DIRECT COST SUBTOTALS	\$14,213

onal Pay Item Notes :

Used 3 Crews (2 sections each) formed of 1 Forman, 3 Electrician, 2 laborer to haul with the crane in the truck. Assumed containing hazardous waste that will be disposed at 85.6 miles away from the construction site. In normal circumstances, decontaminated residual components could be accepted at landfill sites but Polychlorinated biphenyl, otherwise known as PCB, is a synthetic chemical that is widely used for industrial and commercial use as dielectric fluid in transformers and capacitors because of its high resistance to decomposition, low electrical conductivity, low flammability and high heat capacity. Transformer repair, reconditioning and retro-filling facilities are the major industry sectors that contributes to the spread of PCB contamination. Types of PCB Wastes:
PCB wastes are discarded materials that contain PCB or have been contaminated with PCBs and that are without any commercial, industrial, or economic use. For the purpose of this Code of Practice, PCBs wastes are classified as follows: Liquid PCB wastes

PCB-based felectric fluids removed from transformers and other equipment

PCB-based heat transfer and hydraulic fluids Metallic solid wastes

PCB-based heat transfer and hydraulic fluids Metallic solid wastes

PCB-based heat transfer and hydraulic fluids Metallic solid wastes

PCB-based near transfer and hydraulic fluids Metallic solid wastes

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PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.049	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Station Service Switchgear, 600 volt - (5 sections)	Group	: D04			
Quantity	:	1.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	0.8 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$7,793.83 per EA	Probable Low	Cost Parameter	1.38	\$7,014	\$5,101.41
Total Cost	:	\$7.794	Probable High	h Cost Parameter	1.13	\$8.573	\$7.620.63

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	3.00	0.8	10	24.00	L	\$55.80	incl. in rate	incl. in rate	\$1,339.27
Electrician	Active	4.00	8.0	10	32.00	L	\$55.80	incl. in rate	incl. in rate	\$1,785.70
Laborer	Active	4.00	0.8	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Welder	Active	1.00	0.8	10	8.00	E	\$7.84	incl. in rate	incl. in rate	\$62.72
Gas Welding Machine	Active	1.00	0.8	10	8.00	E	\$2.88	incl. in rate	incl. in rate	\$23.02
				Labor Hours	96				TOTAL LABOR	\$5,337.99
				Equipment Hours	24				TOTAL EQUIPMENT	\$1,888.94

MATERIAL COSTS Description	Item	Order	Conversion	Order	Order		Material
·	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, et	1.00	LS	1.000	1.00	\$266.90	_	\$266.90
						TOTAL MATERIAL	\$266.90

							TOTAL MATERIAL	\$266.90
SUBCONTRACT COSTS								
Description	Quantity	Units	Notes / Company		Unit Price			Contract or Quote Amount
Hauling Disposal Cost 30 Miles to Klamath County Landfill	1.00	Loads	20 tons a load			\$300.00		\$300.00
							TOTAL SUBCONTRACTS	\$300.00
SUMMARY OF COSTS								
Labor Cost Material Cost Equipment Cost Subcontractors	\$266.90	Labor Burden @ Material Tax @ Equipment Tax @		0.0%	0.00 0.00 0.00			\$5,337.99 \$266.90 \$1,888.94 \$300.00
DIRECT COST SUBTOTALS	\$7,794				\$0		DIRECT COST SUBTOTALS	\$7,794
Additional Pay Item Notes : Used 3 Crews (2 sections each) form fromJC Boyle to Yreka Transfer Recy		ectrician, 1welder to cut, 2	laborer to haul with the loa	ader in the truck. Ass	sumed containing ha	azardous waste that will be dis	sposed . Calculated 85.6 miles	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.050	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of Unit and plant control switchboard	Group : D05			
Quantity	:	1.00 EA				
Daily Production	:	1.25 EA per 10 hour shift	Project # : 1			
Work Days	:	0.8 Days	Estimator : Mihaela Tomulesc	u EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$4,117.06 per EA	Probable Low Cost Parameter	1.38	\$3,705	\$2,694.80

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Electrician	Active	2.00	0.8	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.8	10	8.00	E	\$225.40	incl. in rate	incl. in rate	\$1,803.20
				Labor Hours	32				TOTAL LABOR	\$1,917.96
				Equipment Hours	8				TOTAL EQUIPMENT	\$1,803.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
umables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$95.90	\$6

Description	Quantity	Units	Notes / Company			Unit Price		Contract or Quote Amount
auling Disposal Cost 30 Miles to Klamath County Landfill								
	1.00	Loads	20 tons a load			\$300.00		\$300
							TOTAL SUBCONTRACTS	\$30
							TOTAL COLOCATION	\$30
UMMARY OF COSTS					_			
_abor Cost	\$1,917.96	Labor Burden @		49.7%	\$0.00			\$1,91
Material Cost	\$95.90	Material Tax @		0.0%	\$0.00			\$9
Equipment Cost		Equipment Tax @		0.0%	\$0.00			\$1,80
Subcontractors	\$300.00						_	\$300
DIRECT COST SUBTOTALS	\$4,117				\$0		DIRECT COST SUBTOTALS	\$4
dditional Pay Item Notes :								
							1	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.051	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose - Battery system	Group	: D05			
Quantity	:	1.00 EA					
Daily Production	:	0.63 EA per 10 hour shift	Project #	: 1			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$6,515.03 per EA	Probable Low	Cost Parameter	0.69	\$5,864	\$8,528.76
Total Cost	:	\$6,515	Probable High	Cost Parameter	0.56	\$7,167	\$12,740.49

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	\$0.00		\$941.95
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	\$0.00		\$892.85
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	\$0.00		\$1,634.34
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.6	10	16.00	E	\$63.11	\$64.23		\$1,009.76
Equipment Operator (light)	Active	1.00	1.6	10	16.00	L	\$69.19	\$0.00		\$1,107.04
Welder	Active	1.00	1.6	10	16.00	E	\$7.84	\$7.84		\$125.44
Gas Welding Machine	Active	1.00	1.6	10	16.00	E	\$2.88	\$2.88		\$46.03
				Labor Hours	80				TOTAL LABOR	\$4,576.18
				Equipment Hours	48				TOTAL EQUIPMENT	\$1,181.23

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 10% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$457.62	\$457.62

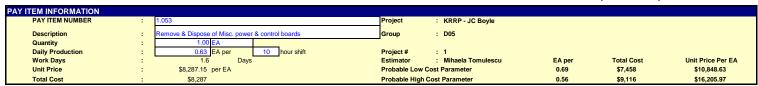
TOTAL MATERIAL \$457.62 SUBCONTRACT COSTS Quantity Units Unit Contract or Quote Company Price Amount Hauling Disposal Cost 30 Miles to Klamath County Landfill 1.00 Loads 20 tons a load \$300.00 \$300.00 \$0.00 **\$300.00** TOTAL SUBCONTRACTS SUMMARY OF COSTS \$4,576.18 \$457.62 \$1,181.23 \$300.00 abor Cost \$4,576.18 Labor Burden @ \$457.62 Material Tax @ \$0.00 \$0.00 Material Cost Equipment Cost Subcontractors \$1,181.23 \$300.00 Equipment Tax @ DIRECT COST SUBTOTALS \$6,515 \$0 DIRECT COST SUBTOTALS \$6,515 dditional Pay Item Notes :

PAY ITEM INFORMATION							
PAY ITEM NUMBER		1.052	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Raceways, Conduit and Cable	Group	: D05			
Quantity	:	1.00 EA	 '				
Daily Production	:	0.63 EA per 10 hour shift	Project #	: 1			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$9,226.89 per EA	Probable Low C	ost Parameter	0.69	\$8,304	\$12,078.84
Total Cost	:	\$9,227	Probable High C	Cost Parameter	0.56	\$10,150	\$18,043.69

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Loader, FE Rubber Tire (8.6cy)	Active	1.00	1.6	10	16.00	E	\$225.40	incl. in rate	incl. in rate	\$3,606.40
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
				Labor Hours	80				TOTAL LABOR	\$4,626.51
				Equipment Hours	16				TOTAL EQUIPMENT	\$3,606.40

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$693.98	\$693.98
						TOTAL MATERIAL \$693.98

	Quantity	Units	Notes / Company	Unit Price			Contract or Quote Amount
uling Disposal Cost 30 Miles to Klamath County dfill	1.00	Loads	20 tons a load		\$300.00		\$300.0
						TOTAL SUBCONTRACTS	\$300.
UMMARY OF COSTS							
abor Cost aterial Cost quipment Cost ubcontractors	\$693.98 N	abor Burden @ Material Tax @ Equipment Tax @	49.79 0.09 0.09	6 \$0.00			\$4,626. \$693. \$3,606. \$300.
IRECT COST SUBTOTALS	\$9,227			\$0		DIRECT COST SUBTOTALS	\$9,2



Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.9
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.8
aborer	Active	1.00	1.6	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.
oader, FE Rubber Tire (8.6cy)	Active	1.00	1.6	10	16.00	E	\$225.40	incl. in rate	incl. in rate	\$3,606.
quipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.
				Labor Hours	64				TOTAL LABOR	\$3,809
				Equipment Hours	16				TOTAL EQUIPMENT	\$3,606

Cost \$571.4
\$571.4

Description	Quantity	Jnits	Notes / Company			Unit Price			Contract or Quote Amount
Hauling Disposal Cost 30 Miles to Klamath County andfill	1.00 L	.oads	20 tons a load				\$300.00		\$300.0
								TOTAL SUBCONTRACTS	\$300.0
SUMMARY OF COSTS									
Labor Cost	\$3,809.34 Labo			49.7%	\$0.00			_	\$3,809.:
Material Cost Equipment Cost	\$571.40 Mate \$3,606.40 Equi			0.0%	\$0.00 \$0.00			_	\$571. \$3,606.
Subcontractors	\$3,000.40 Equi	omeni rax @		0.0%	\$0.00			_	\$3,000.2
DIRECT COST SUBTOTALS	\$8,287		L		\$0			DIRECT COST SUBTOTALS	\$8,28
Additional Pay Item Notes :								_	
additional Fay item Notes :									
Used 1 Forman, 1 Electrician, 1 Laborer ha		- 4							

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.054	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of 5 Gantry Crane motors - hoist (50Hp*), aux hoist	Group	: D10			
Quantity	:	1.00 EA					
Daily Production	:	6.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	0.2 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$850.72 per EA	Probable Low C	ost Parameter	6.88	\$766	\$111.37
Total Cost		\$851	Probable High C	Cost Parameter	5.00	\$1.021	\$204.17

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Crane (17tn)	Active	1.00	0.2	10	2.00	Е	\$82.43	\$81.52	Nate	\$164.86
Laborer	Active	2.00	0.2	10	4.00	L	\$51.07	\$0.00		\$204.29
Equipment Operator (crane)	Active	1.00	0.2	10	2.00	L	\$81.60	\$0.00		\$163.20
				Labor Hours	6				TOTAL LABOR	\$367.49
				Equipment Hours	2				TOTAL EQUIPMENT	\$164.86

MATERIAL COSTS									
Description	Item	Order	Conversion	Order	Order	Material			
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost			
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$18.37	\$18.37			

TOTAL MATERIAL \$18.37

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost 30 Miles to Klamath County Landfill	1.00	Loads	20 tons a load	\$300.00	\$300.00
					TOTAL SUBCONTRACTS \$300.00

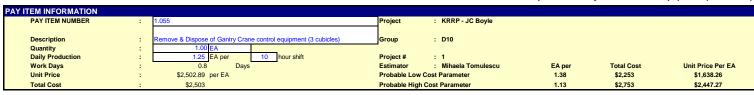
			TOTAL S	SUBCONTRACTS \$300.00
SUMMARY OF COSTS				
Labor Cost	\$367.49 Labor Burden @	49.7% \$0.0	0	\$367.49
Material Cost	\$18.37 Material Tax @	0.0% \$0.0	0	\$18.37
Equipment Cost	\$164.86 Equipment Tax @	0.0% \$0.0	0	\$164.86
Subcontractors	\$300.00			\$300.00
DIRECT COST SUBTOTALS	\$851	\$	DIRECT CO	OST SUBTOTALS \$851
Additional Pay Item Notes :				
Assumed removal of hoist, hoist tr	olley, gantry: 2 Laborers to load the overhead crane n	notors in the truck using the crane.		

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$73.50

\$300.00



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Crane (17tn)	Active	1.00	0.8	10	8.00	Е	\$82.43	\$81.52		\$659.44
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	\$0.00		\$817.17
Equipment Operator (crane)	Active	1.00	0.8	10	8.00	L	\$81.60	\$0.00		\$652.78
				Labor Hours	24				TOTAL LABOR	\$1,469.95
				Equipment Hours	8				TOTAL EQUIPMENT	\$659.44

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$73.50	\$73.50

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost 30 Miles to Klamath County					
Landfill	1.00	Loads	20 tons a load	\$300.00	\$300.00
					\$300.00 \$0.00
					\$0.00

		49.7% \$0.00	\$1,469
faterial Cost	\$73.50 Material Tax @	0.0% \$0.00	\$73
quipment Cost	\$659.44 Equipment Tax @	0.0% \$0.00	\$659
subcontractors	\$300.00		\$300
IRECT COST SUBTOTALS	\$2,503	\$0	DIRECT COST SUBTOTALS \$2,
ditional Pay Item Notes :			

TOTAL SUBCONTRACTS

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.056	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of Conduit and Cable	Group : D05			
Quantity	:	1.00 EA	_			
Daily Production	:	0.63 EA per 10 hour shift	Project # : 1			
Work Days	:	1.6 Days	Estimator : Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$5,957.11 per EA	Probable Low Cost Parameter	0.69	\$5,361	\$7,798.40
Total Cost	:	\$5,957	Probable High Cost Parameter	0.50	\$7,149	\$14,297.06

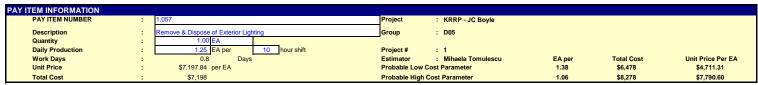
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Laborer	Active	4.00	1.6	10	64.00	L	\$51.07	\$0.00		\$3,268.67
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	\$0.00		\$1,157.38
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.6	10	16.00	E	\$63.11	\$64.23		\$1,009.76
		•		Labor Hours	80				TOTAL LABOR	\$4,426.05
				Equipment Hours	16				TOTAL EQUIPMENT	\$1,009.76

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$221.30	\$221.30

TOTAL MATERIAL \$221.30

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hauling Disposal Cost 30 Miles to Klamath County Landfill	1.00	Loads	20 tons a load	\$300.00	\$300.00

SUMMARY OF COSTS					
Labor Cost	\$4,426.05 Labor Burden @	49.7%	\$0.00		\$4,426.05
Material Cost	\$221.30 Material Tax @	0.0%	\$0.00		\$221.30
Equipment Cost	\$1,009.76 Equipment Tax @	0.0%	\$0.00		\$1,009.76
Subcontractors	\$300.00				\$300.00
DIRECT COST SUBTOTALS	\$5,957		\$0	DIRECT COST SUBTOTALS	\$5,957
Additional Pay Item Notes :					
Around 4000 LF of cable and conduit: 4 La	borers will load in the truck with the loader the	overhead crane cable.			



CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Electrician	Active	1.00	0.8	10	8.00	L	\$55.80	incl. in rate	incl. in rate	\$446.42
Hydraulic Crane (17tn)	Active	1.00	0.8	10	8.00	E	\$82.43	incl. in rate	incl. in rate	\$659.44
Equipment Operator (medium)	Active	1.00	0.8	10	8.00	L	\$72.34	incl. in rate	incl. in rate	\$578.69
Laborer	Active	2.00	0.8	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Hydraulic Excavator (1.5cy)	Active	1.00	0.8	10	8.00	E	\$140.73	incl. in rate	incl. in rate	\$1,125.84
Truck, Utility, with Man-Basket	Active	1.00	0.8	10	8.00	E	\$31.90	incl. in rate	incl. in rate	\$255.20
				Labor Hours	40				TOTAL LABOR	\$2,313.26
				Equipment Hours	24				TOTAL EQUIPMENT	\$2,040.48

Description	Item	Order	Conversion	Order	Order	Material
·	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc) Topsoil placement and grading, loam or topsoil,	1.00	LS	1.000	1.00	\$115.66	\$115.66
F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade						
	6.00	CY	1.000	6.00	\$4.74	\$28.44

Description	Quantity	Units	Notes /		Unit			Contract or Quote
			Company		Price			Amount
ne work - Rent per day juling Disposal Cost 30 Miles to Klamath County	0.80	days				\$3,000.00		\$2,400
ndfill	1.00	Loads	20 tons a load			\$300.00		\$300
							TOTAL SUBCONTRACTS	\$2,700
SUMMARY OF COSTS								
abor Cost	\$2,313.26 L	abor Burden @		49.7% \$0	.00			\$2,313
faterial Cost	\$144.10 N	Material Tax @		0.0%	.00			\$144
quipment Cost	\$2,040.48 E	quipment Tax @		0.0% \$0	.00			\$2,040
Subcontractors	\$2,700.00							\$2,700
DIRECT COST SUBTOTALS	\$7,198				\$0		DIRECT COST SUBTOTALS	\$7,1
Iditional Pay Item Notes :							•	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.058	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of Transmission Line No. 59	Group : D05			
Quantity	:	1.66 Mile				
Daily Production	:	0.63 Mile per 10 hour shift	Project # : 1			
Work Days	:	2.7 Days	Estimator : Mihaela Tomulescu	Mile per	Total Cost	Unit Price Per Mile
Unit Price	:	\$27,223.20 per Mile	Probable Low Cost Parameter	0.72	\$38,412	\$53,442.69
Total Cost	:	\$45,191	Probable High Cost Parameter	0.47	\$56,488	\$120,508.03

CREW COSTS										
Description	Active	# in	Days Worked	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew		/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	2.7	10	26.60	L	\$55.80	incl. in rate	incl. in rate	\$1,484.36
Electrician	Active	2.00	2.7	10	53.20	L	\$55.80	incl. in rate	incl. in rate	\$2,968.72
Truck, Utility, with Man-Basket	Active	2.00	2.7	10	53.20	E	\$31.90	incl. in rate	incl. in rate	\$1,697.08
Truck Driver (heavy)	Active	4.00	2.7	10	106.40	L	\$75.72	incl. in rate	incl. in rate	\$8,057.03
Laborer	Active	2.00	2.7	10	53.20	L	\$51.07	incl. in rate	incl. in rate	\$2,717.08
Hydraulic Excavator (2.5cy)	Active	1.00	2.7	10	26.60	E	\$205.40	incl. in rate	incl. in rate	\$5,463.64
Hydraulic Crane (80tn)	Active	1.00	2.7	10	26.60	E	\$197.66	incl. in rate	incl. in rate	\$5,257.76
Equipment Operator (crane)	Active	1.00	2.7	10	26.60	L	\$81.60	incl. in rate	incl. in rate	\$2,170.51
Equipment Operator (light)	Active	1.00	2.7	10	26.60	L	\$69.19	incl. in rate	incl. in rate	\$1,840.45
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.7	10	26.60	E	\$63.28	incl. in rate	incl. in rate	\$1,683.25
Truck, Flatbed (4x4, 10,000 gvw)	Active	3.00	2.7	10	79.80	E	\$27.09	incl. in rate	incl. in rate	\$2,161.78

· ·		_	
Labor Hours	292.6	TOTAL LABOR	\$19,238.16
Equipment Hours	212.8	TOTAL EQUIPMENT	\$16,263.51

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$961.91	\$961.91
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	31.00	СҮ	1.000	31.00	\$4.74	\$146.94

TOTAL MATERIAL \$1,108.85

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Rent trailer with cable pulling rig, for high voltage line work - Rent per day Hauling Disposal Cost 30 Miles to Klamath	2.66	days		\$3,000.00	\$7,980.00
County Landfill	2.00	Loads	20 tons a load	\$300.00	\$600.00
					TOTAL SUBCONTRACTS \$8 580 00

SUMMARY OF COSTS						
Labor Cost	\$19,238.16	Labor Burden @	49.7%	\$0.00		\$19,238.16
Material Cost	\$1,108.85	Material Tax @	0.0%	\$0.00		\$1,108.85
Equipment Cost	\$16,263.51	Equipment Tax @	0.0%	\$0.00		\$16,263.51
Subcontractors	\$8,580.00					\$8,580.00
DIRECT COST SUBTOTALS	\$45,191			\$0	DIRECT COST SUBTOTALS	\$45,191

Additional Pay Item Notes :

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 fulfilly truck access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission line poles or structures are commonly between 60 and 140 feet tall. There are several different kinds of transmission structures. Transmission structures can be constructed of metal or wood. They can be single-poled or multi-poled. They can be single-circuited, carrying one set of transmission interest or SMS we have "Communications transmission tower, radio tons real-self-support on young be an interest or self-supporting, wind load 70 mph basis wind speed, 120 high "338113110). Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 1.66 miles of overhead transmission we will have approximately 31 structures. In a reas-where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission in emust cross a street or slightly change direction, larger angle structures are disposed to Yreka recycling, 85.6 miles away. This estimate is made as the best

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$103.57

\$1,440.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.059	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose of Transmission Line No. 98	Group : D05			
Quantity	:	0.24 Mile				
Daily Production	:	0.63 Mile per 10 hour shift	Project # : 1			
Work Days	:	0.4 Days	Estimator : Mihaela Tomulescu	Mile per	Total Cost	Unit Price Per Mile
Unit Price	:	\$21,480.84 per Mile	Probable Low Cost Parameter	0.72	\$4,382	\$6,096.82
Total Cost		\$5,155	Probable High Cost Parameter	0.47	\$6 AAA	\$13 7A7 73

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	0.4	10	3.80	L	\$55.80	incl. in rate	incl. in rate	\$212.05
Electrician	Active	2.00	0.4	10	7.60	L	\$55.80	incl. in rate	incl. in rate	\$424.10
Truck, Utility, with Man-Basket	Active	2.00	0.4	10	7.60	E	\$31.90	incl. in rate	incl. in rate	\$242.44
Laborer	Active	2.00	0.4	10	7.60	L	\$51.07	incl. in rate	incl. in rate	\$388.15
Hydraulic Excavator (2.5cy)	Active	1.00	0.4	10	3.80	E	\$205.40	incl. in rate	incl. in rate	\$780.52
Hydraulic Crane (80tn)	Active	1.00	0.4	10	3.80	E	\$197.66	incl. in rate	incl. in rate	\$751.11
Equipment Operator (crane)	Active	1.00	0.4	10	3.80	L	\$81.60	incl. in rate	incl. in rate	\$310.07
Equipment Operator (light)	Active	1.00	0.4	10	3.80	L	\$69.19	incl. in rate	incl. in rate	\$262.92
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	0.4	10	3.80	E	\$63.28	incl. in rate	incl. in rate	\$240.46

,			
\$1,597.30	TOTAL LABOR	26.6	Labor Hours
\$2 014 53	TOTAL FOLIPMENT	19	Equipment Hours

MATERIAL COSTS						
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$79.87	\$79.87
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	5.00	CY	1.000	5.00	\$4.74	\$23.70

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount

Rent trailer with cable pulling rig, for high voltage line work - Rent per day 0.38 days \$3,000.00 \$1,140.00 Hauling Disposal Cost 30 Miles to Klamath County Landfill 1.00 Loads \$300.00 \$300.00

SUMMARY OF COSTS						
Labor Cost	\$1,597.30	Labor Burden @	49.7%	\$0.00		\$1,597.30
Material Cost	\$103.57	Material Tax @	0.0%	\$0.00		\$103.57
Equipment Cost	\$2,014.53	Equipment Tax @	0.0%	\$0.00		\$2,014.53
Subcontractors	\$1,440.00					\$1,440.00
DIRECT COST SUBTOTALS	\$5,155	_		\$0	DIRECT COST SUBTOTALS	\$5,155

Additional Pay Item Notes :

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substations, hydro plant and switchyard. Transmission in tructures are commonly between 6nd 140 feet tall. There are several different kinds of transmission structures. Transmission structures can be constructed of metal or wood, assumed we have wood. They can be single-poled or multi-poled. They can be single-poled or multi-poled with two sets of lines. Assumed based on RSMs we have "Communications transmission tower, radio towers self-supporting, wind load 70 mph basic wind speed, 120 high "G3311310). Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. Assumed average span between structures to be 275 feet so for 0.24 miles of overhead transmission we will have approximately 5 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly chang

TOTAL LABOR

TOTAL MATERIAL

\$11.181.12

\$706.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.060	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose of Transmission Line No. 58	Group	: D05			
Quantity	:	1.66 Mile					
Daily Production	:	0.63 Mile per 10 hour shift	Project #	: 1			
Work Days	:	2.7 Days	Estimator	: Mihaela Tomulescu	Mile per	Total Cost	Unit Price Per Mile
Unit Price	:	\$20,643.88 per Mile	Probable Low (Cost Parameter	0.72	\$29,129	\$40,526.63
Total Cost		\$24,260	Probable High	Cost Barameter	0.47	\$42.026	\$04 202 E0

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	2.7	10	26.60	L	\$55.80	incl. in rate	incl. in rate	\$1,484.3
Electrician	Active	2.00	2.7	10	53.20	L	\$55.80	incl. in rate	incl. in rate	\$2,968.7
Truck, Utility, with Man-Basket	Active	2.00	2.7	10	53.20	E	\$31.90	incl. in rate	incl. in rate	\$1,697.0
Laborer	Active	2.00	2.7	10	53.20	L	\$51.07	incl. in rate	incl. in rate	\$2,717.0
Hydraulic Excavator (2.5cy)	Active	1.00	2.7	10	26.60	E	\$205.40	incl. in rate	incl. in rate	\$5,463.6
Hydraulic Crane (80tn)	Active	1.00	2.7	10	26.60	E	\$197.66	incl. in rate	incl. in rate	\$5,257.7
Equipment Operator (crane)	Active	1.00	2.7	10	26.60	L	\$81.60	incl. in rate	incl. in rate	\$2,170.5
Equipment Operator (light)	Active	1.00	2.7	10	26.60	L	\$69.19	incl. in rate	incl. in rate	\$1,840.4
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	2.7	10	26.60	E	\$63.28	incl. in rate	incl. in rate	\$1,683.2

			Equipment Hours	133		TOTAL EQUIPMENT	\$14,101.72
MATERIAL COSTS							
Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$559.06		\$559.06
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	31.00	CY	1.000	31.00	\$4.74		\$146.94

186.2

Labor Hours

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Rent trailer with cable pulling rig, for high voltage line work - Rent per day Hauling Disposal Cost 30 Miles to Klamath County	2.66	days		\$3,000.00		\$7,980.00
Landfill	1.00	Loads		\$300.00		\$300.00
				Т	OTAL SUBCONTRACTS	\$8,280.00

SUMMARY OF COSTS				
abor Cost	\$11,181.12 Labor Burden @	49.7%	\$0.00	
Material Cost	\$706.00 Material Tax @	0.0%	\$0.00	
Equipment Cost	\$14,101.72 Equipment Tax @	0.0%	\$0.00	
Subcontractors	\$8,280.00			
DIRECT COST SUBTOTALS	\$34,269		\$0	DIRECT COST SUBTOTALS

When a transmission line is decommissioned and is not converted to another use, the decommissioning typically includes the removal of all infrastructure if it is no longer required, or has reached end-of-life conditions. Removed parts will be re-used, recycled or disposed. Production is based off of RSMs using Crew B-1C and B-3 (1 Forman, 2 laborer, 1 Excavator & 1 crane for lift, position and load in the truck, 1 Hydraulic rock-splitting/rock-drilling equipment to break equipment foundations and concrete for demo: 2 Electrician, 1 utility truck to access poles, string conductor, modify structure arms, provide guard structures, etc. Crews may be working simultaneously along the project alignment and substancians, hydro plant and switchyand. Transmission in lore poles or structures are constructed of metal or wood. They can be single-poled or multi-poled. They can be single-circuited, carrying one set of transmission lines or double-circuited with two sets of lines. Assumed based on RSMs we have "Communications transmission tower, radio towers self-supporting, wind load 70 mph basic wind speed, 120° high" (33811310). Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and nice loads. Assumed average span between structures to be 275 feets to for 1.66 miles of overhead transmission we will have approximately 31 structures. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or guy wires may be required. Poles with guy wires impact a much larger area. Angle structures are usually more than doublet he depends on the condition of the soils and the voltage of the line. Assumed the structures are disposed to Yreka recycling, 85.6 miles away. This estimate is made as the best AECOM assumption, as actual pricing would occur during the detailed en

dditional Pay Item Notes :

PAY ITEM INFORMATION KRRP - JC Boyle Project Description 1.061 Quantity Daily Production 1.061 150.00 CY per hour shift Project # Work Days Unit Price 1.061 10.7 Days Estimator : Eric Jones
Probable Low Cost Parameter CY per 165.00 **Total Cost** Unit Price Per CY 1.061 \$169.42 per CY \$245.495 \$1,487.85 Probable High Cost Parameter 120.00 \$327,327 \$2,727.72 **Total Cost** 1.061 \$272,772

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	10.7	20	214.00	L	\$58.87	incl. in rate	incl. in rate	\$12,598.61
Laborer	Active	4.00	10.7	20	856.00	L	\$51.07	incl. in rate	incl. in rate	\$43,718.49
Equipment Operator (medium)	Active	2.00	10.7	20	428.00	L	\$72.34	incl. in rate	incl. in rate	\$30,959.81
Truck Driver (heavy)	Active	1.00	8.4	20	167.80	L	\$66.92	incl. in rate	incl. in rate	\$11,229.85
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	8.4	20	167.80	E	\$117.28	incl. in rate	incl. in rate	\$19,679.58
Air Compressor 900 cfm	Active	1.00	10.7	20	214.00	E	\$38.87	incl. in rate	incl. in rate	\$8,317.95
Air Tool, Chipping Hammer	Active	4.00	10.7	20	856.00	E	\$1.64	incl. in rate	incl. in rate	\$1,403.01
Generator, Small Generator, 10 - 15 kW	Active	2.00	10.7	20	428.00	E	\$7.04	incl. in rate	incl. in rate	\$3,013.12
Hydraulic Excavator (5.0cy)	Active	1.00	10.7	20	214.00	E	\$276.50	incl. in rate	incl. in rate	\$59,171.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	10.7	20	214.00	E	\$63.28	incl. in rate	incl. in rate	\$13,541.92
Hydraulic Thumbs/Shear Attachment	Active	1.00	10.7	20	214.00	E	\$24.92	incl. in rate	incl. in rate	\$5,332.88
Hydraulic Excavator (2.5cy)	Active	1.00	10.7	20	214.00	Е	\$205.40	incl. in rate	incl. in rate	\$43,955.60

Labor Hours	1665.8	TOTAL LABOR	\$98,506.75
Equipment Hours	2521.8	TOTAL EQUIPMENT	\$154,415.07

WATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (10% labor)	1.00	LS	1.000	1.00	\$9,850.68	\$9,850.68

TOTAL MATERIAL \$9,850.68

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	2 EA	Cost Per Mob	\$5,000.00	\$10,000.00

TOTAL SUBCONTRACTS \$10,000.00

SUMMARY OF COSTS					
Labor Cost	\$98,506.75 Labor Burden @	0.0%			\$98,506.75
Material Cost	\$9,850.68 Material Tax @	0.00%	\$0.00		\$9,850.68
Equipment Cost	\$154,415.07 Equipment Tax @	0.00%	\$0.00		\$154,415.07
Subcontractors	\$10,000.00				\$10,000.00
DIRECT COST SUBTOTALS	\$272,772		\$0	DIRECT COST SUBTOTALS	\$272,772

The work is done by two 6-men crew (foreman, 4 laborers, and 2 equipment operators), one crew will be working a 10 hour day shift and one crew will be working a 10 hour night shift sharing the same equipment. Concrete demo is to be hauled to scour hole, Demolition is done using hydraulic chipping harmers and excavator mounted claw. Production is based on getting 125 CY demolished each shift, Over the 11 days dump trucks would haul 3 loads per shift. It is expected that material will fall into channel and will be scooped out with excavator. This item is scheduled to be double shifted 5 days a week with 2 each 10 hours shifts to complete the activity with in the time restrictions' established by the Oregon In Water Work Permit. (Note that if this was single shifted it would take 21 days).

	1.061 Remove	Intake Structure Concrete		
		Details		
High Cost Factors			Low Cost Factors	
Bad Weather	0%		No Bad Weather	0%
Gas Price Increase	10%		Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%		No Unforeseen Contaminated Mats/ Access Issues	0%
	20%			10%
Production Per Hour Ho	ure	Overall Production	7	
7.5	8		0	
	20			
Haul Notes		Excavator Loading Production per shift		
CY	1,610.00	CY per Hour		15
Swell Factor	60%	CY Bucket Size		2.50
Bulk CY	2576	Buckets Per Hour		6
Haul Vehicle 60% Capacity (2 tons per CY)	12	# of Excavators	1	1.00
# of Haul Vehicles	1	CY per Hour (5 CY Bucket)		15
Load Time (Includes Spot Time, Maneuver Time at Load site) (Minutes)	5	CY Per Hour Ideal Production Per 8 Hour Shift		95
Dump Time (Includes Spot Time, Maneuver Time at Dump site) (Minutes)	5	Efficient Compared to Ideal Production		16%
Haul Speed (Loaded MPH)	9	Inefficiencies Compared to Ideal Production		34%
Return Speed (Unloaded MPH)	15			
Haul Distance (Miles) Along Power Canal	2.58			
Shift Length (Hours)	20			
		Breaker Production		
Cyce Time		Hydraulic Hammer CY per Hour		7.5
Load Time (Load Time Minutes / 60mins)	0.08	# of Hammers	•	1.00
Haul Time (Haul Distance / Haul Speed)	0.29	CY per Hour		7.5
Dump Time (Dump Time Minutes / 60 Mins)	0.08	CY per Hour Back Check		7.5
Return Time (Haul Distance / Return Speed)		32CY per HR per 8hr shift (Ideal prod)		32
Hours Per Cycle Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		Efficient Compared to Ideal Production Inefficiencies Compared to Ideal Production		23%
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	0.78			1 70
Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	215			
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	167.7			
Loads Per Hour (Number of Cycles / Total Number of Haul Hours) Number of Haul Days	1.28 8			
Talliber of Field Buyo	#N/A			
	#N/A			
Speed Loaded Max Weight lbs of loaded 725	103,707.00			
Tons	52			
20lbs/Ton Rolling weigth	3			
Rolling Resitance (1% for each 20lbs/Ton) Slope Grade	3% 2%			
Siope Grade Total Resistance	2% 5%			
Max Gear per CAT Chart	6			
Max MPH	15			
Speed Empty Max Weight lbs of Empty 725	50,795.00			
Tons Empty	25			
20lbs/Ton Rolling weight Empty	1			
Rolling Resitance (1% per 20lbs/Ton) Empty	1%			
Average Slope Empty Total Resistance Empty	2%			
Max Gear per CAT Chart Empty	2% 3% 8			
Max MPH Empty	20			

Other Notes

Expected work sequence is to have excavator with breaker start demolition and have the excavator with bucket support the operation. Once enough material is ready to haul trucks will then be loaded and material will be dumped at the scour hole. Excavator is anticipated to be at demo location entire time to support breaker and ground crew. Concrete breakers are expected to run inefficient due to extra processing to remove reinforcement. Loading excavators are expected to run inefficient due to situating demo'd material, supporting ground crews, and separating reinforcement from concrete. (Ideal productions are based on equipment being used in best working conditions).

TOTAL LABOR

TOTAL EQUIPMENT

TOTAL MATERIAL

\$12,512.94

\$16,118.10

\$0.00

PAY ITEM COST DETAIL WORKSHEET

MATERIAL COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.062	Project :	KRRP - JC Boyle			
Description	:	Remove Fish Screen Building	Group :	D10			
Quantity	1.062	2,010.00 SF					
Daily Production	1.062	680.00 SF per 10 hour shift	Project # :	1			
Work Days	1.062	3.0 Days	Estimator :	Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.062	\$22.23 per SF	Probable Low Cos	t Parameter	714.00	\$42,449	\$59.45
Total Cost	1.062	\$44,683	Probable High Cos	t Parameter	612.00	\$49,151	\$80.31

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.0	10	30.00	L	\$58.87	incl. in rate	incl. in rate	\$1,766.16
Laborer	Active	4.00	3.0	10	120.00	L	\$51.07	incl. in rate	incl. in rate	\$6,128.7
Equipment Operator (medium)	Active	1.00	3.0	10	30.00	L	\$72.34	incl. in rate	incl. in rate	\$2,170.0
Equipment Operator (crane)	Active	1.00	3.0	10	30.00	L	\$81.60	incl. in rate	incl. in rate	\$2,447.9
Hydraulic Crane (80tn)	Active	1.00	3.0	10	30.00	Е	\$197.66	incl. in rate	incl. in rate	\$5,929.8
Hydraulic Excavator (5.0cy)	Active	1.00	3.0	10	30.00	E	\$276.50	incl. in rate	incl. in rate	\$8,295.0
Loader, FE Rubber Tire (3.5cy)	Active	1.00	3.0	10	30.00	E	\$63.11	incl. in rate	incl. in rate	\$1,893.3

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

Labor Hours
Equipment Hours

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	295	CY				\$0.00
Conversion CY to Tons (2 tons per CY)	148.00	tons	Klamath County LandFill	\$74.00		\$10,952.00
Hauling cost to landfill	17.00	Loads	18 CY per load	\$300.00		\$5,100.00
						\$0.00
					TOTAL SUBCONTRACTS	\$16,052.00

SUMMARY OF COSTS						
Labor Cost	\$12,512.94	Labor Burden @	0.0%			\$12,512.94
Material Cost	\$0.00	Material Tax @	0.00%	\$0.00		\$0.00
Equipment Cost	\$16,118.10	Equipment Tax @	0.00%	\$0.00		\$16,118.10
Subcontractors	\$16,052.00					\$16,052.00
DIRECT COST SUBTOTALS	\$44,683			\$0	DIRECT COST SUBTOTALS	\$44,683
Additional Pay Item Notes :						

Duration accounts for mobilization and demobilization, crane is to be used for flying material out of the demolition area as the excavator tears building down building, some of the building will need to be taken down by hand with crane support due to excavator not be able to reach certain sections. Due to the building being near water limiting access the production has been reduced when compared to other buildings being demolished.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.063	Project	: KRRP - JC Boyle			
Description	:	Remove 24" Steel Fish Discahrge Pipe	Group	: D03			
Quantity	:	37,978.00 LBS					
Daily Production	:	62,500.00 LBS per 20 hour shift	Project #	: 1			
Work Days	:	0.6 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.23 per LBS	Probable Low (Cost Parameter	71,875.00	\$7,279	\$0.10
Total Cost	:	\$8,563	Probable High	Cost Parameter	46,875.00	\$10,704	\$0.23

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.6	20	12.00	L	\$58.87	incl. in rate	incl. in rate	\$706.46
Laborer	Active	1.00	0.6	20	12.00	L	\$51.07	incl. in rate	incl. in rate	\$612.88
Steelworker	Active	1.00	0.6	20	12.00	L	\$78.10	incl. in rate	incl. in rate	\$937.20
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.6	20	12.00	E	\$225.40	incl. in rate	incl. in rate	\$2,704.80
Equipment Operator (light)	Active	1.00	0.6	20	12.00	L	\$69.19	incl. in rate	incl. in rate	\$830.28
Hydraulic Crane (17tn)	Active	1.00	0.6	20	12.00	E	\$82.43	incl. in rate	incl. in rate	\$989.16
Equipment Operator (crane)	Active	1.00	0.6	20	12.00	L	\$81.60	incl. in rate	incl. in rate	\$979.18
				Labor Hours	60				TOTAL LABOR	\$4,066.00
				Equipment Hours	24				TOTAL EQUIPMENT	\$3,693.96

WATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, et	1.00	LS	1.000	1.00	\$203.30	\$203.30
						TOTAL MATERIAL

Description	Quantity	Units	Notes / Company	Unit Price			Contract or Quote Amount
dauling Disposal Cost 30 Miles to Klamath county Landfill	2.00	Loads			\$300.00		\$600.00
						TOTAL SUBCONTRACTS	\$600.0
SUMMARY OF COSTS							
Labor Cost Material Cost Equipment Cost	\$203.30	Labor Burden @ Material Tax @ Equipment Tax @	49.7% 0.0% 0.0%	\$0.00 \$0.00 \$0.00			\$4,066.0 \$203.3 \$3,693.9 \$600.0
Subcontractors							

:	1.064	Project : KRRP - JC Boyle			
:	Remove Concrete Items associated with the 14-ft-diameter Steel Pipe	Group : D03			
1.064	1,100.00 CY				
1.064	128.00 CY per 10 hour shift	Project # : 1			
1.064	8.6 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
1.064	\$111.58 per CY	Probable Low Cost Parameter	147.20	\$104,329	\$708.76
1.064	\$122,740	Probable High Cost Parameter	108.80	\$141,151	\$1,297.35
	1.064 1.064 1.064 1.064	: Remove Concrete Items associated with the 14-ft-diameter Steel Pipe 1.064 1,100.00 CY 1.064 128.00 CY per 10 hour shift 1.064 \$111.58 per CY	: Remove Concrete Items associated with the 14-ft-diameter Steel Pipe	Remove Concrete Items associated with the 14-ft-diameter Steel Pipe	: Remove Concrete Items associated with the 14-ft-diameter Steel Pipe Group : D03 1.064 1,100.00 CY CY 1.064 128.00 CY per 10 hour shift Project # : 1 1.064 8.6 Days Estimator : Eric Jones CY per Total Cost 1.064 \$111.58 per CY Probable Low Cost Parameter 147.20 \$104,329

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	8.6	10	86.00	L	\$58.87	incl. in rate	incl. in rate	\$5,062.99
Laborer	Active	3.00	8.6	10	258.00	L	\$51.07	incl. in rate	incl. in rate	\$13,176.83
Equipment Operator (medium)	Active	2.00	8.6	10	172.00	L.	\$72.34	incl. in rate	incl. in rate	\$12,441.79
Truck Driver (heavy)	Active	1.00	9.7	10	97.02	L.	\$66.92	incl. in rate	incl. in rate	\$6,492.97
Air Compressor 600 cfm	Active	1.00	8.6	10	86.00	E	\$21.74	incl. in rate	incl. in rate	\$1,869.55
Air Tool, Chipping Hammer	Active	1.00	8.6	10	86.00	E	\$1.64	incl. in rate	incl. in rate	\$140.96
Acetylene Torches	Active	1.00	8.6	10	86.00	E	\$0.44	incl. in rate	incl. in rate	\$37.84
Hydraulic Excavator (5.0cy)	Active	1.00	8.6	10	86.00	E	\$276.50	incl. in rate	incl. in rate	\$23,779.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	8.6	10	86.00	E	\$63.28	incl. in rate	incl. in rate	\$5,442.08
Hydraulic Excavator (2.5cy)	Active	1.00	8.6	10	86.00	E	\$205.40	incl. in rate	incl. in rate	\$17,664.40
Loader, FE Rubber Tire (5.25cy)	Active	1.00	8.6	10	86.00	E	\$76.00	incl. in rate	incl. in rate	\$6,536.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	9.7	10	97.02	Е	\$117.28	incl. in rate	incl. in rate	\$11,378.51
Acetylene Torches Hydraulic Excavator (5.0cy) Hydraulic Impact Breaker Attachment (5k+ ft-lb) Hydraulic Excavator (2.5cy) Loader, FE Rubber Tire (5.25cy)	Active Active Active Active	1.00 1.00 1.00 1.00 1.00	8.6 8.6 8.6 8.6	10 10 10 10 10	86.00 86.00 86.00 86.00	E E E	\$0.44 \$276.50 \$63.28 \$205.40 \$76.00	incl. in rate incl. in rate incl. in rate incl. in rate incl. in rate	incl. in rate incl. in rate incl. in rate incl. in rate incl. in rate	

Labor Hours 613.02 TOTAL LABOR \$37,			_,	
	Labor Hours	613.02	TOTAL LABOR	\$37,174.58
Equipment Hours 699.02 TOTAL EQUIPMENT \$66,1	Equipment Hours	699.02	TOTAL EQUIPMENT	\$66,848.33

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (10% labor)	1.00	LS	1.000	1.00	\$3,717.46	\$3,717.46

TOTAL MATERIAL \$3,717.46 SUBCONTRACT COSTS Unit Price \$15,000.0 Contract or Quote Company Amount \$15,000.00

			TOTAL SUBCONTRACTS	\$15,000.00
SUMMARY OF COSTS				
Labor Cost	\$37,174.58 Labor Burden @	0.0%		\$37,174.58
Material Cost	\$3,717.46 Material Tax @	0.00% \$0.00		\$3,717.46
Equipment Cost	\$66,848.33 Equipment Tax @	0.00% \$0.00		\$66,848.33
Subcontractors	\$15,000.00			\$15,000.00
DIRECT COST SUBTOTALS	\$122,740	\$0	DIRECT COST SUBTOTALS	\$122,740
Additional Pay Item Notes :				

		1.064 Re	move Concrete Items associated with the 14-ft-diameter Steel Pipe		
			Details		
High Cost Factors				Low Cost Factors	
Bad Weather		0%		No Bad Weather	0%
Gas Price Increase		10%		No Bad Weather Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues		5%		No Unforeseen Contaminated Mats/ Access Issues	5%
		15%			15%
CY Per Hour Demolished	Hou 32	rs 8	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production 40%	102.40
	32	10		40%	128.00
Haul Notes			Excavator Loading Production per shift		
CY			CY per Hour		18.18
Swell Factor		60%	CY Bucket Size		2.50
Bulk CY			Buckets Per Hour		7
Haul Vehicle 60% Capacity (2 tons per CY)			# of Excavators		1.00
# of Haul Vehicles			CY per Hour (2.5 CY Bucket)		18
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)			CY Per Hour Ideal Production Per 8 Hour Shift		95
Dump Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)			Efficient Compared to Ideal Production		19%
Haul Speed (Loaded MPH)			Inefficiencies Compared to Ideal Production		81%
Return Speed (Unloaded MPH)		16	membericles compared to ideal Froduction		0178
Haul Distance (Miles) Along Power Canal					
Shift Length (Hours)		10			
Sint Length (Hours)		10			
Cycle Time			Breaker Production		
Load Time (Load Time Minutes / 60mins)			Hydraulic Hammer CY per Hour		12.8
Haul Time (Haul Distance / Haul Speed)			# of Hammers		1.00
Dump Time (Dump Time Minutes / 60 Mins)			CY per Hour		12.8
Return Time (Haul Distance / Return Speed)		0.13	CY per Hour Back Check		12.8
Hours Per Cycle Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT)		0.46 70%	32CY per HR per 8hr shift (Ideal prod) Efficient Compared to Ideal Production		32 40%
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)			Inefficiencies Compared to Ideal Production		60%
Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)		147			
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours)		97.02 1.52			
Number of Haul Days		9.702			
CAT 725 Articulated Truck					
Speed Loaded	Max Weight lbs. of loaded 725	103,707.00			
	Tons	52			
	20lbs/Ton Rolling weight	3			
	Rolling Resistance (1% for each 20lbs/Ton) Average Slope	3% 5%			
	Total Resistance	8%			
	Max Gear per CAT Chart	3			
and the second s	Max MPH	14			
Speed Empty	Max Weight lbs. of Empty 725	50,795.00			
	Tons Empty	25			
	20lbs/Ton Rolling weight Empty	1			
	Rolling Resitance (1% per 20lbs/Ton) Empty	1%			
	Average Slope Empty	5%			
	Total Resistance Empty	5% 6% 4			
	Max Gear per CAT Chart Empty Max MPH Empty	4 25			
	max mr il Empty				

ther Notes

This activity is to demind the concrete suppreprise for the 14° pensions
TOTAL LABOR

TOTAL EQUIPMENT

\$994,456.43

\$1,600,720.13

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.065	Project : KRRP - JC Boyle			
Description	:	Remove Open Concrete Flume	Group : D07			
Quantity	1.065	26,300.00 CY				
Daily Production	1.065	300.00 CY per 10 hour shift	Project # : 1			
Work Days	1.065	87.7 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.065	\$106.26 per CY	Probable Low Cost Parameter	330.00	\$2,515,160	\$7,621.70
Total Cost	1.065	\$2,794,622	Probable High Cost Parameter	240.00	\$3.353.547	\$13.973.11

Active	0.00		/day	Hours		Rate	Cost	Rate	Cost
	3.00	87.7	10	2,631.00	L	\$58.87	incl. in rate	incl. in rate	\$154,892.23
Active	6.00	87.7	10	5,262.00	L	\$51.07	incl. in rate	incl. in rate	\$268,746.13
Active	7.00	87.7	10	6,139.00	L	\$72.34	incl. in rate	incl. in rate	\$444,070.7
Active	3.00	63.1	10	1,893.90	L	\$66.92	incl. in rate	incl. in rate	\$126,747.3
Active	3.00	87.7	10	2,631.00	E	\$21.74	incl. in rate	incl. in rate	\$57,195.10
Active	3.00	87.7	10	2,631.00	E	\$1.64	incl. in rate	incl. in rate	\$4,312.30
Active	3.00	87.7	10	2,631.00	E	\$7.04	incl. in rate	incl. in rate	\$18,522.24
Active	6.00	87.7	10	5,262.00	E	\$205.40	incl. in rate	incl. in rate	\$1,080,814.80
Active	3.00	87.7	10	2,631.00	E	\$36.81	incl. in rate	incl. in rate	\$96,847.1
Active	3.00	87.7	10	2,631.00	E	\$24.92	incl. in rate	incl. in rate	\$65,564.52
Active	1.00	87.7	10	877.00	Е	\$63.11	incl. in rate	incl. in rate	\$55,347.4
Active	3.00	63.1	10	1 893 90	F	\$117.28	incl in rate	incl in rate	\$222,116.5
Adave	3.00	00.1	10	1,030.30		ψ117.20	inoi. irrate	ilioi. Il l'acc	ΨΕΣΣ, 110.0·
	Active Active Active Active Active Active Active	Active 3.00 Active 3.00 Active 3.00 Active 3.00 Active 6.00 Active 3.00 Active 3.00 Active 1.00	Active 3.00 63.1 Active 3.00 87.7 Active 3.00 87.7 Active 3.00 87.7 Active 6.00 87.7 Active 3.00 87.7 Active 3.00 87.7 Active 3.00 87.7 Active 1.00 87.7	Active 3.00 63.1 10 Active 3.00 87.7 10 Active 3.00 87.7 10 Active 3.00 87.7 10 Active 6.00 87.7 10 Active 3.00 87.7 10 Active 3.00 87.7 10 Active 3.00 87.7 10 Active 1.00 87.7 10	Active 3.00 63.1 10 1,893.90 Active 3.00 87.7 10 2,631.00 Active 3.00 87.7 10 2,631.00 Active 3.00 87.7 10 2,631.00 Active 6.00 87.7 10 5,262.00 Active 3.00 87.7 10 2,631.00 Active 3.00 87.7 10 2,631.00 Active 1.00 87.7 10 877.00	Active 3.00 63.1 10 1,893.90 L Active 3.00 87.7 10 2,631.00 E Active 3.00 87.7 10 2,631.00 E Active 3.00 87.7 10 2,631.00 E Active 6.00 87.7 10 2,631.00 E Active 3.00 87.7 10 2,631.00 E Active 3.00 87.7 10 2,631.00 E Active 1.00 87.7 10 877.00 E	Active 3.00 63.1 10 1,893.90 L \$66.92 Active 3.00 87.7 10 2,631.00 E \$21.74 Active 3.00 87.7 10 2,631.00 E \$1.64 Active 3.00 87.7 10 2,631.00 E \$7.04 Active 3.00 87.7 10 5,262.00 E \$205.40 Active 3.00 87.7 10 2,631.00 E \$36.81 Active 3.00 87.7 10 2,631.00 E \$24.92 Active 1.00 87.7 10 877.00 E \$63.11	Active 3.00 63.1 10 1,893.90 L \$66.92 incl. in rate Active 3.00 87.7 10 2,631.00 E \$21.74 incl. in rate Active 3.00 87.7 10 2,631.00 E \$7.04 incl. in rate Active 3.00 87.7 10 2,631.00 E \$205.40 incl. in rate Active 3.00 87.7 10 2,631.00 E \$36.81 incl. in rate Active 3.00 87.7 10 2,631.00 E \$24.92 incl. in rate Active 3.00 87.7 10 2,631.00 E \$24.92 incl. in rate Active 1.00 87.7 10 877.00 E \$63.11 incl. in rate	Active 3.00 63.1 10 1,893.90 L \$66.92 incl. in rate incl. in rate Active 3.00 87.7 10 2,631.00 E \$1.64 incl. in rate incl. in rate Active 3.00 87.7 10 2,631.00 E \$7.04 incl. in rate incl. in rate Active 6.00 87.7 10 5,262.00 E \$205.40 incl. in rate incl. in rate Active 3.00 87.7 10 2,631.00 E \$36.81 incl. in rate incl. in rate Active 3.00 87.7 10 2,631.00 E \$36.81 incl. in rate incl. in rate Active 3.00 87.7 10 2,631.00 E \$24.92 incl. in rate incl. in rate Active 1.00 87.7 10 877.00 E \$63.11 incl. in rate incl. in rate

MATERIAL COSTS										
Description	Item	Order	Conversion	Order	Order	Material				
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost				
						\$0.00				
Consumables (10% labor)	1.00	LS	1.000	1.00	\$99,445.64	\$99,445.64				

Labor Hours

15925.9

21187.9

TOTAL MATERIAL \$99,445.64

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Concrete Saw Cutting	1 AL	Allowance	\$100,000.00	\$100,000.00

TOTAL SUBCONTRACTS \$100,000.00

 SUMMARY OF COSTS

 Labor Cost
 \$994,456.43
 Labor Burden @
 0.0%
 \$994,456.43

 Material Cost
 \$99,445.64
 Material Tax @
 0.00%
 \$0.00

 Equipment Cost
 \$1,600,720.13
 \$0.00%
 \$0.00

 Subcontractors
 \$100,000.00
 \$0.00
 \$1,000,720.13

 DIRECT COST SUBTOTALS
 \$2,794,622
 \$0
 DIRECT COST SUBTOTALS
 \$2,794,622

See Addition Notes for expected operation coordination

## Will State Design (1997) 1997		1.065 Remove Open Concrete Flume Details Output Details									
18 Proto Proton 18 Proto Proton 18 Proto P	High Cost Factors				Low Cost Factors						
Marie Property P	Bad Weather				No Bad Weather						
Part	Gas Price Increase										
Second S	Unforeseen Contaminated Mats/ Access Issues				No Unforeseen Contaminated Mats/ Access Issues						
1			20%			10%					
Les Notes 1 1982 1982	Production Per Hour	Hot	irs	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production						
State Stat		60	8								
March 1985			10		50%	300.00					
March 1985											
Marche 1985	Haul Notes										
Marched (1906) Company (1906) Comp	CY										
18 18 18 18 18 18 18 18	Swell Factor										
of lased Volchicks of Team (Uniforcity Sept Time, Manever Time at Load size) (Bifuncts) ump Time (Portlacks Sept Time, Manever Time at Load size) (Bifuncts) ump Time (Portlacks Sept Time, Manever Time at Load size) (Bifuncts) ump Sept (Loaded BPF)	Bulk CY					9					
And Time (Declades Spot Time, Manover Time at Load sink) (Minuser) 5 5 5 5 5 5 5 5 5	Haul Vehicle 60% Capacity (2 tons per CY)		12	# of Excavators		6.00					
used Time (Includes Sport Time, Menorever Time at Dump pain) (Minores)	# of Haul Vehicles		3	CY per Hour (5 CY Bucket)							
And Speed (Loaded MPh)	Load Time (Includes Spot Time, Maneuver Time at Load site) (Minutes)		3	CY Per Hour Ideal Production Per 8 Hour Shift		95					
State Stat	Dump Time (Includes Spot Time, Maneuver Time at Dump site) (Minutes)		3	Efficient Compared to Ideal Production		4%					
And Distance (Mitter) Along Power Canal his Montany (Mi	Haul Speed (Loaded MPH)		10	Inefficiencies Compared to Ideal Production		96%					
Part	Return Speed (Unloaded MPH)		15								
Section Sect	Haul Distance (Miles) Along Power Canal		2								
Section Sect	Shift Length (Hours)		10								
Mar Weight lbs of loaded Prior of Protein Depart of Heat Houring (Y per Hour last Time (Auto-Dissance (I had posses) and the Control Dissance (I had posses) and the											
Real Files Pass Description Pass Description Pass Description Descript	Cyce Time			Breaker Production							
### Time (pump Time (p	Load Time (Load Time Minutes / 60mins)		0.05	Hydraulic Hammer CY per Hour		30					
### Time (pump Time (p	Haul Time (Haul Distance / Haul Speed)		0.20	# of Hammers		3.00					
Settor Time found into transposed 10 10 10 10 10 10 10 1											
Course Per Cycle House a Resolutions, Cathon Breads, ECT)											
clusal House Per Cycle prouses per cycles (Protice per passe) 0.54 unabber of Dylesia (Manuer Cycles (Protice per passe) 631.66 coal Number of Apstual (Cycles (Protice per passe) 631.66 coal SP House of Cycles (Protice per passe) 631.66 coal SP House of Cycles (Protice per passe) 631.66 coal SP House of Cycles (Protice per passe) 631.66 peed Loaded Max Weight libs of loaded 715 8N/A Tons 52 200bs/Fon Rolling Resistance (1% for each 200bs/Fon Rolling Resistance) 5 Kas Water per CAT Chart 6 For Empty 8N/A Weight lib of Empty 3 8N/A peed Empty Max Weight lib of Empty 3 8N/A Rolling Resistance (1% per zould Fon Rolling Coal Fon Rolling											
cotal Number of Natur Hours (Antau Cycles House or Cycles) 63.26 coads Per Hour Premient or Cycles / Total Number of Haul Hours) 63.26 peed Loaded Max Weight los of loaded *Y5 8/A peed Loaded Max Weight los of loaded *Y5 8/A Rolling Resistance (1% for each 200bs/Ton Rolling weight) 3 Rolling Resistance (1% for each 200bs/Ton Rolling weight) 3 Slope orde 2% Total Resistance 5% Max Weight los of Empty 7 8/A peed Empty Max Weight los of Empty 4 Rolling Resistance (1% per coad-for) Empty 2% Rolling Resistance (1% per coad-for) Empty 1 Rolling Resistance (1% per coad-for) Empty 2% Rolling Resistance (1% per coad-for) Empty 1 Rolling Resistance (1% per coad-for) Empty 2% Roll Resistance (1% per coad-f	Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)										
adas Per Nour Reumber of Local Number of Hour Hours of Cycles / Total Number of Hour Hours of Local Number of Hour Reumber of Local Number of Hour Reumber of Local Number of Hour Reumber of Local Number of Hour Reumber of Hour Reumber of Local Number of Hour Reumber of Local Number of Local Number of Hour Reumber of Local Number of	Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)										
Max Weight Ibs of loaded 745 8N/A 200bs/Ton Rolling rolling Resiliance (1% for each 200bs/Ton Rolling Resiliance) 50											
peed Loaded Max Weight its of loaded 745 Tons 52 20ibs/Ton Rolling weigh 3 Rolling Resitance (1% for each 20ibs/Ton) 3% Slope Grade 2% Total Resistance 5% Max Geer per ACT Chart 6 Max Weight liss of Empty 45 Tone Empty 25 Tone Empty 25 Rolling Resitance (1% per 20ibs/Ton) Empty 15 Rolling Resitance (1% per 20ibs/Ton Rolling weight 15 empty 45 Tone Empty 25 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance (1% per 20ibs/Ton Rolling weight Empty 15 Rolling Resistance Empty 36 Rolling Rolling Rolling Rolling Resistance Empty 36 Rolling Ro	Number of Haul Days Number of Haul Days										
Max Weight list of loaded 745 PNA Tons 52 2010s Fron Rolling weight 3 Rolling Restance (1 for each 2010s Fron) 279, Siepe Grade Max George CAT Chart 6 Max George Cat Chart 7 Rolling Restance (1 for Empty 8) Rolling Rol											
Max Weight list of loaded 745 PNA Tons 52 2010s Fron Rolling weight 3 Rolling Restance (1 for each 2010s Fron) 279, Siepe Grade Max George CAT Chart 6 Max George Cat Chart 7 Rolling Restance (1 for Empty 8) Rolling Rol											
Tons 52 200b3/Ton Rolling Resistance (1% for each 201b3/Ton) 3% Rolling Resistance (1% For each 201b3/Ton) 3% Slope Grade 2% Total Resistance 5% Max Morear per CAT Chart 6 Max MiPH 12 peed Empty Max Weight late of Empty 25 Ton Sungly 25 Ton	Speed Loaded	Max Weight lbs of loaded 745	#N/A								
2006a Fron Rolling welgish Rolling Restance (1% per 2006a Fron Rolling welgish Rolling Restance (1% per 2006a Fron Rolling welgish Rolling Restance (1% per 2006a Fron Rolling welgish Empty 1 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 25 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 35 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 36 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 36 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 37 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 37 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 37 Rolling Restance (1% per 2006a Fron Rolling welgish Empty 37 Rolling Rol											
Slope Grade 21/4		20lbs/Ton Rolling weigth	3								
Total Resistance Total Resis											
Max Gear per CAT Chart 6 Max MHH 12 peed Empty Max Weight its of Empty 45 Tons Empty 25 20bs/Ton Rolling weight Empty 1 Rolling Resistance (1% per 20bb/Ton) Empty 1% Average Slope Empty Total Resistance Empty 3% Max Gear per CAT Chart Empty 3 Max Gear per CAT Chart Empty 8											
peed Empty Max MPH 12 Max Weight los of Empty 745 MAX Max Weight los of Empty 745 MAX 10			6								
Max Weight list of Empty 745 aNA To mis Empty 25 AlbiaTron Rolling meight Empty 1 Rolling Restance (1% per 20bu/Tro) Empty 15. Total Resiliance Empty 36 Max Gaze per CAT Chart Empty 8		Max MPH	12								
Ton Empty 25 20lbs/Ton Rolling weight Empty 1 Rolling Resiltance (1% per 20lbs/Ton) Empty 1½ Avrage Slope Empty 2½ Total Resiltance Empty 3½ Max Gear per CAT Chart Empty 8	Speed Empty	May Weight the of Empty 745	#N/A								
20lbs/Ton Rolling weight Empty 1 Rolling Resitance (1's per 20lbs/Ton Empty 1% Average Stope Empty 2% Total Resistance Empty 3% Max Gear per CAT Chart Empty 8											
Average Slope Empty 2% Total Resistance Empty 3% Max Gear per CAT Chant Empty 8		20lbs/Ton Rolling weight Empty	1								
Total Resistance Empty 3% Max Gear per CAT Chart Empty 8											
Max Gear per CAT Chart Empty 8		Average Slope Empty									
		Max Gear per CAT Chart Empty									

Other Notes This pay item

This pay item is for demolition of the power canal from the upstream penstock near the dam to the forebay, it is expected that 3 crews will be need to achieve the demolition operation using the productions provided. The demolition operation due to creating access to the demo areas, repositioning of equipment, rebar density, personnel breaks, and machine maintenance. The hauling operation is expected to occur roughly 1/4 of the time and is expected to be 80% efficient after accounting for personnel breaks, equipment.

The pay item is for demolition operation will be 50% efficient due to creating access to the demo areas, repositioning of equipment, rebar density, personnel breaks, and many items of the pay items

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.065.1		Project	: KRRP - JC Boyle			
Description	:	Power Canal Backfill		Group	D07			
Quantity	1.065.1	63,519.00 CY						
Daily Production	1.065.1	2,600.00 CY per 10	hour shift	Project #	: 1			
Work Days	1.065.1	24.4 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.065.1	\$5.77 per CY		Probable Low	Cost Parameter	2,990.00	\$311,422	\$104.15
Total Cost	1.065.1	\$366,379		Probable High	Cost Parameter	2,210.00	\$421,336	\$190.65

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	2.00	24.4	10	488.00	Е	\$205.40	incl. in rate	incl. in rate	\$100,235.20
Dozer (235hp)(CATD7)	Active	2.00	24.4	10	488.00	E	\$171.07	incl. in rate	incl. in rate	\$83,482.16
Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn)	Active	2.00	24.4	10	488.00	E	\$76.79	incl. in rate	incl. in rate	\$37,473.52
Equipment Operator (medium)	Active	6.00	24.4	10	1,464.00	L	\$72.34	incl. in rate	incl. in rate	\$105,899.90
Labor Foreman	Active	1.00	24.4	10	244.00	L	\$58.87	incl. in rate	incl. in rate	\$14,364.77
Laborer	Active	2.00	24.4	10	488.00	L	\$51.07	incl. in rate	incl. in rate	\$24,923.62
				Labor Hours	2196				TOTAL LABOR	\$145,188.30
				Equipment Hours	1464			то	TAL EQUIPMENT	\$221,190.8

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$

SUBCONTRACT COSTS					
Description	Quantity	Units Notes /	Unit		Contract or Quote
		Company	Price		Amount
					\$0.00
					\$0.00
					\$0.00
				_	\$0.00
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$145,188.30 Labor Burden @	0.0%		\$145,188.30
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$221,190.88 Equipment Tax @	0.00% \$0.00		\$221,190.88
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$366,379	\$0	DIRECT COST SUBTOTALS	\$366,379
Additional Pay Item Notes :				

Material Cost

PAY ITEM COST DETAIL WORKSHEET

Description

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.065.2		Project	: KRRP - JC Boyle			
Description	:	Power Canal Backfill Trucking From	Disposal Site	Group	D07			
Quantity	1.065.2	39,144.00 CY						
Daily Production	1.065.2	2,600.00 CY per 10	hour shift	Project #	: 1			
Work Days	1.065.2	19.7 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.065.2	\$6.24 per CY		Probable Low	Cost Parameter	2,990.00	\$207,728	\$69.47
Total Cost	1.065.2	\$244,385		Probable High	Cost Parameter	2,210.00	\$281,043	\$127.17

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	19.7	10	196.56	E	\$205.40	incl. in rate	incl. in rate	\$40,373.42
Equipment Operator (medium)	Active	1.00	19.7	10	196.56	L	\$72.34	incl. in rate	incl. in rate	\$14,218.36
Truck Driver (heavy)	Active	4.00	19.7	10	786.24	L	\$66.92	incl. in rate	incl. in rate	\$52,618.33
CAT 745 (32 CY) OFF ROAD TRUCK	Active	4.00	19.7	10	786.24	Е	\$174.47	incl. in rate	incl. in rate	\$137,175.2
						_	*****			· ·
				Labor Hours	982.8				TOTAL LABOR	\$66,836.69
				Equipment Hours	982.8				TAL EQUIPMENT	\$177,548.72

	\$0.00
TOTAL MATERIAL	\$0.00

Order Quantity Order Price

Conversion Factor / Waste

Order Unit

Item Quantity

SUBCONTRACT COSTS					
Description	Quantity U	nits Notes /	Unit		Contract or Quote
		Company	Price		Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$66,836.69 Labor Burden @	0.0%		\$66,836.69
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$177,548.72 Equipment Tax @	0.00% \$0.00		\$177,548.72
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$244,385	\$0	DIRECT COST SUBTOTALS	\$244,385
Additional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.066	Project	: KRRP - JC Boyle			
Description	:	Remove Structural Steel items associated with Forebay Trash Rack Piers	Group	: D10			
Quantity	:	11,500.00 LBS					
Daily Production	:	31,250.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	0.4 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.22 per LBS	Probable Low	Cost Parameter	35,937.50	\$2,118	\$0.06
Total Cost		\$2.492	Probable High	Cost Parameter	23,437,50	\$3,115	\$0.13

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.49
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.58
Steelworker	Active	1.00	0.4	10	4.00	L	\$78.10	incl. in rate	incl. in rate	\$312.40
Crawler Crane (90tn)	Active	1.00	0.4	10	4.00	E	\$211.22	incl. in rate	incl. in rate	\$844.88
Equipment Operator (crane)	Active	1.00	0.4	10	4.00	L	\$81.60	incl. in rate	incl. in rate	\$326.39
				Labor Hours	20				TOTAL LABOR	\$1,282.86
				Equipment Hours	4				TOTAL EQUIPMENT	\$844.88

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Mater Cos	
Consumables 5% labor (saw blades, drill bits, et	1.00	LS	1.000	1.00	\$64.14		\$64.14

Description	Quantity	Units	Notes /		Unit		Contract or Quote
			Company		Price		Amount
ng Disposal Cost 30 Miles to Klamath y Landfill	1.00	Loads	20 tons a load		:	\$300.00	\$300.0
						TOTAL SUBCONTRACTS	\$300.0
MMARY OF COSTS							
or Cost		abor Burden @		9.7% \$0.00			\$1,282.8
erial Cost		Material Tax @		0.0% \$0.00			\$64.
ipment Cost		quipment Tax @		0.0% \$0.00			\$844.8
contractors	\$300.00						\$300.0
ECT COST SUBTOTALS	\$2,492			\$0		DIRECT COST SUBTOTALS	\$2,49
ional Pav Item Notes :							
contractors	\$300.00	cquipment Tax @				DIRECT COST SUBTOTALS	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.067	Project : KRRP - JC Boyle			
Description	:	Remove Forebay Concrete	Group : D07			
Quantity	1.067	2,520.00 CY				
Daily Production	1.067	100.00 CY per 10 hour shift	Project # : 1			
Work Days	1.067	25.2 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.067	\$105.21 per CY	Probable Low Cost Parameter	110.00	\$238,611	\$2,169.19
Total Cost	1.067	\$265,124	Probable High Cost Parameter	80.00	\$318,148	\$3,976.86

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	25.2	10	252.00	L	\$58.87	incl. in rate	incl. in rate	\$14,835.74
Laborer	Active	3.00	25.2	10	756.00	L	\$51.07	incl. in rate	incl. in rate	\$38,611.19
Equipment Operator (medium)	Active	2.00	25.2	10	504.00	L	\$72.34	incl. in rate	incl. in rate	\$36,457.34
Truck Driver (heavy)	Active	1.00	7.7	10	77.30	L	\$66.92	incl. in rate	incl. in rate	\$5,173.23
Air Compressor 900 cfm	Active	1.00	25.2	10	252.00	E	\$38.87	incl. in rate	incl. in rate	\$9,794.97
Air Tool, Chipping Hammer	Active	2.00	25.2	10	504.00	E	\$1.64	incl. in rate	incl. in rate	\$826.07
Generator, Small Generator, 10 - 15 kW	Active	1.00	25.2	10	252.00	E	\$7.04	incl. in rate	incl. in rate	\$1,774.08
Hydraulic Excavator (2.5cy)	Active	2.00	25.2	10	504.00	E	\$205.40	incl. in rate	incl. in rate	\$103,521.60
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	25.2	10	252.00	E	\$36.81	incl. in rate	incl. in rate	\$9,276.12
Hydraulic Thumbs/Shear Attachment	Active	1.00	25.2	10	252.00	Е	\$24.92	incl. in rate	incl. in rate	\$6,279.84
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	7.7	10	77.30	Е	\$117.28	incl. in rate	incl. in rate	\$9,065.74
			25.2	10	0.00					\$0.00
			25.2	10	0.00					\$0.00
			25.2	10	0.00					\$0.00
			25.2	10	0.00					\$0.00
			25.2	10	0.00				_	\$0.00
				Labor Hours	1589.3				TOTAL LABOR	\$95,077.50
				Equipment Hours	2093.3			тс	TAL EQUIPMENT	\$140,538.43

Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
onsumables (10% labor)	1.00	LS	1.000	1.00	\$9,507.75	\$9,507

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Concrete Saw Cutting	1 AL	Allowance	\$20,000.00		\$20,000.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$20,000.00

				\$0.00 \$0.00
			TOTAL SUBCONTRACTS	
SUMMARY OF COSTS				
Labor Cost Material Cost Equipment Cost Subcontractors	\$95,077.50 Llabor Burden @ \$9,507.75 Material Tax @ \$140,538.43 Equipment Tax @ \$20,000.00	0.0% \$0.00 0.00% \$0.00 0.00% \$0.00		\$95,077.50 \$9,507.75 \$140,538.43 \$20,000.00
DIRECT COST SUBTOTALS	\$265,124	\$0	DIRECT COST SUBTOTALS	\$265,124
Additional Pay Item Notes :				

		Details		
High Cost Factors			Low Cost Factors	
Bad Weather	09		No Bad Weather	0%
Gas Price Increase	109		Gas Price Decrease	109
Unforeseen Contaminated Mats/ Access Issues	10%		No Unforeseen Contaminated Mats/ Access Issues	0%
	20%			10%
Production Per Hour F	lours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production 50%	80.00
20	10		50%	100.00
			30 %	100.00
Haul Notes		Excavator Loading Production per shift		
CY	2,520.00	CY per Hour		52
Swell Factor	60%	CY Bucket Size		2.50
Bulk CY	4032	Buckets Per Hour		21
Haul Vehicle 60% Capacity (2 tons per CY)	12	# of Excavators		2.00
# of Haul Vehicles		CY per Hour (5 CY Bucket)		26
Load Time (Includes Spot Time, Maneuver Time at Load site) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift		95
Dump Time (Includes Spot Time, Maneuver Time at Dump site) (Minutes)		Efficient Compared to Ideal Production		27%
Haul Speed (Loaded MPH)	15	Inefficiencies Compared to Ideal Production		73%
Return Speed (Unloaded MPH)	20			
Haul Distance (Miles) Along Power Canal	0.0			
Shift Length (Hours)	10			
		Breaker Production		
Cyce Time		Hydraulic Hammer CY per Hour		10
Load Time (Load Time Minutes / 60mins)	0.00	# of Hammers		1.00
Haul Time (Haul Distance / Haul Speed)		CY per Hour		10
Dump Time (Dump Time Minutes / 60 Mins)	0.00	CY per Hour Back Check		10
Return Time (Haul Distance / Return Speed)	0.00	20 CY per HR per 8hr shift (Ideal prod)		20
Hours Per Cycle	0.10	Efficient Compared to Ideal Production		50%
Efficiency Factor (Night Work, Traffic Retrictions, Coffee Breaks, ECT)		Inefficiencies Compared to Ideal Production		50%
Actual Hours Per Cycle (Hours per Cycle / Efficency Factor)	0.23			
Number of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	330			
Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles) Loads Per Hour (Number of Cycles / Total Number of Haul Hours)	77.28 4.35			
Number of Haul Days	4.3.			
Speed Loaded				
Max Weight lbs of loaded 725 Tons	103,707.00 52			
20lbs/Ton Rolling weigth	32			
Rolling Resitance (1% for each 20lbs/Ton)	39			
Slope Grade	29			
Total Resistance	59			
Max Gear per CAT Chart				
Max MPH Speed Empty	15			
Speed Empty Max Weight lbs of Empty 745	50,795.00			
Tons Empty	25			
The state of the s				
20lbs/Ton Rolling weight Empty Rolling Resitance (1% per 20lbs/Ton) Empty	19			
Rolling Resitance (1% per 20lbs/Ton) Empty Average Slope Empty	19			
Total Resistance Empty	29 39			
Max Gear per CAT Chart Empty				
Max MPH Empty	20			

1.067 Remove Forebay Concrete

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.068	Project	: KRRP - JC Boyle			
Description	:	Place Concrete Plugs at Tunnel Portals	Group	: D02			
Quantity	1.068	75.00 CY					
Daily Production	1.068	4.40 CY per 10 hours	shift Project #	: 1			
Work Days	1.068	17.0 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.068	\$2,159.63 per CY	Probable Lo	w Cost Parameter	4.62	\$153,874	\$33,306.03
Total Cost	1.068	\$161,972	Probable Hi	gh Cost Parameter	4.18	\$170,071	\$40,686.87

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Carpenter Foreman (out)	Active	1.00	17.0	10	170.00	L	\$85.49	incl. in rate	incl. in rate	\$14,533.64
Carpenters	Active	2.00	17.0	10	340.00	L	\$85.49	incl. in rate	incl. in rate	\$29,067.28
Carpenters, Journeyman	Active	2.00	17.0	10	340.00	L	\$77.54	incl. in rate	incl. in rate	\$26,363.26
quipment Operator (crane)	Active	1.00	8.5	10	85.00	L	\$81.60	incl. in rate	incl. in rate	\$6,935.83
quipment Operator (light)	Active	1.00	2.0	10	20.00	L	\$69.19	incl. in rate	incl. in rate	\$1,383.80
lydraulic Crane (80tn)	Active	1.00	8.5	10	85.00	E	\$197.66	incl. in rate	incl. in rate	\$16,801.10
Conc Pump (small)	Active	1.00	2.0	10	20.00	E	\$121.58	incl. in rate	incl. in rate	\$2,431.60
steelworker	Active	4.00	5.0	10	200.00	L	\$78.16	\$0.00		\$15,631.00

Labor Hours	1155	TOTAL LABOR	\$93,914.81
Equipment Hours	105	TOTAL EQUIPMENT	\$19,232.70

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
Concrete	75.00	CY	1.100	82.50	\$159.23	\$13,136.48
Reinforcement (At 90lbs per CY)	3.38	Ton	1.100	3.71	\$1,000.00	\$3,712.50
FormWork Allowance (20% of Labor)	1.00	LS	1.100	1.10	\$18,782.96	\$20,661.26
Consumables (10% of Equip & Labor)	1.00	LS	1.000	1.00	\$11,314.75	\$11,314.75

TOTAL MATERIAL \$48,824.98

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Contract or Quote Amount

- TOTAL SUBCONTRACTS \$0.00

| Labor Cost | \$93,914.81 | Labor Burden @ 0.0% | \$93,914.81 | Material Cost | \$48,824.98 | Material Tax @ 548,824.98 | Equipment Cost | \$19,232.70 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 |

This estimate accounts for two concrete plugs that are estimated to be 16' in diameter and 5' thick. Please see production and sequence notes for further details.

1.068 Place Concrete Plugs at Tunnel Portals Details High Cost Factors Low Cost Factors Bad Weather 0% No Bad Weather 5% Gas Price Increase Gas Price Decrease 5% Unforeseen Contaminated Mats/ Access Issues 0% No Unforeseen Contaminated Mats/ Access Issues 0% 5%

Production Per Hour	Hours Overall Product	ion
	0.44 8	3.52
	10	4.4

Production & Sequence Notes

The Plugs are expected to be formed in two sections. The inner sections will be formed and braced off of the tunel walls. After the inner form (set form) is installed the face form will be built similar to the set form by bracing off of the tunnel walls. To ensure consolidation a high slump small agregate mix will be used and concrete vibrators will have access through the Bat opening blockout at the top. One 5 man crew will be used to construct the formwork, place the concrete, and strip the form work. One crew of 4 rodbusters will be used to tie and brace reinforcement. Expected duration is 1 week to form each plug (Total of 2 weeks), 1 Week to reinforce both plugs inbetween forming operation, 2 days to pour each plug, and 1 week to strip each plug. Crane will be used 1/2 of time to support crew by flying material close to plug location. A small pump will be used to install concrete. Please note the production is adjusted to account for the duration as listed above.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.069		Project	: KRRP - JC Boyle			
Description	:	Remove Concrete Items associate	ed with Penstocks D/S from Tunnel	Group	: D07			
Quantity	1.069	1,800.00 CY						
Daily Production	1.069	128.00 CY per	10 hour shift	Project #	: 1			
Work Days	1.069	14.1	Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.069	\$105.16 per CY		Probable Low Cos	st Parameter	140.80	\$170,359	\$1,209.94
Total Cost	1.069	\$189,288		Probable High Cos	st Parameter	102.40	\$227,146	\$2.218.22

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	14.1	10	141.00	L	\$58.87	incl. in rate	incl. in rate	\$8,300.95
Laborer	Active	3.00	14.1	10	423.00	L	\$51.07	incl. in rate	incl. in rate	\$21,603.88
Equipment Operator (medium)	Active	2.00	14.1	10	282.00	L	\$72.34	incl. in rate	incl. in rate	\$20,398.75
Truck Driver (heavy)	Active	1.00	14.6	10	146.40	L	\$66.92	incl. in rate	incl. in rate	\$9,797.67
Air Compressor 600 cfm	Active	1.00	14.1	10	141.00	E	\$21.74	incl. in rate	incl. in rate	\$3,065.19
Air Tool, Chipping Hammer	Active	1.00	14.1	10	141.00	E	\$1.64	incl. in rate	incl. in rate	\$231.10
Acetylene Torches	Active	2.00	14.1	10	282.00	E	\$0.44	incl. in rate	incl. in rate	\$124.08
Hydraulic Excavator (2.5cy)	Active	1.00	14.1	10	141.00	E	\$205.40	incl. in rate	incl. in rate	\$28,961.40
Hydraulic Excavator (5.0cy)	Active	1.00	14.1	10	141.00	E	\$276.50	incl. in rate	incl. in rate	\$38,986.50
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	14.6	10	146.40	E	\$117.28	incl. in rate	incl. in rate	\$17,169.79
Loader, FE Rubber Tire (5.25cy)	Active	1.00	14.1	10	141.00	E	\$76.00	incl. in rate	incl. in rate	\$10,716.00
Hydraulic Impact Breaker Attachment (5k+ ft-lb)	Active	1.00	14.1	10	141.00	E	\$63.28	incl. in rate	incl. in rate	\$8,922.48

		_	
\$60,101.26	TOTAL LABOR	992.4	Labor Hours
\$108,176,54	TOTAL EQUIPMENT	1274.4	Equipment Hours

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables (10% labor)	1.00	LS	1.000	1.00	\$6,010.13	\$6,010.13

TOTAL MATERIAL \$6,010.13

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit	C	ontract or Quote
			Company	Price		Amount
Concrete Saw Cutting	1 EA		Allowance	\$15,000.00		\$15,000.00
						\$0.00
						\$0.00
					_	\$0.00
					TOTAL SUBCONTRACTS	\$15,000.00

				TOTAL SUBCONTRACTS	\$13,000.00
SUMMARY OF COSTS					
Labor Cost	\$60,101.26 Labor Burden @	0.0%			\$60,101.26
Material Cost	\$6,010.13 Material Tax @	0.00%	\$0.00		\$6,010.13
Equipment Cost	\$108,176.54 Equipment Tax @	0.00%	\$0.00		\$108,176.54
Subcontractors	\$15,000.00				\$15,000.00
DIRECT COST SUBTOTALS	\$189,288		\$0	DIRECT COST SUBTOTALS	\$189,288
Additional Pay Item Notes :					

		1.009 N	Details		
High Cost Factors			Dotalio	Low Cost Factors	
Bad Weather Gas Price Increase		0% 10%		No Bad Weather Gas Price Decrease	
Unforeseen Contaminated Mats/ Access Issues		109		No Unforeseen Contaminated Mats/ Access Issues	1
Unito eseem Contaminated Mats/ Access issues		209		NO Officieseen Contaminated Mats/ Access issues	1
CY Per Hour Demolished	Hou		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
	32			40%	102.40
		10		40%	128.00
Haul Notes			Excavator Loading Production per shift		
CY			CY per Hour		19.67
Swell Factor			CY Bucket Size		2.50
Bulk CY			Buckets Per Hour		8
Haul Vehicle 60% Capacity (2 tons per CY)		13	# of Excavators		1.00
of Haul Vehicles		1	CY per Hour (2.5 CY Bucket)		20
Load Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)			CY Per Hour Ideal Production Per 8 Hour Shift		95
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		:	Efficient Compared to Ideal Production		21%
Haul Speed (Loaded MPH)		10	Inefficiencies Compared to Ideal Production		79%
Return Speed (Unloaded MPH)		15			
Haul Distance (Miles) Down Slope and Along Power Canal					
Shift Length (Hours)		10			
Cycle Time			Breaker Production		
Load Time (Load Time Minutes / 60mins)		0.08	Hydraulic Hammer CY per Hour		12.8
Haul Time (Haul Distance / Haul Speed)		0.20	# of Hammers		1.00
Dump Time (Dump Time Minutes / 60 Mins)		0.05	CY per Hour		12.8
Return Time (Haul Distance / Return Speed)		0.13	CY per Hour Back Check		12.8
Hours Per Cycle			32CY per HR per 8hr shift (Ideal prod)		32
Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT)			Efficient Compared to Ideal Production		40%
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)			Inefficiencies Compared to Ideal Production		60%
Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Total Number of Haul Hours (Actual Cycle Hours X Number of Cycles)		240 146.4			
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)		1.64			
Number of Haul Days		14.64			
CAT 725 Articulated Truck Speed Loaded (Down Hill)					
Speed Coaded (Down Fill)	Max Weight lbs. of loaded 725	103,707.00			
	Tons	52			
	20lbs/Ton Rolling weight	3			
	Rolling Resistance (1% for each 20lbs/Ton) Average Slope	39 69			
	Total Resistance	99			
	Max Gear per CAT Chart				
	Max MPH	14			
Speed Empty (Up Hill)					
	Max Weight lbs. of Empty 725 Tons Empty	50,795.00 25			
		23			
	20lbs/Ton Rolling weight Empty	1			
	Rolling Resitance (1% per 20lbs/Ton) Empty Average Slope Empty	19 69			
	Total Resistance Empty	79			
	Max Gear per CAT Chart Empty	79			
	Max MPH Empty	14			
			·		

Other Notes

which is expected to only be 40% efficient due to repositioning equipment 3 different times, expectation of high density of reinforcement, and the restricted access for a stockpile area for the demolished material. The Hauling operation is expected to be 70% efficient due to the long sloped haul road, extra time for on ground spotters, and due to the limited access for a stockpile area for the demolished material. The Hauling is expected to start after the demolition has started and the duration of the haul truck and the truck driver reflect the expected haul duration.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.070	Project	: KRRP - JC Boyl	9		
Description	:	Remove Head gate Control Building at Flume Entrance	Project	: D10			
Quantity	1.070	500.00 SF					
Daily Production	1.07	1,000.00 SF per 10 hour shift	Project #	: 1			
Work Days	1.07	0.5 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.07	\$15.95 per SF	Probable Low	Cost Parameter	1,100.00	\$7,178	\$6.53
Total Cost	1.07	\$7,975	Probable High	Cost Parameter	850.00	\$9,172	\$10.79

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.3
Laborer	Active	4.00	0.5	10	20.00	L	\$51.07	incl. in rate	incl. in rate	\$1,021.4
Equipment Operator (medium)	Active	2.00	0.5	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.3
Hydraulic Excavator (5.0cy)	Active	1.00	0.5	10	5.00	E	\$276.50	incl. in rate	incl. in rate	\$1,382.5
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.5	10	5.00	Е	\$63.11	incl. in rate	incl. in rate	\$315.5
				Labor Hours	35				TOTAL LABOR	\$2,039.1

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TATAL MATERIAL	
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	73 CY				\$0.00
Conversion CY to Tons (2 tons per CY) Hauling Disposal Cost 30 Miles to Klamath County Landfill	37.00 tons	Klamath County LandFill	\$74.00		\$2,738.00
	5.00 Loads	18 CY per load	\$300.00		\$1,500.00
					\$0.00
				TOTAL SUBCONTRACTS	\$4,238.00

\$2,039.18 Labor Burden @	0.0%		\$2,039.18
\$0.00 Material Tax @	0.00% \$0.00		\$0.00
\$1,698.05 Equipment Tax @	0.00% \$0.00		\$1,698.05
\$4,238.00	·		\$4,238.00
\$7,975	\$0	DIRECT COST SUBTOTALS	\$7,975
	\$0.00 Material Tax @ S1,698.05 Equipment Tax @ \$4,238.00	\$0.00 Material Tax @ 0.00% \$0.00 \$1,698.05 Equipment Tax @ 0.00% \$0.00 \$4,238.00	\$0.00 Material Tax @ \$0.00% \$0.00 \$1,698.05 Equipment Tax @ \$0.00% \$0.00

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.071	Project	: KRRP - JC Boyle			
Description	:	Remove Fore bay Spillway Gate House	Project	: D10			
Quantity	1.071	610.00 SF					
Daily Production	1.071	1,000.00 SF per 10 hour shift	Project #	: 1			
Work Days	1.071	0.6 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.071	\$15.27 per SF	Probable Low C	ost Parameter	1,100.00	\$8,383	\$7.62
Total Cost	1.071	\$9,315	Probable High C	ost Parameter	800.00	\$11,178	\$13.97

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.2
Laborer	Active	4.00	0.6	10	24.00	L	\$51.07	incl. in rate	incl. in rate	\$1,225.7
Equipment Operator (medium)	Active	2.00	0.6	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.0
Hydraulic Excavator (5.0cy)	Active	1.00	0.6	10	6.00	E	\$276.50	incl. in rate	incl. in rate	\$1,659.0
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.6	10	6.00	Е	\$63.11	incl. in rate	incl. in rate	\$378.6
				Labor Hours	42				TOTAL LABOR	\$2,447.0
				Labor Hours						+-,

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	89	CY				\$0.00
Conversion CY to Tons (2 tons per CY)	45.00	tons	Klamath County LandFill	\$74.00		\$3,330.00
Hauling Disposal Cost 30 Miles to Klamath County Landfill						
	5.00	Loads	18 CY per load	\$300.00		\$1,500.00
						\$0.00
					TOTAL SUBCONTRACTS	\$4,830.00

SUMMARY OF COSTS				
Labor Cost	\$2,447.02 Labor Burden @	0.0%		\$2,447.02
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$2,037.66 Equipment Tax @	0.00% \$0.00		\$2,037.66
Subcontractors	\$4,830.00			\$4,830.00
DIRECT COST SUBTOTALS	\$9,315	\$0	DIRECT COST SUBTOTALS	\$9,315
Additional Pay Item Notes :				

CREW COSTS

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.072	Project : KRRP - JC Boyle	е		
Description	:	Remove Fore bay Control Building	Group : D10			
Quantity	1.072	560.00 SF				
Daily Production	1.072	560.00 SF per 10 hour shift	Project # : 1			
Work Days	1.072	1.0 Days	Estimator : Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.072	\$21.58 per SF	Probable Low Cost Parameter	616.00	\$10,874	\$17.65
Total Cost	1.072	\$12,082	Probable High Cost Parameter	448.00	\$14,499	\$32.36

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	4.00	1.0	10	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.92
Equipment Operator (medium)	Active	2.00	1.0	10	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Hydraulic Excavator (5.0cy)	Active	1.00	1.0	10	10.00	E	\$276.50	incl. in rate	incl. in rate	\$2,765.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	1.0	10	10.00	E	\$63.11	incl. in rate	incl. in rate	\$631.10
				Labor Hours	70				TOTAL LABOR	\$4,078.36
				Equipment Hours	20			TO	OTAL EQUIPMENT	\$3,396.10

Description	Item	Order	Conversion	Order	Order		Material
•	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
					то	TAL MATERIAL	

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	82 C	CY				\$0.00
Conversion CY to Tons (2 tons per CY)	42.00 to	ons	Klamath County LandFill	\$74.00		\$3,108.00
Hauling Disposal Cost 30 Miles to Klamath County						
Landfill	5.00 L	oads	18 CY per load	\$300.00		\$1,500.00
						\$0.00
					TOTAL SUBCONTRACTS	\$4,608.00

SUMMARY OF COSTS						
Labor Cost	\$4,078.36	Labor Burden @	0.0%			\$4,078.36
Material Cost	\$0.00	Material Tax @	0.00%	\$0.00		\$0.00
Equipment Cost	\$3,396.10	Equipment Tax @	0.00%	\$0.00		\$3,396.10
Subcontractors	\$4,608.00					\$4,608.00
DIRECT COST SUBTOTALS	\$12,082			\$0	DIRECT COST SUBTOTALS	\$12,082
Additional Pay Item Notes :						

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.074		Project	: KRRP - JC Boy	le		
		Remove Insulated Generator	Building next to Fore bay Control					
Description	:	Building		Group	: D10			
Quantity	1.074	90.00 SF						
Daily Production	1.074	1,000.00 SF per	10 hour shift	Project #	: 1			
Work Days	1.074	0.1 Days		Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.074	\$17.39 per SF		Probable Low	Cost Parameter	1,100.00	\$1,409	\$1.28
Total Cost	1.074	\$1,565		Probable High	Cost Parameter	800.00	\$1,879	\$2.35

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
2000p0	Idle	crew	Worked	/day	Hours	_,_	Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate	\$58.87
Laborer	Active	4.00	0.1	10	4.00	L	\$51.07	incl. in rate	incl. in rate	\$204.29
Equipment Operator (medium)	Active	2.00	0.1	10	2.00	L	\$72.34	incl. in rate	incl. in rate	\$144.67
Hydraulic Excavator (5.0cy)	Active	1.00	0.1	10	1.00	Е	\$276.50	incl. in rate	incl. in rate	\$276.50
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.00	Е	\$63.11	incl. in rate	incl. in rate	\$63.11
				Labor Hours	7				TOTAL LABOR	\$407.84
				Equipment Hours	2			TC	TAL EQUIPMENT	\$339.61

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.0

Description	Quantity Uni	s Notes /	Unit	Co	ontract or Quote
		Company	Price		Amount
Dump Fee Coversion (SFXH*.33/27)	13 CY				\$0.00
Conversion CY to Tons (2 tons per CY)	7.00 tons	Klamath County LandFill	\$74.00		\$518.00
lauling Disposal Cost 30 Miles to Klamath County Landfill					
	1.00 Loads	18 CY per load	\$300.00		\$300.00
					\$0.00
				TOTAL SUBCONTRACTS	\$818.00

SUMMARY OF COSTS				
Labor Cost	\$407.84 Labor Burden @	0.0%		\$407.84
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$339.61 Equipment Tax @	0.00% \$0.00		\$339.61
Subcontractors	\$818.00			\$818.00
DIRECT COST SUBTOTALS	\$1,565	\$0	DIRECT COST SUBTOTALS	\$1,565
Additional Pay Item Notes :				

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - JC Boyle Description
Quantity
Daily Production
Work Days
Unit Price Group : D03 37,500.00 LBS per 1.5 Days \$0.37 per LBS 10 hour shift Project # : 1
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter LBS per 45,000.00 Total Cost \$16,087 Unit Price Per LBS \$0.36 Total Cost \$20,109 Probable High Cost Parameter 28,125.00 \$25,137 \$0.89

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.5	10	15.00	L	\$58.87	incl. in rate	incl. in rate	\$883.08
Laborer	Active	2.00	1.5	10	30.00	L	\$51.07	incl. in rate	incl. in rate	\$1,532.19
Steelworker	Active	2.00	1.5	10	30.00	L	\$78.10	incl. in rate	incl. in rate	\$2,343.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.5	10	15.00	Е	\$76.00	incl. in rate	incl. in rate	\$1,140.00
		0.00	1.5	10	0.00	0	\$0.00			\$0.00
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	1.5	10	15.00	E	\$117.28	incl. in rate	incl. in rate	\$1,759.20
Hydraulic Crane (120tn)	Active	1.00	1.5	10	15.00	E	\$242.08	incl. in rate	incl. in rate	\$3,631.20
Welder	Active	1.00	1.5	10	15.00	E	\$7.84	incl. in rate	incl. in rate	\$117.60
Gas Welding Machine	Active	1.00	1.5	10	15.00	E	\$2.88	incl. in rate	incl. in rate	\$43.15
Equipment Operator (medium)	Active	1.00	1.5	10	15.00	L	\$72.34	incl. in rate	incl. in rate	\$1,085.04
Equipment Operator (crane)	Active	1.00	1.5	10	15.00	L	\$81.60	incl. in rate	incl. in rate	\$1,223.97

 Labor Hours
 105
 TOTAL LABOR
 \$7,067.28

 Equipment Hours
 75
 TOTAL EQUIPMENT
 \$6,691.15

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
umables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$353.36	\$353.30
tive demolition, torch cutting, steel, 1" thick (assumed qty)	2,500.00	LF	1.000	2,500.00	\$0.85	\$2,125.0
	2,500.00	LF	1.000	2,500.00	\$0.85	

						TOTAL MATERIAL	\$2,478.36
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum							
Hauling Disposal Cost 30 Miles to Klamath County	5.50	ton	1.000	5.50	\$595.00		\$3,272.50
Landfill	2.00	Loads	20 tons a load		\$300.00		\$600.00
						TOTAL SUBCONTRACTS	\$3,872.50
SUMMARY OF COSTS							
Labor Cost		abor Burden @		49.7% \$0.00			\$7,067.28
Material Cost		Material Tax @		0.0% \$0.00			\$2,478.36
Equipment Cost		Equipment Tax @		0.0% \$0.00			\$6,691.15
Subcontractors	\$3,872.50						\$3,872.50
DIRECT COST SUBTOTALS	\$20,109			\$0		DIRECT COST SUBTOTALS	\$20,109
Additional Pay Item Notes :							

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.076	Project	: KRRP - JC Boyle			
Description	:	Remove Trash rack and trash rake (steel)	Group	: D03			
Quantity	:	75,000.00 LBS	_				
Daily Production	:	25,000.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	3.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.47 per LBS	Probable Low C	ost Parameter	30,000.00	\$28,431	\$0.95
Total Cost	:	\$35,538	Probable High C	Cost Parameter	18,750.00	\$44,423	\$2.37

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	3.0	10	30.00	L	\$58.87	incl. in rate	incl. in rate	\$1,766.16
Laborer	Active	1.00	3.0	10	30.00	L	\$51.07	incl. in rate	incl. in rate	\$1,532.19
Steelworker	Active	3.00	3.0	10	90.00	L	\$78.10	incl. in rate	incl. in rate	\$7,029.00
Equipment Operator (crane)	Active	1.00	3.0	10	30.00	L	\$81.60	incl. in rate	incl. in rate	\$2,447.94
Equipment Operator (medium)	Active	1.00	3.0	10	30.00	L	\$72.34	incl. in rate	incl. in rate	\$2,170.08
Loader, FE Rubber Tire (5.25cy)	Active	1.00	3.0	10	30.00	Е	\$76.00	incl. in rate	incl. in rate	\$2,280.00
Hydraulic Crane (120tn)	Active	1.00	3.0	10	30.00	E	\$242.08	incl. in rate	incl. in rate	\$7,262.40
Acetylene Torches	Active	1.00	3.0	10	30.00	Е	\$0.47	incl. in rate	incl. in rate	\$14.10
Air Compressor 600 cfm	Active	1.00	3.0	10	30.00	Е	\$21.74	incl. in rate	incl. in rate	\$652.20
Generator, Small Generator, 10 - 15 kW	Active	1.00	3.0	10	30.00	E	\$7.04	incl. in rate	incl. in rate	\$211.20
				Labor Hours	210				TOTAL LABOR	\$14,945.37
				Equipment Hours	150				TOTAL EQUIPMENT	\$10,419.90

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 15% labor (saw blades, drill bits,							
etc)	1.00	LS	1.000	1.00	\$2,241.81		\$2,241.8
Selective demolition, torch cutting, steel, 1" thick							
plate (assumed qty)	6,000.00	LF	1.000	6,000.00	\$0.85		\$5,100.0
						TOTAL MATERIAL	\$7,341.8

Description	Quantity	Units	Notes / Company			Unit Price			Contract or Quote Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)									
	3.75	ton	1.000				\$595.00		\$2,231.2
lauling Disposal Cost 30 Miles to Klamath County									
andfill	2.00	Loads	20 tons a load				\$300.00		\$600.0
								TOTAL SUBCONTRACTS	\$2,831.
								•	
SUMMARY OF COSTS									
Labor Cost		Labor Burden @		49.7%	\$0.00				\$14,945.
Material Cost		Material Tax @		0.0%	\$0.00				\$7,341.
Equipment Cost		Equipment Tax @		0.0%	\$0.00				\$10,419.9
Subcontractors	\$2,831.25								\$2,831.2
DIRECT COST SUBTOTALS	\$35,538				\$0			DIRECT COST SUBTOTALS	\$35,53
Additional Pay Item Notes :									

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.077	Project	: KRRP - JC Boyle			
Description	:	Remove Stop Logs and Slots (steel)	Group	: D03			
Quantity	:	136,000.00 LBS	- '				
Daily Production	:	54,000.00 LBS per 20 hour shift	Project #	: 1			
Work Days	:	2.5 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.42 per LBS	Probable Low C	ost Parameter	59,400.00	\$51,948	\$0.87
Total Cost	:	\$57,720	Probable High C	ost Parameter	40,500.00	\$72,150	\$1.78

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.5	20	50.00	L	\$58.87	incl. in rate	incl. in rate	\$2,943.60
Laborer	Active	4.00	2.5	20	200.00	L	\$51.07	incl. in rate	incl. in rate	\$10,214.60
Steelworker	Active	2.00	2.5	20	100.00	L	\$78.10	incl. in rate	incl. in rate	\$7,810.00
Equipment Operator (crane)	Active	1.00	2.5	20	50.00	L	\$81.60	incl. in rate	incl. in rate	\$4,079.90
Equipment Operator (medium)	Active	1.00	2.5	20	50.00	L	\$72.34	incl. in rate	incl. in rate	\$3,616.80
Hydraulic Crane (120tn)	Active	1.00	2.5	20	50.00	E	\$242.08	incl. in rate	incl. in rate	\$12,104.00
Loader, FE Rubber Tire (3.5cy)	Active	1.00	2.5	20	50.00	E	\$63.11	incl. in rate	incl. in rate	\$3,155.50

Labor Hours	450	TOTAL LABOR	\$28,664.90
Equipment Hours	100	TOTAL EQUIPMENT	\$15,259.50

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits,						
etc)	1.00	LS	1.000	1.00	\$4,299.74	\$4,299.74
Selective demolition, torch cutting, steel, 1" thick plate (assumed qty)	5,000.00	LF	1.000	5,000.00	\$0.85	\$4,250.00

						TOTAL MATERIAL	\$8,549.74
SUBCONTRACT COSTS							
Description	Quantity	Units	Notes /	Unit			Contract or Quote
			Company	Price			Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)							
Hauling Disposal Cost 30 Miles to Klamath County	6.80	ton	1.000	6.80	\$595.00		\$4,046.00
Landfill	4.00	Loads	20 tons a load		\$300.00		\$1,200.00
		Loudo	25 15/15 4 1544		φου.συ		\$0.00
							\$0.00
						TOTAL SUBCONTRACTS	\$5,246.00
SUMMARY OF COSTS							
Labor Cost		abor Burden @	49.				\$28,664.90
Material Cost	\$8,549,74	Material Tax @	0.	0% \$0.00			\$8.549.74

 Material Cost
 \$8,549.74 Material Tax @
 0.0% \$0.00
 \$8,549.74 Material Tax @
 \$8,549.74 Material Tax @
 \$15,259.50 Equipment Tax @
 \$15,259.50 St.00% St.00
 \$15,259.50 St.00% St.00
 \$15,259.50 St.00% St.00% St.00
 \$15,259.50 St.00% St.00% St.00% St.00
 \$15,259.50 St.00% St

The process of removing stop logs is not manual, but done with hydraulic stop log lifters and hoists. The gate side guides and invert assumed having a minimum weight of 4 lbs./ft. for wail mounted and 3 lbs./ft. for embedded in concrete. The gate invert should contain a removable neoprene seal. Including stop log grooves, lifter, guide - weight around 136,000 lbs.

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.078	Project	: KRRP - JC Boyle			
Description	:	Remove Traveling Water Screen	Group	: D03			
Quantity	:	124,000.00 LBS					
Daily Production	:	37,500.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	3.3 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.39 per LBS	Probable Low C	Cost Parameter	41,250.00	\$43,747	\$1.06
Total Cost	:	\$48,607	Probable High (Cost Parameter	28,125.00	\$60,759	\$2.16

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	2.00	3.3	10	66.00	L	\$58.87	incl. in rate	incl. in rate	\$3,885.55
Electrician	Active	1.00	3.3	10	33.00	L	\$55.80	incl. in rate	incl. in rate	\$1,841.50
Steelworker	Active	6.00	3.3	10	198.00	L	\$78.10	incl. in rate	incl. in rate	\$15,463.8
_oader, FE Rubber Tire (8.6cy)	Active	1.00	3.3	10	33.00	E	\$225.40	incl. in rate	incl. in rate	\$7,438.20
Hydraulic Crane (120tn)	Active	1.00	3.3	10	33.00	E	\$242.08	incl. in rate	incl. in rate	\$7,988.64
Welder	Active	2.00	3.3	10	66.00	E	\$7.84	incl. in rate	incl. in rate	\$517.44
Gas Welding Machine	Active	2.00	3.3	10	66.00	E	\$2.88	incl. in rate	incl. in rate	\$189.88
Equipment Operator (medium)	Active	1.00	3.3	10	33.00	L	\$72.34	incl. in rate	incl. in rate	\$2,387.09
Equipment Operator (crane)	Active	1.00	3.3	10	33.00	L	\$81.60	incl. in rate	incl. in rate	\$2,692.73
				Labor Hours	363				TOTAL LABOR	\$26,270.6
				Equipment Hours	198				TOTAL EQUIPMENT	\$16,134.1

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$1,313.53	\$1,313.53

TOTAL MATERIAL \$1,313.53

Description	Quantity	Units	Notes /		Unit		Contract or Quote
			Company		Price		Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)							
	6.20	ton	1.000		\$595.00		\$3,689.0
lauling Disposal Cost 30 Miles to Klamath County							
andfill	4.00	Loads	20 tons a load		\$300.00		\$1,200.0
						TOTAL SUBCONTRACTS	\$4,889.0
SUMMARY OF COSTS							
Labor Cost	\$26,270.67 L	abor Burden @	49.7	% \$0.00			\$26,270.6
Material Cost	\$1,313.53 N	Naterial Tax @	0.0				\$1,313.
Equipment Cost		quipment Tax @	0.0	% \$0.00			\$16,134.1
Subcontractors	\$4,889.00						\$4,889.0
DIRECT COST SUBTOTALS	\$48,607			\$0		DIRECT COST SUBTOTALS	\$48,60
dditional Pay Item Notes :							

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.079	Project : KRRP - JC Boyle			
Description	:	Remove Fish By-Pass and Supports (steel)	Group D03			
Quantity	1.079	610,000.00 lb				
Daily Production	1.079	32,000.00 lb per 10 hour shift	Project # : 1			
Work Days	1.079	19.1 Days	Estimator : Eric Jones	lb per	Total Cost	Unit Price Per Ib
Unit Price	1.079	\$0.24 per lb	Probable Low Cost Parameter	35,200.00	\$131,543	\$3.74
Total Cost	1.079	\$146,159	Probable High Cost Parameter	27,200.00	\$168,083	\$6.18

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Loader, FE Rubber Tire (5.25cy)	Active	1.00	19.1	10	191.00	E	\$76.00	incl. in rate	incl. in rate	\$14,516.00
Acetylene Torches	Active	2.00	19.1	10	382.00	E	\$0.44	incl. in rate	incl. in rate	\$168.08
Labor Foreman	Active	2.00	19.1	10	382.00	L	\$58.87	incl. in rate	incl. in rate	\$22,489.10
Laborer	Active	4.00	19.1	10	764.00	L	\$51.07	incl. in rate	incl. in rate	\$39,019.77
Ironworkers	Active	2.00	19.1	10	382.00	L	\$78.16	incl. in rate	incl. in rate	\$29,855.21
Equipment Operator (medium)	Active	1.00	19.1	10	191.00	L	\$72.34	incl. in rate	incl. in rate	\$13,816.18

Labor Hours	1719	TOTAL LABOR	\$105,180.26
Equipment Hours	573	TOTAL EQUIPMENT	\$14,684.08

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
						\$0.00
Consumables (10% labor)	1.00	LS	1.000	1.00	\$10,518.03	\$10,518.03
Hazardous Material Handling (15% labor)	1.00	LS	1.000	1.00	\$15,777.04	\$15,777.04

TOTAL MATERIAL \$26,295.07

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
					_	\$0.00
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS						
Labor Cost	\$105,180.26 L	abor Burden @	0.0%			\$105,180.26
Material Cost	\$26,295.07 N	Material Tax @	0.00%	\$0.00	1	\$26,295.07
Equipment Cost	\$14,684.08 E	Equipment Tax @	0.00%	\$0.00	1	\$14,684.08
Subcontractors	\$0.00					\$0.00
DIRECT COST SUBTOTALS	\$146,159			\$0	DIRECT COST SUBTOTALS	\$146,159
Additional Pay Item Notes :						

This is to remove the 4 pronged inlet to forebay, spillway steel, and deer escape flume

PAY ITEM INFORMATION
PAY ITEM NUMBER KRRP - JC Boyle : D03 Description Group Quantity
Daily Production 31,250.00 LBS per 10 hour shift Project # 0.6 Days \$0.34 per LBS Estimator : Mihaela Tomulescu Probable Low Cost Parameter LBS per 35,937.50 Total Cost \$5,342 Unit Price Per LBS \$0.15 Unit Price Total Cost \$6,285 Probable High Cost Parameter 21,875.00 \$8,170 \$0.37

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	1.00	0.6	10	6.00	L	\$55.80	incl. in rate	incl. in rate	\$334.82
Electrician	Active	1.00	0.6	10	6.00	L	\$55.80	incl. in rate	incl. in rate	\$334.82
Steelworker	Active	2.00	0.6	10	12.00	L	\$78.10	incl. in rate	incl. in rate	\$937.20
Loader, FE Rubber Tire (8.6cy)	Active	1.00	0.6	10	6.00	E	\$225.40	incl. in rate	incl. in rate	\$1,352.40
Crawler Crane (90tn)	Active	1.00	0.6	10	6.00	E	\$211.22	incl. in rate	incl. in rate	\$1,267.32
Welder	Active	1.00	0.6	10	6.00	E	\$7.84	incl. in rate	incl. in rate	\$47.04
Gas Welding Machine	Active	1.00	0.6	10	6.00	E	\$2.88	incl. in rate	incl. in rate	\$17.26
Equipment Operator (medium)	Active	1.00	0.6	10	6.00	L	\$72.34	incl. in rate	incl. in rate	\$434.02
Equipment Operator (crane)	Active	1.00	0.6	10	6.00	L	\$81.60	incl. in rate	incl. in rate	\$489.59
Laborer	Active	2.00	0.6	10	12.00	L	\$51.07	incl. in rate	incl. in rate	\$612.88

 Labor Hours
 48
 TOTAL LABOR
 \$3,143.32

 Equipment Hours
 24
 TOTAL EQUIPMENT
 \$2,684.02

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$157.17	\$157.17

TOTAL MATERIAL \$157.17

SUBCONTRACT COSTS

Description Quantity Units Notes / Unit Company Price Amount

Hauling Disposal Cost 30 Miles to Klamath County
Landfill 1.00 Loads 20 tons a load \$300.00 \$300.00

SUMMARY OF COSTS \$300.00

Production based on crew 1 Forman, 2 Steelworkers and 1 Welder to cut and attach hooks to 2 gates and 2 hoists for disposal, 2 Laborers to rigging wire rope slings, 1 Electrician to provide power for tools, 1 Truck for disposa to Yreka facility. Assuming 1/2 days of work;

TOTAL MATERIAL

\$2,088.90

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.081	Project	: KRRP - JC Boyle			
Description	:	Remove Trash rack and trash rake (steel)	Group	: D03			
Quantity	:	47,249.00 LBS	<u> </u>				
Daily Production	:	23,100.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.45 per LBS	Probable Low C	ost Parameter	26,565.00	\$18,136	\$0.68
Total Cost	:	\$21,336	Probable High (Cost Parameter	16,170.00	\$27,737	\$1.72

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active		2.0				\$58.87	incl. in rate	incl. in rate	
		1.00		10	20.00	L .				\$1,177.44
Laborer	Active	3.00	2.0	10	60.00	L	\$51.07	incl. in rate	incl. in rate	\$3,064.38
Steelworker	Active	2.00	2.0	10	40.00	L	\$78.10	incl. in rate	incl. in rate	\$3,124.00
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$81.60	incl. in rate	incl. in rate	\$1,631.96
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Crawler Crane (130tn)	Active	1.00	2.0	10	20.00	E	\$262.91	incl. in rate	incl. in rate	\$5,258.20
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Acetylene Torches	Active	2.00	2.0	10	40.00	Е	\$0.47	incl. in rate	incl. in rate	\$18.80
				Labor Hours	160				TOTAL LABOR	\$10,444.50
				Equipment Hours	80				TOTAL EQUIPMENT	\$6,797.00

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (saw blades, drill bits, electrodes, wrenches, hard hats, torch gas, etc)	1.00	LS	1.000	1.00	\$2,088.90	\$2,088.90

SUBCONTRACT COSTS

Pescription Quantity Units Notes / Unit Company Price Amount

Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (25%)

2.36 ton 1.000 \$595.00 \$1,405.66

Hauling Disposal Cost 30 Miles to Klamath County Landfill 2.00 Loads 20 tons a load \$300.00 \$600.00

TOTAL SUBCONTRACTS \$2,005.66

SUMMARY OF COSTS						
Labor Cost	\$10,444.50 Labor	or Burden @	49.7%	\$0.00		\$10,444.50
Material Cost	\$2,088.90 Mater	erial Tax @	0.0%	\$0.00		\$2,088.90
Equipment Cost	\$6,797.00 Equip	ipment Tax @	0.0%	\$0.00		\$6,797.00
Subcontractors	\$2,005.66					\$2,005.66
DIRECT COST SUBTOTALS	\$21,336			\$0	DIRECT COST SUBTOTALS	\$21,336

This pay item is to remove trash rack steel by cutting lose with torches and loading on a contracted haul truck to recycle facility

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.082	Project : KRRP -	JC Boyle		
Description	:	Remove stop Logs and slots (steel)	Group : D03			
Quantity	:	37,069.00 LBS				
Daily Production	:	20,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	1.9 Days	Estimator : Mihaela	Tomulescu LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.56 per LBS	Probable Low Cost Paramet	ter 23,000.00	\$17,786	\$0.77
Total Cost	:	\$20,925	Probable High Cost Parame	ter 14,000.00	\$27,202	\$1.94

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	1.9	10	19.00	L	\$58.87	incl. in rate	incl. in rate	\$1,118.57
Laborer	Active	3.00	1.9	10	57.00	L	\$51.07	incl. in rate	incl. in rate	\$2,911.16
Steelworker	Active	2.00	1.9	10	38.00	L.	\$78.10	incl. in rate	incl. in rate	\$2,967.80
Equipment Operator (crane)	Active	1.00	1.9	10	19.00	L	\$81.60	incl. in rate	incl. in rate	\$1,550.36
Equipment Operator (medium)	Active	1.00	1.9	10	19.00	L	\$72.34	incl. in rate	incl. in rate	\$1,374.38
Crawler Crane (130tn)	Active	1.00	1.9	10	19.00	E	\$262.91	incl. in rate	incl. in rate	\$4,995.29
Loader, FE Rubber Tire (5.25cy)	Active	1.00	1.9	10	19.00	E	\$76.00	incl. in rate	incl. in rate	\$1,444.00
Acetylene Torches	Active	2.00	1.9	10	38.00	E	\$0.47	incl. in rate	incl. in rate	\$17.86
				Labor Hours	152				TOTAL LABOR	\$9,922.28
				Equipment Hours	76				TOTAL EQUIPMENT	\$6,457.15

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, electrodes, wrenches, hard hats etc)						
	1.00	LS	1.000	1.00	\$1,488.34	\$1,488.34

SUBCONTRACT COSTS

Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)					
Hauling Disposal Cost 30 Miles to Klamath County	4.63	ton	1.000	\$595.00	\$2,757.01
Landfill	1.00	Loads	20 tons a load	\$300.00	\$300.00
				TOTAL S	UBCONTRACTS \$3,057.01

SUMMARY OF COSTS			
Labor Cost	\$9,922.28 Labor Burden @	49.7% \$0.00	\$9,
Material Cost	\$1,488.34 Material Tax @	0.0% \$0.00	\$1,
Equipment Cost	\$6,457.15 Equipment Tax @	0.0% \$0.00	\$6,
Subcontractors	\$3,057.01		\$3,
DIRECT COST SUBTOTALS	\$20,925	\$0	DIRECT COST SUBTOTALS \$
Additional Pay Item Notes :			

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.083	Project : KRRP - JC Boyle			
Description	:	Remove & Dispose 14' Diversion Pipe	Group : D03			
Quantity	:	484,200.00 LBS				
Daily Production	:	24,000.00 LBS per 10 hour shift	Project # : 1			
Work Days	:	20.2 Days	Estimator : Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$1.34 per LBS	Probable Low Cost Parameter	27,600.00	\$552,527	\$20.02
Total Cost		\$650.032	Probable High Cost Parameter	19 200 00	\$780.038	\$40.63

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	20.2	10	202.00	L	\$58.87	incl. in rate	incl. in rate	\$11,892.1
Laborer	Active	4.00	20.2	10	808.00	L	\$51.07	incl. in rate	incl. in rate	\$41,266.9
Steelworker	Active	2.00	20.2	10	404.00	L	\$78.10	incl. in rate	incl. in rate	\$31,552.4
Equipment Operator (crane)	Active	2.00	20.2	10	404.00	L	\$81.60	incl. in rate	incl. in rate	\$32,965.5
Equipment Operator (medium)	Active	2.00	20.2	10	404.00	L	\$72.34	incl. in rate	incl. in rate	\$29,223.7
Crawler Crane (90tn)	Active	1.00	20.2	10	202.00	E	\$211.22	incl. in rate	incl. in rate	\$42,666.4
Crawler Crane (270tn)	Active	1.00	20.2	10	202.00	E	\$454.10	incl. in rate	incl. in rate	\$91,728.2
Loader, FE Rubber Tire (5.25cy)	Active	1.00	20.2	10	202.00	E	\$76.00	incl. in rate	incl. in rate	\$15,352.0
Hydraulic Excavator (5.0cy)	Active	1.00	20.2	10	202.00	E	\$276.50	incl. in rate	incl. in rate	\$55,853.0
Boomlift (JLG 60')	Active	2.00	20.2	10	404.00	E	\$52.87	incl. in rate	incl. in rate	\$21,359.4
, ,						E	\$0.47			
Acetylene Torches	Active	4.00	20.2	10	808.00		• •	incl. in rate	incl. in rate	\$379.7
Air Compressor 600 cfm	Active	2.00	20.2	10	404.00	E	\$21.74	incl. in rate	incl. in rate	\$8,782.9
Generator, Small Generator, 10 - 15 kW	Active	2.00	20.2	10	404.00	E	\$7.04	incl. in rate	incl. in rate	\$2,844.10
Hepa Vac System	Active	4.00	20.2	10	808.00	E	\$0.47	incl. in rate	incl. in rate	\$379.7
				Labor Hours	2222				TOTAL LABOR	\$146,900.8
										,

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (saw blades, drill bits,						
torch gas, etc)	1.00	LS	1.000	1.00	\$29,380.17	\$29,380.17
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

TOTAL MATERIAL \$34,380.17

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Access Allowance at Klamath River Hazardous waste cleanup/pickup/disposal, solid	1	AL		\$100,000.00		\$100,000.00
pickup, bulk material, maximum (10% of total)						
Hauling Disposal Cost 30 Miles to Klamath County	24.21	ton		\$595.00		\$14,404.95
Landfill	15.00	Loads		\$1,000.00		\$15,000.00
Shoring Allowance	1	AL		\$100,000.00		\$100,000.00
					TOTAL SUBCONTRACTS	\$229,404.95

SUMMARY OF COSTS					
Labor Cost	\$146,900.86 Labor Burden @	49.7%	\$0.00		\$146,900.86
Material Cost	\$34,380.17 Material Tax @	0.0%	\$0.00		\$34,380.17
Equipment Cost	\$239,345.76 Equipment Tax @	0.0%	\$0.00		\$239,345.76
Subcontractors	\$229,404.95	, and the second			\$229,404.95
DIRECT COST SUBTOTALS	\$650,032	•	\$0	DIRECT COST SUBTOTALS	\$650,032

additional Pay Item Notes :

This payitem is to demolish penstock and haul off site. This activity is expected to be 60% efficient to account for prepping sections of the pipe for cutting due to coating, staff breaks, equipment maintenance, temp shoring, equipment repositioning, and ect. A 90 ton crawler crane will be rigged to the cut section of pipe and once cut if will track near loading location. 130 ton crawler crane will be used as a support crane / hold crane for the adjacent pipe section. There has been a access allowance added to the estimate to account for the section of the penstock going over the Klamath River. This should not affect duration due to one crew being able to work up stream while this access is being created. A shoring allowance has been added for potential sag areas depending where the penstock is cut. Expecting 1 steel worker and 2 laborers to be on either side of the penstock section to prep and cut section.

		1.083 Remove & Dispose 14' Diversion Pipe Details	
High Cost Factors		Low Cost Factors	
Bad Weather	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Issues	5%
	20%		15%

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
	5,050.00	8	60%	24240
	4,000.00	10	60%	24000

Total Lbs	484,200.00		
Assumed Pipe Thickness is 3/4" thick	#N/A		
14' diameter pipe			
Ibs per ft	#N/A	36000	#N/A
Total LF	600.00		
Each Piece at 36k length	#N/A		
Number of pieces	#N/A		

F	PAY ITEM INFORMATION							
	PAY ITEM NUMBER	:	1.083.1	Project	: KRRP - JC Boyle			
	Description	:	Remove & Dispose 9'-6" to 10'-6" Penstocks	Group	: D03			
	Quantity	:	953,250.00 LBS					
	Daily Production	:	30,300.00 LBS per 10 hour shift	Project #	: 1			
	Work Days	:	31.5 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
	Unit Price	:	\$0.81 per LBS	Probable Low	Cost Parameter	34,845.00	\$654,704	\$18.79
	Total Cost		\$770.240	Probable High	Cost Parameter	24.240.00	\$924.288	\$38.13

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
abor Foreman	Active	1.00	31.5	10	315.00	L	\$58.87	incl. in rate	incl. in rate	\$18,544.6
aborer	Active	4.00	31.5	10	1,260.00	L	\$51.07	incl. in rate	incl. in rate	\$64,351.9
Steelworker	Active	2.00	31.5	10	630.00	L	\$78.10	incl. in rate	incl. in rate	\$49,203.0
Equipment Operator (crane)	Active	2.00	31.5	10	630.00	L	\$81.60	incl. in rate	incl. in rate	\$51,406.7
Equipment Operator (medium)	Active	2.00	31.5	10	630.00	L	\$72.34	incl. in rate	incl. in rate	\$45,571.6
Crawler Crane (90tn)	Active	1.00	31.5	10	315.00	E	\$211.22	incl. in rate	incl. in rate	\$66,534.3
Crawler Crane (270tn)	Active	1.00	31.5	10	315.00	E	\$454.10	incl. in rate	incl. in rate	\$143,041.5
Loader, FE Rubber Tire (5.25cy)	Active	1.00	31.5	10	315.00	E	\$76.00	incl. in rate	incl. in rate	\$23,940.0
Hydraulic Excavator (5.0cy)	Active	1.00	31.5	10	315.00	E	\$276.50	incl. in rate	incl. in rate	\$87,097.5
Boomlift (JLG 60')	Active	2.00	31.5	10	630.00	E	\$52.87	incl. in rate	incl. in rate	\$33,308.1
Poomlift (II G 60%	Activo	2.00	21.5	10	620.00	_	\$52.07	ingl in rate	ingl in rate	\$22.200.10
Acetylene Torches	Active	4.00	31.5	10	1,260.00	E	\$0.47	incl. in rate	incl. in rate	\$592.2
Air Compressor 600 cfm	Active	2.00	31.5	10	630.00	E	\$21.74	incl. in rate	incl. in rate	\$13,696.2
Generator, Small Generator, 10 - 15 kW	Active	2.00	31.5	10	630.00	E	\$7.04	incl. in rate	incl. in rate	\$4,435.2
Hepa Vac System	Active	4.00	31.5	10	1,260.00	E	\$0.47	incl. in rate	incl. in rate	\$592.2
				Labor Hours	3465				TOTAL LABOR	\$229,078.0
				Equipment Hours	5670				TOTAL EQUIPMENT	\$373,237.2
				1.1		•				, , ,
IATERIAL COSTS Description	Item	Order		Conversion	Order		Order			Material

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 20% labor (saw blades, drill bits,						
torch gas, etc)	1.00	LS	1.000	1.00	\$45,815.62	\$45,815.62
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.00
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.00

TOTAL MATERIAL	\$50,815.62	1
		1

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10% of total)					
Hauling Disposal Cost 30 Miles to Klamath County	47.66	ton		\$595.00	\$28,359.19
Landfill Shoring Allowance	38.75 1	Loads AL		\$1,000.00 \$50,000.00	\$38,750.00 \$50,000.00

TOTAL SUBCONTRACT	S \$117,109.19
SUMMARY OF COSTS	

Labor Cost	\$229,078.08	Labor Burden @	49.7%	\$0.00	\$229,078.08
Material Cost	\$50,815.62	\$50,815.62	\$50,815.62		
Equipment Cost	\$373,237.20	\$20			
Subcontractors	\$117,109.19				
DIRECT COST SUBTOTALS	\$770,240	\$0.00			
DIRECT COST SUBTOTALS	\$770,240				
Subcontractors	\$10	\$10	\$10		
Subcontractors	\$10	\$10			
Subcontractors	\$10	\$10			
Subcontractors	\$117,109.19				
Subcontr					

Additional Pay Item Notes :

This payitem is to demolish the 9-6" to 10-6" penstock and haul off site. This activity is expected to be 60% efficient to account for prepping sections of the pipe for cutting due to coating, staff breaks, equipment maintenance, temp shoring, equipment repositioning, and ect. A 90 ton crawler crane will be rigged to the cut section of pipe and once cut it will track near loading location. 130 ton crawler crane will be used as a support crane to load trucks and other misc requirements. A shoring allowance has been added for potential sag areas depending where the penstock is cut. Expecting 1 steel worker and 2 laborers to be on either side of the penstock section to prep and cut section.

High Cost Factors		Low Cost Factors	
Bad Weather Gas Price Increase	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Issues	5%
	20%		15%

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
	5,050.00	8	60%	24240
	5,050.00	10	60%	30300

Total Lbs	953,250.00
Wall Thickness 3/8" (Plan Sheet AA78164)	0.375
10'-8" AVG diameter pipe	0
Ibs per ft pipe	512
Lbs per Ft Allowance for Connections & Flanges 20%	103
Total Lbs Per FT	615
Total LF	1,550
Length of Pipe Each Load	40 Length of Trailer 48'
Weight Per Load	24,600 Max Weight 36K Lbs
Number of Loads	39

TOTAL MATERIAL

\$8,745.66

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.084	Project	: KRRP - JC Boyle	,		
Description	:	Remove & Dispose Surge Tank (steel)	Group	: D03			
Quantity	:	79,000.00 LBS					
Daily Production	:	15,000.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	5.3 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.77 per LBS	Probable Low	Cost Parameter	16,500.00	\$55,037	\$3.34
Total Cost	:	\$61,152	Probable High	Cost Parameter	10,500.00	\$79,498	\$7.57

	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.3	10	53.00	L	\$58.87	incl. in rate	incl. in rate	\$3,120.22
Laborer	Active	2.00	5.3	10	106.00	L	\$51.07	incl. in rate	incl. in rate	\$5,413.74
Steelworker	Active	2.00	5.3	10	106.00	L	\$78.10	incl. in rate	incl. in rate	\$8,278.60
Equipment Operator (crane)	Active	1.00	5.3	10	53.00	L	\$81.60	incl. in rate	incl. in rate	\$4,324.69
Equipment Operator (medium)	Active	1.00	5.3	10	53.00	L	\$72.34	incl. in rate	incl. in rate	\$3,833.81
Hydraulic Crane (120tn)	Active	1.00	5.3	10	53.00	E	\$242.08	incl. in rate	incl. in rate	\$12,830.24
Loader, FE Rubber Tire (5.25cy)	Active	1.00	5.3	10	53.00	E	\$76.00	incl. in rate	incl. in rate	\$4,028.00
Boomlift (JLG 60')	Active	2.00	5.3	10	106.00	E	\$52.87	incl. in rate	incl. in rate	\$5,604.22
, ,	Active Active	2.00	5.3 5.3	10 10	106.00 106.00	E E	\$52.87 \$0.47	incl. in rate	incl. in rate	
Acetylene Torches										\$49.82
Acetylene Torches Air Compressor 600 cfm	Active	2.00	5.3	10	106.00	Е	\$0.47	incl. in rate	incl. in rate	\$49.82 \$1,152.22
Boomlift (JLG 60') Acetylene Torches Air Compressor 600 cfm Generator, Small Generator, 10 - 15 kW Hepa Vac System	Active Active	2.00 1.00	5.3 5.3	10 10	106.00 53.00	E E	\$0.47 \$21.74	incl. in rate incl. in rate	incl. in rate	\$5,604.22 \$49.82 \$1,152.22 \$746.24 \$74.73
Acetylene Torches Air Compressor 600 cfm Generator, Small Generator, 10 - 15 kW	Active Active Active	2.00 1.00 2.00	5.3 5.3 5.3	10 10 10	106.00 53.00 106.00	E E	\$0.47 \$21.74 \$7.04	incl. in rate incl. in rate incl. in rate	incl. in rate incl. in rate incl. in rate	\$49.82 \$1,152.22 \$746.24

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, drill bits, electrodes, wrenches, hard hats etc)						
	1.00	LS	1.000	1.00	\$3,745.66	\$3,745.0
HEPA Vac Systems For Grinders	4.00	EA	1.000	4.00	\$1,000.00	\$4,000.0
Handheld Grinders	4.00	EA	1.000	4.00	\$250.00	\$1,000.0
Tanansia Simasis		L/·	1.000	1.00	\$200.00	• • • • • • • • • • • • • • • • • • • •

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)					
Hauling Disposal Cost 30 Miles to Klamath	3.95	ton	1.000	\$595.00	\$2,350.25
County Landfill	2.00	Loads	20 tons a load	\$300.00	\$600.00
				TOTAL SUI	PCONTRACTS \$2.050.25

SUMMARY OF COSTS					
Labor Cost	\$24,971.06	Labor Burden @	49.7%	\$0.00	
Material Cost	\$8,745.66	Material Tax @	0.0%	\$0.00	
Equipment Cost	\$24,485.47	Equipment Tax @	0.0%	\$0.00	
Subcontractors	\$2,950.25				
DIRECT COST SUBTOTALS	\$61,152			\$0	DIRECT COST SUBTOTALS
Additional Day Itam Natas					

This payitem is to remove the surge tank down stream from the concrete power canal. The cost to create access to the surge take is covered under the temp access road payitem. The activity production is expected to be 60% efficient to account for mobilizing equipment at the tank, equipment maintenance, employee breaks, and tank preparation for cutting. It is expected that tank will be demolished by cutting into 20K lb pieces and load on truck to haul to recycle plant.

TOTAL MATERIAL

\$6,885.73

PAY ITEM COST DETAIL WORKSHEET

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	5.1	10	51.00	L	\$58.87	incl. in rate	incl. in rate	\$3,002.47
Steelworker	Active	2.00	5.1	10	102.00	L	\$78.10	incl. in rate	incl. in rate	\$7,966.20
Laborer	Active	4.00	5.1	10	204.00	L	\$51.07	incl. in rate	incl. in rate	\$10,418.89
Equipment Operator (crane)	Active	1.00	5.1	10	51.00	L	\$81.60	incl. in rate	incl. in rate	\$4,161.50
Equipment Operator (medium)	Active	1.00	5.1	10	51.00	L	\$72.34	incl. in rate	incl. in rate	\$3,689.14
Crawler Crane (130tn)	Active	1.00	5.1	10	51.00	E	\$262.91	incl. in rate	incl. in rate	\$13,408.41
Loader, FE Rubber Tire (5.25cy)	Active	1.00	5.1	10	51.00	E	\$76.00	incl. in rate	incl. in rate	\$3,876.00
Acetylene Torches	Active	2.00	5.1	10	102.00	E	\$0.47	incl. in rate	incl. in rate	\$47.94
Air Compressor 600 cfm	Active	1.00	5.1	10	51.00	E	\$21.74	incl. in rate	incl. in rate	\$1,108.74
Generator, Small Generator, 10 - 15 kW	Active	2.00	5.1	10	102.00	E	\$7.04	incl. in rate	incl. in rate	\$718.08
Hepa Vac System	Active	2.00	5.1	10	102.00	E	\$0.47	incl. in rate	incl. in rate	\$47.94
				Labor Hours	459				TOTAL LABOR	\$29,238.20

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 15% labor (saw blades, electrodes,						
drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$4,385.73	\$4,385.7
HEPA Vac Systems For Grinders	2.00	EA	1.000	2.00	\$1,000.00	\$2,000.0
Handheld Grinders	2.00	EA	1.000	2.00	\$250.00	\$500.0

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (50%)					
Hauling Disposal Cost 30 Miles to Klamath County	37.00	ton	1.000	\$595.00	\$22,015.00
Landfill	4.00	Loads	20 tons a load	\$300.00	\$1,200.00
				TOTAL	SUBCONTRACTS \$22,245,00

SUMMARY OF COSTS			
Labor Cost	\$29,238.20 Labor Burden @	49.7% \$0.00	\$29,238
Material Cost	\$6,885.73 Material Tax @	0.0% \$0.00	\$6,885
Equipment Cost	\$19,207.11 Equipment Tax @	0.0% \$0.00	\$19,207
Subcontractors	\$23,215.00		\$23,215
DIRECT COST SUBTOTALS	\$78,546	\$0	DIRECT COST SUBTOTALS \$78,
Additional Pay Item Notes :			

TOTAL MATERIAL

\$2,429.16

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.086	Project	: KRRP - JC Boyle			
Description	:	Remove & Dispose Gate, Stem and Frame	Group	: D03			
Quantity	:	28,000.00 LBS					
Daily Production	:	13,875.00 LBS per 10 hour shift	Project #	: 1			
Work Days	:	2.0 Days	Estimator	: Mihaela Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price	:	\$0.74 per LBS	Probable Low	Cost Parameter	15,262.50	\$18,741	\$1.23
Total Cost	:	\$20,823	Probable High	Cost Parameter	11,100.00	\$24,987	\$2.25

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	2.0	10	20.00	L	\$58.87	incl. in rate	incl. in rate	\$1,177.44
Laborer	Active	2.00	2.0	10	40.00	L	\$51.07	incl. in rate	incl. in rate	\$2,042.92
Steelworker	Active	1.00	2.0	10	20.00	L	\$78.10	incl. in rate	incl. in rate	\$1,562.00
Equipment Operator (crane)	Active	1.00	2.0	10	20.00	L	\$81.60	incl. in rate	incl. in rate	\$1,631.96
Equipment Operator (medium)	Active	1.00	2.0	10	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Hydraulic Crane (80tn)	Active	1.00	2.0	10	20.00	E	\$197.66	incl. in rate	incl. in rate	\$3,953.20
Loader, FE Rubber Tire (5.25cy)	Active	1.00	2.0	10	20.00	E	\$76.00	incl. in rate	incl. in rate	\$1,520.00
Acetylene Torches	Active	1.00	2.0	10	20.00	E	\$0.47	incl. in rate	incl. in rate	\$9.40
	Active	1.00	2.0	10	20.00	E	\$21.74	incl. in rate	incl. in rate	\$434.80
Air Compressor 600 cfm			2.0	10	20.00	E	\$7.04	incl. in rate	incl. in rate	\$140.80
Air Compressor 600 cfm Generator, Small Generator, 10 - 15 kW	Active	1.00	2.0							
	Active Active	1.00 1.00	2.0	10	20.00	Е	\$0.47	incl. in rate	incl. in rate	\$9.40
Generator, Small Generator, 10 - 15 kW					20.00	E	\$0.47	incl. in rate	incl. in rate TOTAL LABOR	\$9.40 \$7,861.04

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
drill bits, torch gas, etc)	1.00	LS	1.000	1.00	\$1,179.16	\$1,179.1
HEPA Vac Systems For Grinders	1.00	EA	1.000	1.00	\$1,000.00	\$1,000.0
Handheld Grinders	1.00	EA	1.000	1.00	\$250.00	\$250.0

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (50%)					
Hauling Disposal Cost 30 Miles to Klamath County	7.00	ton	1.000	\$595.00	\$4,165.00
Landfill	1.00	Loads	20 tons a load	\$300.00	\$300.00
				TOTAL SUBC	DNTRACTS \$4,465.00

SUMMARY OF COSTS				
Labor Cost	\$7,861.04 Labor Burden @	49.7% \$0.00		\$7,861.0
Material Cost	\$2,429.16 Material Tax @	0.0% \$0.00		\$2,429.1
Equipment Cost	\$6,067.60 Equipment Tax @	0.0% \$0.00		\$6,067.6
Subcontractors	\$4,465.00			\$4,465.0
DIRECT COST SUBTOTALS	\$20,823	\$0	DIRECT COST SUBTOTALS	\$20,82
Additional Pay Item Notes :				_

DIRECT COST SUBTOTALS

Additional Pay Item Notes :

\$87,446

PAY ITEM INFORMATION										
	1.087				Project	: KRRP-J	C Boyle			
Description : Quantity :	Remove & Dispose 250,000.00		nsition Manifo	ds on Upstream and Downstream	Group	: D03				
Daily Production :	37,500.00	LBS per	10 hou	r shift	Project #	: 1				
Work Days :	6.7	Day	S		Estimator		Tomulescu	LBS per	Total Cost	Unit Price Per LBS
Unit Price : Total Cost :	\$87,446	per LBS			Probable Low Probable High			43,125.00 26,250.00	\$74,329 \$113,680	\$1.72 \$4.33
	4 -1,110								***************************************	¥
CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	6.7	10	67.00	L	\$58.87	incl. in rate	incl. in rate	\$3,944.42
Millwright	Active	3.00	6.7	10	201.00	L	\$82.04	incl. in rate	incl. in rate	\$16,489.64
Equipment Operator (crane)	Active	1.00	6.7	10	67.00	L	\$81.60	incl. in rate	incl. in rate	\$5,467.07
Crawler Crane (130tn)	Active	1.00	6.7	10	67.00	E	\$262.91	incl. in rate	incl. in rate	\$17,614.97
Electrician	Active	1.00	6.7	10	67.00	L	\$55.80	incl. in rate	incl. in rate	\$3,738.80
Equipment Operator (medium)	Active	1.00	6.7	10	67.00	L	\$72.34	incl. in rate	incl. in rate	\$4,846.51
Hydraulic Excavator (5.0cy)	Active	1.00	6.7	10	67.00	E	\$276.50	incl. in rate	incl. in rate	\$18,525.50
Steelworker	Active	1.00	6.7	10	67.00	L	\$78.10	incl. in rate	incl. in rate	\$5,232.70
Acetylene Torches	Active	2.00	6.7	10 Labor Hours Equipment Hours		Ē	\$0.47	incl. in rate	incl. in rate TOTAL LABOR TOTAL EQUIPMENT	\$62.98 \$39,719.14 \$36,203.45
MATERIAL COSTS										
Description	Item	Order		Conversion	Order		Order			Material
	Quantity	Unit		Factor / Waste	Quantity		Price			Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS		1.000	1.00)	\$1,985.96			\$1,985.96
									TOTAL MATERIAL	\$1,985.96
SUBCONTRACT COSTS										
	Quantity	Units		Notes /		Unit				Contract or Quote
Description	Quantity	Units		Notes / Company		Unit Price				Contract or Quote Amount
	Quantity	Units								
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%)	Quantity	Units					\$595.00			
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%) Hauling Disposal Cost 30 Miles to Klamath				Company			\$595.00 \$300.00			Amount
Hazardous waste cleanup/pickup/disposal, solid	12.50	ton		Company				T	OTAL SUBCONTRACTS	Amount \$7,437.50
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%) Hauling Disposal Cost 30 Miles to Klamath	12.50	ton		Company				71	DTAL SUBCONTRACTS	Amount \$7,437.50 \$2,100.00
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%) Hauling Disposal Cost 30 Miles to Klamath	12.50	ton		Company				Т	DTAL SUBCONTRACTS	Amount \$7,437.50 \$2,100.00
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%) Hauling Disposal Cost 30 Miles to Klamath County Landfill SUMMARY OF COSTS Labor Cost	12.50 7.00 \$39,719.14	ton Loads Labor Burde		1.000 20 tons a load		Price		Ţ	DTAL SUBCONTRACTS	\$7,437.50 \$2,100.00 \$9,537.50
Description Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, maximum (10%) Hauling Disposal Cost 30 Miles to Klamath County Landfill SUMMARY OF COSTS	12.50 7.00 \$39,719.14	ton Loads Labor Burder Material Tax	@	1.000 20 tons a load	\$0.00	Price		Ti	DTAL SUBCONTRACTS	\$7,437.50 \$2,100.00 \$9,537.50

\$0

DIRECT COST SUBTOTALS

\$87,446

TOTAL MATERIAL

TOTAL SUBCONTRACTS

\$200.59

\$2,160.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.087a	Project	: KRRP - JC Boyle			
Description	:	Remove petroleum products from Mechanical Equipment	Group	: D09			
Quantity	:	380.00 GAL	_				
Daily Production	:	437.50 GAL per 10 hour shift	Project #	: 1			
Work Days	:	0.9 Days	Estimator	: Mihaela Tomulescu	GAL per	Total Cost	Unit Price Per GAL
Unit Price	:	\$18.05 per GAL	Probable Low Co	st Parameter	503.13	\$5,831	\$11.59
Total Cost		0.08 0.28	Probable High Co	et Parameter	306.25	\$8.018	\$29.12

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.9	10	9.00	L	\$58.87	incl. in rate	incl. in rate	\$529.85
Electrician	Active	1.00	0.9	10	9.00	L	\$55.80	incl. in rate	incl. in rate	\$502.23
Laborer	Active	5.00	0.9	10	45.00	L	\$51.07	incl. in rate	incl. in rate	\$2,298.29
Truck Driver (heavy)	Active	1.00	0.9	10	9.00	L	\$75.72	incl. in rate	incl. in rate	\$681.52
Truck, Flatbed (4x4, 10,000 gvw)	Active	2.00	0.9	10	18.00	E	\$27.09	incl. in rate	incl. in rate	\$487.62

L				
ĺ	Labor Hours	72	TOTAL LABOR	\$4,011.88
	Equipment Hours	18	TOTAL EQUIPMENT	\$487.62

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$200.59	\$200.59

SUBCONTRACT COSTS					
Description	Quantity	Units	Notes /	Unit	Contract or Quote
			Company	Price	Amount
Hazardous waste cleanup/pickup/disposal, liquid pickup, vacuum truck, stainless steel tank, 5000 gallons, minimum charge, 4 hours, 2 compartment	8.00	hour	1.000	\$270.00	\$2,160.00

SUMMARY OF COSTS					
Labor Cost	\$4,011.88	Labor Burden @	49.7%	\$0.00	\$4,011.88
Material Cost	\$200.59	Material Tax @	0.0%	\$0.00	\$200.59
Equipment Cost	\$487.62	Equipment Tax @	0.0%	\$0.00	\$487.62
Subcontractors	\$2,160.00				\$2,160.00

DIRECT COST SUBTOTALS DIRECT COST SUBTOTALS \$0 \$6.860 \$6.860

dditional Pay Item Notes

Petroleum-based products, ranging from fuel oil and hydraulic fluid to lubricating greases and oils, are found throughout every type of power generating plant or system. Lubrication supports bearings and moving parts in all sorts of equipment: pumps, conveyors, feeders, scrubbers, cranes, turbines, and more. A good oil/water separation system will result in a flow of concentrated waste oil to a collection area and a flow of oil-free water ready for secondary processing or discharge. Once an oil layer has been separated from free water, it must be removed for recycling or disposal. Many plants use one or more of these oil removal methods, but each has costly limitations:

1. Absorbent materials. Absorbent mats or materials are frequently used to dam up and absorb excess oils and greases resulting from accidents or the routine operation of machinery. These materials are very effective for preventing the spread of a source leak and very efficient in terms of oil pickup. Yet, their use on large volumes of waste oil results in multiple, recurring costs that can make them impractical as an everyday solution:

• the costs of the materials themselves

• the labor costs for ordering, stocking, application, and removal

• the labor costs for ordering, stocking, application, and removal

• the costs of used-media collection, disposal, or re-processing/recycling.

2. Manually operated "slotted pipes." Many separators feature a "slotted pipe," a pipe located near the top of the vessel that has a horizontal opening. Oil is removed by turning the horizontal opening downward until it meets the floating oil layer, which drains through the pipe to a collection receptacle. These pipes work well on thick layers of oil, but cannot drain off a sheen of oil without draining off a large amount of water as well.

AECOM assumed the best is Vacuum truck removal method. Used a crew formed of 1 Forman, 5 Laborers to takeout the petroleum waste, 1 Electrician to unplug the power and to assure the temporary power at the construction site. Va

TOTAL LABOR

TOTAL EQUIPMENT

\$51,728.60

\$47,251.00

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.088	Project	: KRRP - JC Boyle			
Description	:	Install and Remove Temporary Access Roads for Penstock	Demo Group	#N/A			
Quantity	1.088	2.00 Mile					
Daily Production	1.088	0.20 Mile per 10 hour shift	Project #	: 1			
Work Days	1.088	10.0 Days	Estimator	: Eric Jones	Mile per	Total Cost	Unit Price Per Mile
Unit Price	1.088	\$84,017.30 per Mile	Probable Low	Cost Parameter	0.22	\$151,231	\$687,414.27
Total Cost	1.088	\$168.035	Probable High	Cost Parameter	0.16	\$201,642	\$1,260,259.50

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Dozer (235hp)(CATD7)	Active	1.00	10.0	10	100.00	Е	\$171.07	incl. in rate	incl. in rate	\$17,107.0
Grader, 180hp, 13' blade	Active	1.00	10.0	10	100.00	E	\$84.69	incl. in rate	incl. in rate	\$8,469.00
Roller, Dbl Drum (steel wheel, 5.0 - 7.9 MTn)	Active	1.00	10.0	10	100.00	E	\$65.72	incl. in rate	incl. in rate	\$6,572.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	10.0	10	100.00	E	\$76.00	incl. in rate	incl. in rate	\$7,600.00
Equipment Operator (medium)	Active	4.00	10.0	10	400.00	L	\$72.34	incl. in rate	incl. in rate	\$28,934.40
Truck Driver (heavy)	Active	1.00	10.0	10	100.00	L	\$66.92	incl. in rate	incl. in rate	\$6,692.40
Water Tanker (5,000gal)	Active	1.00	10.0	10	100.00	E	\$75.03	incl. in rate	incl. in rate	\$7,503.00
Laborer	Active	2.00	10.0	10	200.00	L	\$51.07	incl. in rate	incl. in rate	\$10,214.60
Labor Foreman	Active	1.00	10.0	10	100.00	L	\$58.87	incl. in rate	incl. in rate	\$5,887.20

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Gravel Surfacing	4,200.00	TN	1.300	5,460.00	\$11.75	\$64,155.00

Labor Hours

Equipment Hours

800

500

TOTAL MATERIAL \$64,155.00

Notes /	Unit	_
1401037	Unit	Contract or Quote
Company	Price	Amount
18 tons a load	\$21.00	\$4,900.00

			TOTAL SUBCONTRACTS	\$4,900.00
SUMMARY OF COSTS				
Labor Cost	\$51,728.60 Labor Burden @	0.0%		\$51,728.6
Material Cost	\$64,155.00 Material Tax @	0.00% \$0.00		\$64,155.0
Equipment Cost	\$47,251.00 Equipment Tax @	0.00% \$0.00		\$47,251.00
Subcontractors	\$4,900.00			\$4,900.00
DIRECT COST SUBTOTALS	\$168,035	\$0	DIRECT COST SUBTOTALS	\$168,035
Additional Pay Item Notes :			_	

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.097	Project : KRRP - JC Boyle			
Description	:	Clear and Grub Disposal Area (Embankment)	Group : D11			
Quantity	1.097	10.00 AC				
Daily Production	1.097	3.00 AC per 10 hour shift	Project # : 1			
Work Days	1.097	3.3 Days	Estimator : Eric Jones	AC per	Total Cost	Unit Price Per AC
Unit Price	1.097	\$3,150.94 per AC	Probable Low Cost Parameter	3.30	\$28,358	\$8,593.47
Total Cost	1.097	\$31,509	Probable High Cost Parameter	2.70	\$34,660	\$12,837.16

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	3.3	10	33.00	L	\$58.87	incl. in rate	incl. in rate	\$1,942.78
Laborer	Active	2.00	3.3	10	66.00	L	\$51.07	incl. in rate	incl. in rate	\$3,370.82
Equipment Operator (medium)	Active	3.00	3.3	10	99.00	L	\$72.34	incl. in rate	incl. in rate	\$7,161.26
Truck Driver (heavy)	Active	1.00	3.3	10	33.00	L	\$66.92	incl. in rate	incl. in rate	\$2,208.49
Loader, FE Rubber Tire (5.25cy)	Active	1.00	3.3	10	33.00	E	\$76.00	incl. in rate	incl. in rate	\$2,508.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	3.3	10	33.00	E	\$57.41	incl. in rate	incl. in rate	\$1,894.53
Hydraulic Excavator (2.5cy)	Active	1.00	3.3	10	33.00	E	\$205.40	incl. in rate	incl. in rate	\$6,778.20
Dozer (235hp)(CATD7)	Active	1.00	3.3	10	33.00	Е	\$171.07	incl. in rate	incl. in rate	\$5,645.3
				Labor Hours	231				TOTAL LABOR	\$14,683.3
			Eau	ipment Hours	132			TC	TAL EQUIPMENT	\$16,826.

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
		C	ompany	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$14,683.35 Labor Burden @	0.0%		\$14,683.35
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$16,826.04 Equipment Tax @	0.00% \$0.00		\$16,826.04
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$31,509	\$0	DIRECT COST SUBTOTALS	\$31,509
Additional Pay Item Notes :			_	
Hauling material to 1/2 mile ensite d	ump location, 2 excavators clearing trees and brush, 2	loadore loading dump trucks, laborare	s will be directing trucks foreman will everses	
Hadiling material to 1/2 mile offsite di	ump location, 2 excavators cleaning trees and brush, 2	loaders loading dump trucks, laborers	s will be directing trucks, foreman will oversee	

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.098		Project	: KRRP - JC Boyle			
Description	:	Clear and Grub, 40' width for h	Haul Roads	Group	: D11			
Quantity	1.098	2.40 AC		<u></u> '				
Daily Production	1.098	3.00 AC per	10 hour shift	Project #	: 1			
Work Days	1.098	0.8 Days		Estimator	: Eric Jones	AC per	Total Cost	Unit Price Per AC
Unit Price	1.098	\$3,182.77 per AC		Probable Low (Cost Parameter	3.30	\$6,875	\$2,083.27
Total Cost	1.098	\$7,639		Probable High	Cost Parameter	2.70	\$8,403	\$3,112.04

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
2	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	0.8	10	8.00	L	\$58.87	incl. in rate	incl. in rate	\$470.98
Laborer	Active	2.00	8.0	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Equipment Operator (medium)	Active	3.00	8.0	10	24.00	L	\$72.34	incl. in rate	incl. in rate	\$1,736.06
Truck Driver (heavy)	Active	1.00	0.8	10	8.00	L	\$66.92	incl. in rate	incl. in rate	\$535.39
Loader, FE Rubber Tire (5.25cy)	Active	1.00	8.0	10	8.00	Е	\$76.00	incl. in rate	incl. in rate	\$608.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	8.0	10	8.00	E	\$57.41	incl. in rate	incl. in rate	\$459.28
Hydraulic Excavator (2.5cy)	Active	1.00	0.8	10	8.00	E	\$205.40	incl. in rate	incl. in rate	\$1,643.20
Dozer (235hp)(CATD7)	Active	1.00	0.8	10	8.00	Е	\$171.07	incl. in rate	incl. in rate	\$1,368.56
			ı	abor Hours	56				TOTAL LABOR	\$3,559.60
			Equip	ment Hours	32			тс	TAL EQUIPMENT	\$4,079.04

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	Material	
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost	
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Descrip	otion Q	uantity Unit	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS Labor Cost	\$3,559.60 Labor Burden @	0.0%		\$3,559.60
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$4,079.04 Equipment Tax @	0.00% \$0.00		\$4,079.04
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$7,639	\$0	DIRECT COST SUBTOTALS	\$7,639
Additional Pay Item Notes :				
Havilian material to 4/0 mile analta	dump location, 2 excavators clearing trees and brush,	2 loaders loading dump trucks, laborers will be	directing trucks, foreman will everses	
	dump location 2 excavatore clearing trees and brush	2 loaders loading dump trucks, laborers will be	directing trucks, foreman will oversee	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.103	Project	: KRRP - JC Boyle			
Description	:	Soil/ Rock Cover Relocation For Concrete Rubble at Scour Hole	Group	: D15			
Quantity	1.103	13,000.00 CY					
Daily Production	1.103	450.00 CY per 10 hour shift	Project #	: 1			
Work Days	1.103	28.9 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.103	\$16.98 per CY	Probable Low	Cost Parameter	495.00	\$198,621	\$401.25
Total Cost	1.103	\$220.690	Probable High	Cost Parameter	360.00	\$264.827	\$735.63

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Hydraulic Excavator (2.5cy)	Active	1.00	28.9	10	289.00	Е	\$205.40	incl. in rate	incl. in rate	\$59,360.60
Dozer (235hp)(CATD7)	Active	1.00	28.9	10	289.00	E	\$171.07	incl. in rate	incl. in rate	\$49,439.23
Truck, Off-Road, Articulated Rear, 20cy	Active	2.00	16.1	10	321.44	E	\$117.28	incl. in rate	incl. in rate	\$37,698.48
Labor Foreman	Active	1.00	28.9	10	289.00	L	\$58.87	incl. in rate	incl. in rate	\$17,014.01
Laborer	Active	1.00	28.9	10	289.00	L	\$51.07	incl. in rate	incl. in rate	\$14,760.10
Equipment Operator (medium)	Active	1.00	28.9	10	289.00	L	\$72.34	incl. in rate	incl. in rate	\$20,905.10
Truck Driver (heavy)	Active	2.00	16.1	10	321.44	L	\$66.92	incl. in rate	incl. in rate	\$21,512.05
				Labor Hours	1188.44	1			TOTAL LABOR	\$74,191.2

Description	Item	Order	Conversion	Order	Order	-	Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity Units	Notes /	Unit		Contract or Quote
		Company	Price		Amount
				_	
				TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$74,191.26 Labor Burden @	0.0%		\$74,191.26
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$146,498.31 Equipment Tax @	0.00% \$0.00		\$146,498.31
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$220,690	\$0	DIRECT COST SUBTOTALS	\$220,690
Additional Pay Item Notes :				

	1.103 Soil/ Rock Cover Relocation For C Details	concrete Rubble at Scour Hole	
High Cost Factors		Low Cost Factors	
Bad Weather Gas Price Increase	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Issues	0%
	20%		10%

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Etc.)	Overall Production	
	90	В	50%	3
	10	0	50%	4
laul Notes				
CY	13,000.00			
Swell Factor	50%	6		
Bulk CY	19,500.00			
Haul Vehicle 85% Capacity (1.3 tons per CY)	17.00			
of Haul Vehicles	2.00			
oad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)	4.00			
Dump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)	4.00			
Haul Speed (Loaded MPH)	5.00			
Return Speed (Unloaded MPH)	5.00			
Haul Distance (Miles)	0.25			
Shift Length (Hours)	10.00			
The Early (Tours)	10.00			
Cycle Time				
.oad Time (Load Time Minutes / 60mins)	0.07	7		
Haul Time (Haul Distance / Haul Speed)	0.03			
Dump Time (Dump Time Minutes / 60 Mins)	0.07	7		
Return Time (Haul Distance / Return Speed)	0.09			
Hours Per Cycle Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT)	0.24			
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	85%			
lumber of Cycles (Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles)	0.20 574			
otal Number of Cycles Buik C17 (Haul Venicle Cap X # of Haul Venicles)	160.73			
oads Per Hour (Number of Cycles / Total Number of Haul Hours)	3.57	7		
lumber of Haul Days	16.07			

ther Notes

This pay items is to account for moving existing material from bottom of scour hole to lot pof scour hole no lot pof yet packed that the existing haul road will be restored and used to transport material from the bottom to the top. The efficiency of this operation is has been reduced to 50% to account for redevelopment on the existing haul road which will be done with a dozer and accurator. Due to the steep stopped a dozer will need to be used to maintain a rideable surface for the articulated had ut truck.

MATERIAL COSTS

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.103.1	Project	: KRRP - JC Boyle			
Description	:	Rock/Soil Cover Placement Over Concrete Rubble at Scour Hole	Group	: D11			
Quantity	1.103.1	13,000.00 CY					
Daily Production	1.103.1	1,200.00 CY per 10 hour shift	Project #	: 1			
Work Days	1.103.1	10.8 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.103.1	\$5.67 per CY	Probable Low	Cost Parameter	1,320.00	\$66,306	\$50.23
Total Cost	1.103.1	\$73,673	Probable High	n Cost Parameter	960.00	\$88 408	\$92.09

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper	Burden	Labor / Equipment
Description	Idle	# III	Worked	/day	Hours	L/E	Rate	Hrly oper. Cost	Rate	Cost
Hydraulic Excavator (2.5cy)	Active	1.00	10.8	10	108.00	Е	\$205.40	incl. in rate	incl. in rate	\$22,183.20
Dozer (235hp)(CATD7)	Active	1.00	10.8	10	108.00	Е	\$171.07	incl. in rate	incl. in rate	\$18,475.56
Labor Foreman	Active	1.00	10.8	10	108.00	L	\$58.87	incl. in rate	incl. in rate	\$6,358.18
Laborer	Active	2.00	10.8	10	216.00	L	\$51.07	incl. in rate	incl. in rate	\$11,031.77
Equipment Operator (medium)	Active	2.00	10.8	10	216.00	L	\$72.34	incl. in rate	incl. in rate	\$15,624.58
				Labor Hours	540				TOTAL LABOR	\$33,014.5

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS									
Description	Quantity Units	Notes /	Unit		Contract or Quote				
		Company	Price		Amount				
				_					
				TOTAL SUBCONTRACTS	\$0.00				

Material Cost	\$0.00 Material Tax @			
	\$0.00 iviaterial lax @	0.00% \$0.00		\$0.00
Equipment Cost	\$40,658.76 Equipment Tax @	0.00% \$0.00		\$40,658.7
Subcontractors	\$0.00			\$0.0
RECT COST SUBTOTALS	\$73,673	\$0	DIRECT COST SUBTOTALS	\$73,67
dditional Pay Item Notes :				

	1.103.1 Rock/Soil Cover Placement Over Concrete Rub Details	ble at Scour Hole	
ph Cost Factors	Stans	Low Cost Factors	
d Weather	0%	No Bad Weather	
s Price Increase	0% 10% 10%	Gas Price Decrease	10
foreseen Contaminated Mats/ Access Issues	10%	No Unforeseen Contaminated Mats/ Access Is	0 10 ssues 0 10
	20%		10
oduction Per Hour	Hours Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breat	ks, Etc.) Overall Production	
	150 8 10	80% 80%	960 1200
		00%	1200

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.107	Project	: KRRP - JC Boy	le		
Description	:	Process Demolished Concrete for Scour Hole	Group	: D11			
Quantity	1.107	55,900.00 CY					
Daily Production	1.107	700.00 CY per 10 hour shift	Project #	: 1			
Work Days	1.107	79.9 Days	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.107	\$11.76 per CY	Probable Low Cost Parameter		770.00	\$591,658	\$768.39
Total Cost	1.107	\$657.398	Probable High Cost Parameter		630.00	\$723,138	\$1.147.84

Total Cost											
Total Cost	1.107	\$657,398			Probab	le High Cost Parameter			630.00	\$723,138	\$1,147.84
CREW COSTS											
Description		Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)		Active	1.00	79.9	10	799.00	Е	\$276.50	incl. in rate	incl. in rate	\$220,923.5
Labor Foreman		Active	1.00	79.9	10	799.00	L	\$58.87	incl. in rate	incl. in rate	\$47,038.7
Laborer		Active	2.00	79.9	10	1,598.00	L	\$51.07	incl. in rate	incl. in rate	\$81,614.6
Equipment Operator (medium)		Active	2.00	79.9	10	1,598.00	L	\$72.34	incl. in rate	incl. in rate	\$115,592.9
Terex Track Crusher		Active	1.00	79.9	10	799.00	E	\$103.99	incl. in rate	incl. in rate	\$83,085.3
Terex Track Crusher Kobelco SK260LC-10 Ex With CP100 Magr	net	Active Active	1.00 1.00	79.9 79.9	10 10	799.00 799.00	E E	\$103.99 \$89.29	incl. in rate	incl. in rate incl. in rate	
	net										
	net										\$83,085.3 \$71,342.7 \$244,246.3

Description	Item	Order	Conversion	Order	Order	Mat	erial
	Quantity	Unit	Factor / Waste	Quantity	Price	Co	ost

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Reinforcement Disposal Fee	5,031,000 lbs.	90lbs Rebar per CY of Concrete		
Rebar Hauling to Facility (30 Miles)	3,780 Miles	Klamath County Landfill		
Hauling Cost by Load	126.00 loads	40,000lbs per load	\$300.00	\$37,800.00
				TOTAL CURCONTRACTE \$27,000,00

				TOTAL SUBCONTRACTS	\$37,800.00
·	·	·		·	
SUMMARY OF COSTS					
Labor Cost	\$244,246.31 Labor Burden @	0.0%			\$244,246.3
Material Cost	\$0.00 Material Tax @	0.00%	\$0.00		\$0.0
Equipment Cost	\$375,351.56 Equipment Tax @	0.00%	\$0.00		\$375,351.56
Subcontractors	\$37,800.00				\$37,800.00
DIRECT COST SUBTOTALS	\$657,398		\$0	DIRECT COST SUBTOTALS	\$657,398
Additional Pay Item Notes :					
See Sequence notes for detailed explanation for	nlacing material				
occ ocquence notes for detailed explanation for	placing material.				

	1.107 Process Demolished Concrete for Scour Hole Details		
High Cost Factors		Low Cost Factors	
Bad Weather Gas Price Increase	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	0%	No Unforeseen Contaminated Mats/ Access Issues	0%
	10%		10%
Production Per Hour Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Etc.)	Overall Production	

Production Per Hour		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Etc.)	Overall Production	
	100 8		70%	560
	10		70%	700
Track Crusher Production		Excavator Loading Production per shift		
CY per Hour	70.00	CY per Hour		70.00
Lbs per Hour (4050lbs per CF)	283,500.00	CY Bucket Size		2.50
Tons per Hour	142	Buckets Per Hour		28.00
# of Crushers	1.00	# of Excavators		1.00
Tons per hour	142	CY per Hour		70.00
Tons Per Hour Ideal Production Per 8 Hour Shift	300	Ideal Production		150.00
Efficient Compared to Ideal Production	47%	Efficient Compared to Ideal Production		47%
Inefficiencies Compared to Ideal Production	53%	Inefficiencies Compared to Ideal Production		53%
		Excavator Crusher Production		
		Hydraulic Hammer CY per Hour		70
		# of Hammers		1.00
		CY per Hour		70
		CY per Hour Back Check		70
		Ideal Production		150
		Efficient Compared to Ideal Production		47%
		Inefficiencies Compared to Ideal Production		53%

Autuse Anotoms.

This pay item is to account for the processing of the demolished concrete related to the JCB facility. Estimate currently reflects using three pieces of equipment to support operations; a Kobeloc excavator with a CP100 crusher/ Milagnet attachment, a Terex Track Crusher with a magnetic over belt, rebar deflector, and a rip stop belt, and a SCY excavator.

The Kobeloc with the CP10 crusher will break concrete intensional peace per separation in the contract of the processing of the demolished concrete intensional peace per separation in the contract of the processing of the demolished concrete intensional peace per separation in the contract of the processing of the peace per separation in the contract of the processing of the peace peace peace per separation in the peace per separation

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.107.1		Project	: KRRP - JC Boy	yle		
Description	:	Haul Road Construction for	Scour Hole Backfill	Group	: D11			
Quantity	1.107.1	10,000.00 CY						
Daily Production	1.107.1	350.00 CY per	10 hour s	hift Project #	: 1			
Work Days	1.107.1	28.6 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.107.1	\$24.78 per CY		Probable	Low Cost Parameter	385.00	\$223,002	\$579.23
Total Cost	1.107.1	\$247,780		Probable	High Cost Parameter	315.00	\$272,558	\$865.26

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	28.6	10	286.00	Е	\$205.40	incl. in rate	incl. in rate	\$58,744.40
Dozer (235hp)(CATD7)	Active	1.00	28.6	10	286.00	E	\$171.07	incl. in rate	incl. in rate	\$48,926.02
Labor Foreman	Active	1.00	28.6	10	286.00	L	\$58.87	incl. in rate	incl. in rate	\$16,837.39
Laborer	Active	2.00	28.6	10	572.00	L	\$51.07	incl. in rate	incl. in rate	\$29,213.76
Equipment Operator (medium)	Active	2.00	28.6	10	572.00	L	\$72.34	incl. in rate	incl. in rate	\$41,376.19
Truck Driver (heavy)	Active	1.00	28.6	10	286.00	L	\$66.92	incl. in rate	incl. in rate	\$19,140.26
Truck, Off-Road, Articulated Rear, 20cy	Active	1.00	28.6	10	286.00	Е	\$117.28	incl. in rate	incl. in rate	\$33,542.08
				Labor Hours	1716				TOTAL LABOR	\$106,567.60
				uipment Hours	858				OTAL EQUIPMENT	\$141,212.50

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRAC	CT COSTS						
	Description	Quantity	Units	Notes /	Unit		Contract or Quote
				Company	Price		Amount
						TOTAL SUBCONTRACTS	\$0.00

JMMARY OF COSTS				
abor Cost laterial Cost	\$106,567.60 Labor Burden @ \$0.00 Material Tax @	0.0% 0.00% \$0.00		\$106,567 \$0
quipment Cost	\$141,212.50 Equipment Tax @	0.00% \$0.00		\$141,21
ubcontractors	\$0.00			\$
ECT COST SUBTOTALS	\$247,780	\$0	DIRECT COST SUBTOTALS	\$247
tional Pay Item Notes :				

	1.107.1 Haul Road Con	nstruction for Scour Hole Backfill Details	
Cost Factors		Low Cost Factors	
Weather	0%	No Bad Weather	
Price Increase	10%	Gas Price Decrease	
preseen Contaminated Mats/ Access Issues	0%	No Unforeseen Contaminated Mats/ A	ccess Issues
	10%		
oction Per Hour	Hours Efficiency Factor (Access, Activity, Qty,	r, High Rebar Density, Breaks, Ect) Overall Production 70%	280
	10	70%	350
Notes	Excavator Loading Production per shift		
Notes		<u> </u>	
	10,000.00 CY per Hour		0.00
Factor	60% CY Bucket Size		2.50
CY	16,000.00 Buckets Per Hour		0.00
Vehicle 60% Capacity (2 tons per CY)	12.00 # of Excavators		1.00
Haul Vehicles	0.00 CY per Hour (2.5 CY Bucket)		0.00
Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)	5.00 CY Per Hour Ideal Production Per 8 Hou	ur Shift	95.00
Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)	3.00 Efficient Compared to Ideal Production	i <u> </u>	0%
Speed (Loaded MPH)	5.00 Inefficiencies Compared to Ideal Produc		100%
rn Speed (Unloaded MPH)	5.00		
Distance (Miles)	0.50		
Length (Hours)	10.00		
	10.00		
Time			
le time was not calculated due to the truck need to be at the location the w	hole duration to avoid double handling dirt.		
kotes	• material is expected to be stockpiled near forebay area to be reused to restore th		

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	1.107.2			Project	: KRRP - JC Boy	le		
Description	:	Backfilling Scour Hole With F	Processed C	oncrete	Group	: D11			
Quantity	1.107.2	55,900.00 CY							
Daily Production	1.107.2	2,000.00 CY per	10	hour shift	Project #	: 1			
Work Days	1.107.2	28.0 Days		='	Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.107.2	\$4.38 per CY			Probable Low	Cost Parameter	2,200.00	\$220,547	\$100.25
Total Cost	1.107.2	\$245,052			Probable High	Cost Parameter	1,800.00	\$269,558	\$149.75

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	28.0	10	280.00	Е	\$205.40	incl. in rate	incl. in rate	\$57,512.00
Dozer (235hp)(CATD7)	Active	1.00	28.0	10	280.00	E	\$171.07	incl. in rate	incl. in rate	\$47,899.60
Water Tanker (5,000gal)	Active	1.00	28.0	10	280.00	E	\$75.03	incl. in rate	incl. in rate	\$21,008.40
Labor Foreman	Active	1.00	28.0	10	280.00	L	\$58.87	incl. in rate	incl. in rate	\$16,484.16
Laborer	Active	3.00	28.0	10	840.00	L	\$51.07	incl. in rate	incl. in rate	\$42,901.32
Equipment Operator (medium)	Active	2.00	28.0	10	560.00	L	\$72.34	incl. in rate	incl. in rate	\$40,508.16
Truck Driver (heavy)	Active	1.00	28.0	10	280.00	L	\$66.92	incl. in rate	incl. in rate	\$18,738.72
				Labor Hours	1960				TOTAL LABOR	\$118,632.36
			Е	Equipment Hours	840			1	OTAL EQUIPMENT	\$126,420.00

TERIAL COSTS							
Description		Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	
						TOTAL MATERIAL	

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$118,632.36 Labor Burden @	0.0%		\$118,632.36
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$126,420.00 Equipment Tax @	0.00% \$0.00		\$126,420.00
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$245,052	\$0	DIRECT COST SUBTOTALS	\$245,052
Additional Pay Item Notes :				

1.107.2 Backfilling Scour Hole With Processed Concrete Details						
High Cost Factors		Low Cost Factors				
Bad Weather Gas Price Increase	0%	No Bad Weather	0%			
	10%	Gas Price Decrease	10%			
Unforeseen Contaminated Mats/ Access Issues	0%	No Unforeseen Contaminated Mats/ Access Issues	0%			
	10%		10%			

Production Per Hour	Hours	Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production	
250	8		80%	1600
	10		80%	2000

Dozer Pushing Production	
CY per Hour	200.00
# of Dozers	1.00
CY Per Hour Ideal Production Per 8 Hour Shift	300.00
Efficient Compared to Ideal Production	67%
Inefficiencies Compared to Ideal Production	33%

Other Notes
This pay Item is to account for the placement of the processed concrete into the forebay scour hole. It is expected the material will be stock piled on newly cut hauf road and a dozer will push the material over the edge until the material is high enough for the dozer to access the pile material. An excavator will supply material to the dozer from the processed material stock pile. A water tanker will be used to mitigate dust from the operation. The overall operation is expected to be 80% efficient after accounting for machine maintenance, employee breaks, and equipment repositioning. The soil covering activity will occur simultaneously to take advantage of the access road.

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.107.3		Project	: KRRP - JC Boyle			
Description	:	Scour Hole Backfill Haul Road	d Restoration	Group	: D11			
Quantity	1.107.3	3,540.00 CY						
Daily Production	1.107.3	350.00 CY per	10 hour shift	Project #	: 1			
Work Days	1.107.3	10.1 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.107.3	\$32.37 per CY		Probable Low	Cost Parameter	385.00	\$103,131	\$267.87
Total Cost	1.107.3	\$114,590		Probable High	Cost Parameter	315.00	\$126,049	\$400.15

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (2.5cy)	Active	1.00	10.1	10	101.00	E	\$205.40	incl. in rate	incl. in rate	\$20,745.40
Dozer (235hp)(CATD7)	Active	1.00	10.1	10	101.00	E	\$171.07	incl. in rate	incl. in rate	\$17,278.07
Roller, Single Drum (steel wheel, 12.0 - 14.9 MTn)	Active	1.00	10.1	10	101.00	E	\$76.79	incl. in rate	incl. in rate	\$7,755.79
Labor Foreman	Active	2.00	10.1	10	202.00	L	\$58.87	incl. in rate	incl. in rate	\$11,892.14
Laborer	Active	2.00	10.1	10	202.00	L	\$51.07	incl. in rate	incl. in rate	\$10,316.75
Equipment Operator (medium)	Active	3.00	10.1	10	303.00	L	\$72.34	incl. in rate	incl. in rate	\$21,917.81
Truck Driver (heavy)	Active	1.00	10.1	10	101.00	L	\$66.92	incl. in rate	incl. in rate	\$6,759.32
CAT 745 (32 CY) OFF ROAD TRUCK	Active	1.00	10.1	10	101.00	E	\$177.47	incl. in rate	incl. in rate	\$17,924.4
						_	•			• ,
				Labor Hours	808				TOTAL LABOR	\$50,886.0
				Equipment Hours	404				TOTAL EQUIPMENT	\$63,703.73

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
					TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$50,886.02 Labor Burden @	0.0%		\$50,886.02
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$63,703.73 Equipment Tax @	0.00% \$0.00		\$63,703.73
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$114,590	\$0	DIRECT COST SUBTOTALS	\$114,590
Additional Pay Item Notes :				

			1.107.3 Scour Hole Backfill Haul Road Restoration			
ost Factors			Details	Low Cost Factors		
eather		0%		No Bad Weather		
ce Increase seen Contaminated Mats/ Access Issues		10% 0%		Gas Price Decrease No Unforeseen Contaminated Mats/ Acce		
seen Contaminated Mats/ Access Issues		10%		Total	ess issues	
		10%		Total		
tion Per Hour	Hours		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect)	Overall Production		
	50	8	3	70%	280	
		10)	70%	350	
otes			Excavator Loading Production per shift			
			CY per Hour		0.00	
actor			CY Bucket Size		2.50	
(Buckets Per Hour		0.00	
hicle 60% Capacity (2 tons per CY)		19.20	# of Excavators		1.00	
ul Vehicles			CY per Hour (2.5 CY Bucket)		0.00	
ime (Includes Spot Time, Maneuver Time, & Loading) (Minutes)			CY Per Hour Ideal Production Per 8 Hour Shift		95.00	
Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)			Efficient Compared to Ideal Production		0.00	
peed (Loaded MPH)			Inefficiencies Compared to Ideal Production		1.00	
Speed (Unloaded MPH)		5.00				
stance (Miles)		0.50				
ength (Hours)		10.00				
mgm (nome)		10.00				
ime						

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.108	Project : KRRP - JC Boyl	е		
Description	:	Topsy Recreational Area - Concrete total	Group : D16			
Quantity	1.108	68.00 CY				
Daily Production	1.108	120.00 CY per 10 hour shift	Project # : 1			
Work Days	1.108	0.6 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.108	\$76.80 per CY	Probable Low Cost Parameter	126.00	\$4,961	\$39.38
Total Cost	1.108	\$5,222	Probable High Cost Parameter	108.00	\$5,745	\$53.19

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	0.6	10	6.00	Е	\$276.50	incl. in rate	incl. in rate	\$1,659.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	0.6	10	6.00	E	\$76.00	incl. in rate	incl. in rate	\$456.00
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.6	10	6.00	E	\$57.41	incl. in rate	incl. in rate	\$344.40
Hydraulic Impact Breaker Attachment (3k-4k ft-lb)	Active	1.00	0.6	10	6.00	E	\$36.81	incl. in rate	incl. in rate	\$220.86
Truck Driver (heavy)	Active	1.00	0.6	10	6.00	L	\$66.92	incl. in rate	incl. in rate	\$401.54
Labor Foreman	Active	1.00	0.6	10	6.00	L	\$58.87	incl. in rate	incl. in rate	\$353.23
Laborer	Active	3.00	0.6	10	18.00	L	\$51.07	incl. in rate	incl. in rate	\$919.3
Equipment Operator (medium)	Active	2.00	0.6	10	12.00	L	\$72.34	incl. in rate	incl. in rate	\$868.03
				Labor Hours	42				TOTAL LABOR	\$2,542.1
			_	ipment Hours	24				TAL EQUIPMENT	\$2,680.3

Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost

SUBCONTRACT	T COSTS						
	Description	Quantity	Units	Notes /	Unit		Contract or Quote
				Company	Price		Amount
							\$0.00
							\$0.00
							\$0.00
							\$0.00
						TOTAL SUBCONTRACTS	\$0.00

SUMMARY OF COSTS				
Labor Cost	\$2,542.12 Labor Burden @	0.0%		\$2,542.12
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$2,680.32 Equipment Tax @	0.00% \$0.00		\$2,680.32
Subcontractors	\$0.00			\$0.00
DIRECT COST SUBTOTALS	\$5,222	\$0	DIRECT COST SUBTOTALS	\$5,222
Additional Pay Item Notes :				

MATERIAL COSTS

PAY ITEM INFORMATION									
PAY ITEM NUMBER	:	1.109			Project	: KRRP - JC Boyl	е		
		Topsy Recreational Area	- 6'x80' Floa	ting dock made	of				
Description	:	lumber and composite dec	cking		Group	: D16			
Quantity	1.109	1.00 EA							
Daily Production	1.109	1.00 EA per	10	hour shift	Project #	: 1			
Work Days	1.109	1.0 Da	ys		Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	1.109	\$6,726.83 per EA			Probable Low C	Cost Parameter	1.05	\$6,390	\$6,086.18
Total Cost	1.109	\$6,727			Probable High (Cost Parameter	0.95	\$7,063	\$7,434.92

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Crane (80tn)	Active	1.00	1.0	10	10.00	E	\$197.66	incl. in rate	incl. in rate	\$1,976.60
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	1.0	10	10.00	E	\$57.41	incl. in rate	incl. in rate	\$574.10
Truck Driver (heavy)	Active	1.00	1.0	10	10.00	L	\$66.92	incl. in rate	incl. in rate	\$669.24
Equipment Operator (crane)	Active	1.00	1.0	10	10.00	L	\$81.60	incl. in rate	incl. in rate	\$815.98
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	3.00	1.0	10	30.00	L	\$51.07	incl. in rate	incl. in rate	\$1,532.19
				Labor Hours	60				TOTAL LABOR	\$3,606.13
			Equ	uipment Hours	20			то	TAL EQUIPMENT	\$2,550.70

Description	Item	Order	Conversion	Order	Order	Mate	
	Quantity	Unit	Factor / Waste	Quantity	Price	Co	st
						TOTAL MATERIAL	\$0.00

Description	Quantity	Units	Notes /	Unit	(Contract or Quote
			Company	Price		Amount
Dump Fee Allowance		5 Ton	Klamath Landfill	\$74.00		\$370.00
Haul Allowance		1 Load	Klamath Landfill	\$200.00		\$200.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$570.00

Material Cost				\$3,606.13
	\$0.00 Material Tax @	0.00% \$0.00		\$0.0
Equipment Cost	\$2,550.70 Equipment Tax @	0.00% \$0.00		\$2,550.7
Subcontractors	\$570.00]	\$570.0
DIRECT COST SUBTOTALS	\$6,727	\$0	DIRECT COST SUBTOTALS	\$6,72
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.110		Project	: KRRP - JC Boyle			
		Topsy Recreational Area - 5'x2	0' Walkway leading to hex					
Description	:	fishing platform		Group	: D16			
Quantity	1.110	200.00 SF						
Daily Production	1.11	800.00 SF per	10 hour shift	Project #	: 1			
Work Days	1.11	0.3 Days		Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.11	\$7.44 per SF		Probable Low Cost Pa	arameter	840.00	\$1,413	\$1.68
Total Cost	1.11	\$1,487		Probable High Cost P	arameter	760.00	\$1,562	\$2.05

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Forklift, Rough Terrain (9,000 lb capacity)	Active	1.00	0.3	10	3.00	E	\$55.50	incl. in rate	incl. in rate	\$166.50
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.3	10	3.00	E	\$27.09	incl. in rate	incl. in rate	\$81.27
Truck Driver (heavy)	Active	1.00	0.3	10	3.00	L	\$66.92	incl. in rate	incl. in rate	\$200.77
Equipment Operator (light)	Active	1.00	0.3	10	3.00	L	\$69.19	incl. in rate	incl. in rate	\$207.57
Labor Foreman	Active	1.00	0.3	10	3.00	L	\$58.87	incl. in rate	incl. in rate	\$176.62
Laborer	Active	2.00	0.3	10	6.00	L	\$51.07	incl. in rate	incl. in rate	\$306.44
				Labor Hours	15				TOTAL LABOR	
			Ec	quipment Hours	6			Т	OTAL EQUIPMENT	\$247.77

MATERIAL COSTS								
Description	Item	Order	Conversion	Order	Order		Material	
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost	
						TOTAL MATERIAL		\$0.00
						TOTAL MATERIAL		ψ0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance		2 Ton	Klamath Landfill	\$74.00		\$148.00
Haul Allowance		1 Load	Klamath Landfill	\$200.00		\$200.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$348.00

SUMMARY OF COSTS				
Labor Cost	\$891.40 Labor Burden @	0.0%		\$891.40
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$247.77 Equipment Tax @	0.00% \$0.00		\$247.77
Subcontractors	\$348.00			\$348.00
DIRECT COST SUBTOTALS	\$1,487	\$0	DIRECT COST SUBTOTALS	\$1,487
Additional Pay Item Notes :				

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	1.111	Project	: KRRP - JC Boyl	9		
Decembrican		Tanan Banasatianal Assa Banasata ta natural assat	C	. D40			
Description		Topsy Recreational Area - Regrade to natural cont	our Group	: D16			
Quantity	1.111	300.00 SF					
Daily Production	1.111	600.00 SF per 10 hour shift	Project #	: 1			
Work Days	1.111	0.5 Days	Estimator	: Eric Jones	SF per	Total Cost	Unit Price Per SF
Unit Price	1.111	\$7.03 per SF	Probable Lov	w Cost Parameter	630.00	\$2,004	\$3.18
Total Cost	1.111	\$2,109	Probable Hig	h Cost Parameter	540.00	\$2,320	\$4.30

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Dozer (125hp)(CATD6)	Active	1.00	0.5	10	5.00	E	\$82.58	incl. in rate	incl. in rate	\$412.90
Grader, 180hp, 13' blade	Active	1.00	0.5	10	5.00	E	\$84.69	incl. in rate	incl. in rate	\$423.45
Equipment Operator (medium)	Active	2.00	0.5	10	10.00	L	\$72.34	incl. in rate	incl. in rate	\$723.36
Labor Foreman	Active	1.00	0.5	10	5.00	L	\$58.87	incl. in rate	incl. in rate	\$294.36
Laborer	Active	1.00	0.5	10	5.00	L	\$51.07	incl. in rate	incl. in rate	\$255.37
				Labor Hours	20				TOTAL LABOR	\$1,273.09

Quantity Unit Factor / Waste Quantity Price Cost	MATERIAL COSTS							
	Description		Order	Conversion	Order	Order		Material
TOTAL MATERIAL \$0.0		Quantity	Unit	Factor / Waste	Quantity	Price		Cost
TOTAL MATERIAL SO.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
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TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
TOTAL MATERIAL \$0.0								
							TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

Labor Cost	\$1,273.09 Labor Burden @	0.0%		\$1,273.0
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.0
Equipment Cost	\$836.35 Equipment Tax @	0.00% \$0.00		\$836.3
Subcontractors	\$0.00			\$0.0
RECT COST SUBTOTALS	\$2,109	\$0	DIRECT COST SUBTOTALS	\$2,1
Iditional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.112		Project	: KRRP - JC Boyle			
		Pioneer Park - Picnic tables t	o be removed and hauled					
Description	:	away		Group	: D16			
Quantity	1.112	12.00 EA						
Daily Production	1.112	30.00 EA per	10 hour shift	Project #	: 1			
Work Days	1.112	0.4 Days		Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	1.112	\$152.60 per EA		Probable Low	Cost Parameter	31.50	\$1,740	\$55.23
Total Cost	1.112	\$1,831		Probable High	Cost Parameter	28.50	\$1,923	\$67.46

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.4	10	4.00	E	\$63.11	incl. in rate	incl. in rate	\$252.4
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.4	10	4.00	E	\$57.41	incl. in rate	incl. in rate	\$229.6
Equipment Operator (medium)	Active	1.00	0.4	10	4.00	L	\$72.34	incl. in rate	incl. in rate	\$289.
Truck Driver (heavy)	Active	1.00	0.4	10	4.00	L	\$66.92	incl. in rate	incl. in rate	\$267.
_abor Foreman	Active	1.00	0.4	10	4.00	L	\$58.87	incl. in rate	incl. in rate	\$235.
Laborer	Active	2.00	0.4	10	8.00	L	\$51.07	incl. in rate	incl. in rate	\$408.
				Labor Hours	20				TOTAL LABOR	\$1,201.

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance		2 Ton	Klamath Landfill	\$74.00		\$148.00
					TOTAL SUBCONTRACTS	\$148.0

SUMMARY OF COSTS				
Labor Cost	\$1,201.11 Labor Burden @	0.0%		\$1,201.11
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$482.08 Equipment Tax @	0.00% \$0.00		\$482.08
Subcontractors	\$148.00			\$148.00
DIRECT COST SUBTOTALS	\$1,831	\$0	DIRECT COST SUBTOTALS	\$1,831
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.113		Project	: KRRP - JC Boyle			
Description	:	Pioneer Park - 12 Concrete fire rings		Group	: D16			
Quantity	1.113	5.00 CY		= <u>-</u> !				
Daily Production	1.113	50.00 CY per 10	hour shift	Project #	: 1			
Work Days	1.113	0.1 Days		Estimator	: Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	1.113	\$88.75 per CY		Probable Low C	ost Parameter	52.50	\$422	\$8.03
Total Cost	1.113	\$444		Probable High C	ost Parameter	47.50	\$466	\$9.81

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	ldle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.00	Е	\$63.11	incl. in rate	incl. in rate	\$63.11
Truck, On-Highway Dump (6x4, 12cy)	Active	1.00	0.1	10	1.00	Е	\$57.41	incl. in rate	incl. in rate	\$57.41
Equipment Operator (medium)	Active	1.00	0.1	10	1.00	L	\$72.34	incl. in rate	incl. in rate	\$72.34
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate	\$58.87
Laborer	Active	1.00	0.1	10	1.00	L	\$51.07	incl. in rate	incl. in rate	\$51.07
Truck Driver (heavy)	Active	1.00	0.1	10	1.00	L	\$66.92	incl. in rate	incl. in rate	\$66.92
				Labor Hours	4				TOTAL LABOR	\$249.21
			Equ	uipment Hours	2			TC	OTAL EQUIPMENT	\$120.52
										

Description	Item	Order	Conversion	Order	Order	M	aterial
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance	1	Ton	Klamath Landfill	\$74.00		\$74.00
					TOTAL SUBCONTRACTS	\$74.00

SUMMARY OF COSTS				
Labor Cost	\$249.21 Labor Burden @	0.0%		\$249.21
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$120.52 Equipment Tax @	0.00% \$0.00		\$120.52
Subcontractors	\$74.00			\$74.00
DIRECT COST SUBTOTALS	\$444	\$0	DIRECT COST SUBTOTALS	\$444
Additional Pay Item Notes :				

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.114		Project	: KRRP - JC Boyle			
		Pioneer Park - Portable toilets	s to be removed and hauled					
Description	:	away		Group	: D16			
Quantity	1.114	2.00 EA						
Daily Production	1.114	50.00 EA per	10 hour shift	Project #	: 1			
Work Days	1.114	0.04 Days		Estimator	: Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	1.114	\$104.88 per EA		Probable Low Co	st Parameter	52.50	\$199	\$3.80
Total Cost	1.114	\$210		Probable High Co	ost Parameter	47.50	\$220	\$4.64

Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
·	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.0	10	0.40	Е	\$63.11	incl. in rate	incl. in rate	\$25.2
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.0	10	0.40	E	\$27.09	incl. in rate	incl. in rate	\$10.8
Labor Foreman	Active	1.00	0.0	10	0.40	L	\$58.87	incl. in rate	incl. in rate	\$23.5
Laborer	Active	1.00	0.0	10	0.40	L	\$51.07	incl. in rate	incl. in rate	\$20.4
Truck Driver (heavy)	Active	1.00	0.0	10	0.40	L	\$66.92	incl. in rate	incl. in rate	\$26.7
Equipment Operator (medium)	Active	1.00	0.0	10	0.40	L	\$72.34	incl. in rate	incl. in rate	\$28.93
				Labor Hours	1.6				TOTAL LABOR	\$99.6
				ipment Hours	0.8				TAL EQUIPMENT	\$36.

Description	Item	Order	Conversion	Order	Order	M	aterial
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
				•			

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance	1	l Ton	Klamath Landfill	\$74.00		\$74.00
					TOTAL SUBCONTRACTS	\$74.00

SUMMARY OF COSTS				
Labor Cost	\$99.68 Labor Burden @	0.0%		\$99.68
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$36.08 Equipment Tax @	0.00% \$0.00		\$36.08
Subcontractors	\$74.00			\$74.00
DIRECT COST SUBTOTALS	\$210	\$0	DIRECT COST SUBTOTALS	\$210
Additional Pay Item Notes :				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.115	Project : KRRP - JC Boy	le		
Description	:	Pioneer Park - Signs to be removed and hauled away	Group : D16			
Quantity	1.115	6.00 EA				
Daily Production	1.115	50.00 EA per 10 hour shift	Project # : 1			
Work Days	1.115	0.1 Days	Estimator : Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	1.115	\$114.58 per EA	Probable Low Cost Parameter	52.50	\$653	\$12.44
Total Cost	1.115	\$687	Probable High Cost Parameter	47.50	\$722	\$15.20

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Loader, FE Rubber Tire (3.5cy)	Active	1.00	0.1	10	1.00	Е	\$63.11	incl. in rate	incl. in rate	\$63.11
Truck, Pickup (4x4, 3/4tn)	Active	1.00	0.1	10	1.00	Е	\$16.99	incl. in rate	incl. in rate	\$16.99
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate	\$58.87
Laborer	Active	2.00	0.1	10	2.00	L	\$51.07	incl. in rate	incl. in rate	\$102.15
Equipment Operator (medium)	Active	1.00	0.1	10	1.00	L	\$72.34	incl. in rate	incl. in rate	\$72.34
				Labor Hours	4				TOTAL LABOR	\$233.35
			Equ	ipment Hours	2			т	OTAL EQUIPMENT	\$80.10

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance		1 Ton	Klamath Landfill	\$74.00		\$74.00
Haul Allowance		1 Load	Klamath Landfill	\$300.00		\$300.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$374.00

SUMMARY OF COSTS				
Labor Cost	\$233.35 Labor Burden @	0.0%		\$233.35
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$80.10 Equipment Tax @	0.00% \$0.00		\$80.10
Subcontractors	\$374.00			\$374.00
DIRECT COST SUBTOTALS	\$687	\$0	DIRECT COST SUBTOTALS	\$687
Additional Pay Item Notes :				

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	1.116	Project : KRRP - JC Boy	le		
		Pioneer Park - Dumpster to be removed and hauled				
Description	:	away	Group : D16			
Quantity	1.116	1.00 EA				
Daily Production	1.116	10.00 EA per 10 hour shift	Project # : 1			
Work Days	1.116	0.1 Days	Estimator : Eric Jones	EA per	Total Cost	Unit Price Per EA
Unit Price	1.116	\$1,125.87 per EA	Probable Low Cost Parameter	11.00	\$1,013	\$92.12
Total Cost	1.116	\$1,126	Probable High Cost Parameter	8.50	\$1,295	\$152.32

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Under die Eusenstee (E.O.)			0.1	10		E			incl. in rate	
Hydraulic Excavator (5.0cy)	Active	1.00			1.00		\$276.50	incl. in rate		\$276.50
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	0.1	10	1.00	Е	\$27.09	incl. in rate	incl. in rate	\$27.09
Labor Foreman	Active	1.00	0.1	10	1.00	L	\$58.87	incl. in rate	incl. in rate	\$58.87
Laborer	Active	2.00	0.1	10	2.00	L	\$51.07	incl. in rate	incl. in rate	\$102.15
Equipment Operator (medium)	Active	1.00	0.1	10	1.00	L	\$72.34	incl. in rate	incl. in rate	\$72.34
Truck Driver (heavy)	Active	1.00	0.1	10	1.00	L	\$66.92	incl. in rate	incl. in rate	\$66.92
				Labor Hours	5				TOTAL LABOR	\$300.28
			Equi	pment Hours	2			тс	TAL EQUIPMENT	\$303.59

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order	N	laterial
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
Dump Fee Allowance		3 Ton	Klamath Landfill	\$74.00		\$222.00
Haul Allowance		1 Load	Klamath Landfill	\$300.00		\$300.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$522.00

\$300.28 Labor Burden @	0.0%		\$300.28
\$0.00 Material Tax @	0.00% \$0.00		\$0.00
\$303.59 Equipment Tax @	0.00% \$0.00		\$303.59
\$522.00			\$522.00
\$1,126	\$0	DIRECT COST SUBTOTALS	\$1,126
	\$0.00 Material Tax @ \$303.59 Equipment Tax @ \$522.00	\$0.00 Material Tax @ 0.00% \$0.00 \$303.59 Equipment Tax @ 0.00% \$0.00	\$0.00 Material Tax @ \$0.00% \$0.00 \$303.59 Equipment Tax @ \$0.00% \$0.00

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	1.118		Project	: KRRP - JC Boyle			
Description	:	Pioneer Park - Regrade to na	atural contour	Group	: D16			
Quantity	1.118	0.50 AC						
Daily Production	1.118	0.50 AC per	10 hour shift	Project #	: 1			
Work Days	1.118	1.0 Days		Estimator	: Eric Jones	AC per	Total Cost	Unit Price Per AC
Unit Price	1.118	\$8,437.74 per AC		Probable Low Co	st Parameter	0.55	\$3,797	\$6,903.61
Total Cost	1.118	\$4,219		Probable High Co	ost Parameter	0.45	\$4,641	\$10,312.79

CREW COSTS Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
Besonption	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Dozer (125hp)(CATD6)	Active	1.00	1.0	10	10.00	Е	\$82.58	incl. in rate	incl. in rate	\$825.80
Grader, 180hp, 13' blade	Active	1.00	1.0	10	10.00	E	\$84.69	incl. in rate	incl. in rate	\$846.90
Equipment Operator (medium)	Active	2.00	1.0	10	20.00	L	\$72.34	incl. in rate	incl. in rate	\$1,446.72
Labor Foreman	Active	1.00	1.0	10	10.00	L	\$58.87	incl. in rate	incl. in rate	\$588.72
Laborer	Active	1.00	1.0	10	10.00	L	\$51.07	incl. in rate	incl. in rate	\$510.73
				Labor Hours	40				TOTAL LABOR	\$2,546.17
									TAL EQUIPMENT	\$1,672.70

Description	Item	Order	Conversion	Order	Order	Mat	terial
	Quantity	Unit	Factor / Waste	Quantity	Price	C	ost

SUBCONTRACT COSTS						
Description	Quantity	Units	Notes /	Unit		Contract or Quote
			Company	Price		Amount
						\$0.00
						\$0.00
						\$0.00
						\$0.00
					TOTAL SUBCONTRACTS	\$0.00

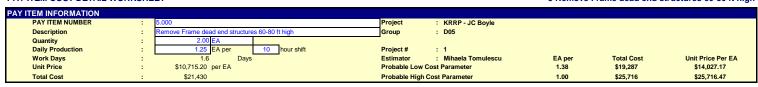
Labor Cost	\$2,546.17 Labor Burden @	0.0%		\$2,546.17
Material Cost	\$0.00 Material Tax @	0.00% \$0.00		\$0.00
Equipment Cost	\$1,672.70 Equipment Tax @	0.00% \$0.00		\$1,672.70
Subcontractors	\$0.00			\$0.00
IRECT COST SUBTOTALS	\$4,219	\$0	DIRECT COST SUBTOTALS	\$4,219
dditional Pay Item Notes :				

TOTAL LABOR

TOTAL EQUIPMENT

\$5,932.08

\$9,201.71



Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Hydraulic Excavator (2.5cy)	Active	1.00	1.6	10	16.00	E	\$205.40	incl. in rate	incl. in rate	\$3,286.40
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Water Tanker (5,000gal)	Active	1.00	1.6	10	16.00	E	\$75.03	incl. in rate	incl. in rate	\$1,200.48
Gas Welding Machine	Active	1.00	1.6	10	16.00	E	\$2.88	incl. in rate	incl. in rate	\$46.03
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Vibratory Hammer & Extractor	Active	1.00	1.6	10	16.00	E	\$94.14	incl. in rate	incl. in rate	\$1,506.24
Hydraulic Crane (80tn)	Active	1.00	1.6	10	16.00	E	\$197.66	incl. in rate	incl. in rate	\$3,162.56
Equipment Operator (crane)	Active	1.00	1.6	10	16.00	L	\$81.60	incl. in rate	incl. in rate	\$1,305.57

· · · · · · · · · · · · · · · · · · ·	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price	Material Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$296.60	 \$296.6 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0

Labor Hours

Equipment Hour

Description	Quantity	Units	Notes /			Unit			Contract or Quote
			Company			Price			Amount
									\$0
Hauling Disposal Cost	20.00	Loads	20 tons a load				\$300.00		\$6,000
									\$0
									\$(
								TOTAL SUBCONTRACTS	\$6,00
SUMMARY OF COSTS									
Labor Cost	\$5,932,08	Labor Burden @		49.7%	\$0.00				\$5,932
Material Cost	\$296,60	Material Tax @		0.0%	\$0.00				\$296
Equipment Cost		Equipment Tax @		0.0%	\$0.00				\$9,20
Subcontractors	\$6,000.00			0.070	40.00				\$6,000
o about it actors	ψο,οσο.σσ							<u> </u>	φο,οσο
DIRECT COST SUBTOTALS	\$21,430				\$0			DIRECT COST SUBTOTALS	\$21,
180 18 9 11									
dditional Pay Item Notes :									

PAY ITEM INFORMATION
PAY ITEM NUMBER Project Group KRRP - JC Boyle Description
Quantity
Daily Production
Work Days
Unit Price : D05 2.24 EA per 0.9 \$3,058.35 per EA \$6,117 10 hour shift Project # : 1
Estimator : Mihaela Tomulescu
Probable Low Cost Parameter Days EA per 2.46 Total Cost \$5,505 Unit Price Per EA \$2,236.68 Total Cost Probable High Cost Parameter 1.90 \$7,034 \$3,698.57

Electrician Foreman											CREW COSTS
Electrician	Labor / Equipment Cost	Burden Rate	Hrly oper. Cost		L/E	Total Hours					Description
Hydraulic Crane (50tn)	\$496.65	incl. in rate	incl. in rate	\$55.80	L	8.90	10	0.9	1.00	Active	Electrician Foreman
Equipment Operator (crane) Active 1.00 0.9 10 8.90 L \$81.60 incl. in rate incl. in rate Vibratory Hammer & Extractor Active 1.00 0.9 10 8.90 E \$94.14 incl. in rate Inc	\$496.65	incl. in rate	incl. in rate	\$55.80	L	8.90	10	0.9	1.00	Active	Electrician
Vibratory Hammer & Extractor Active 1.00 0.9 10 8.90 E \$94.14 incl. in rate incl. in rate Truck, Utility, with Man-Basket Active 1.00 0.9 10 8.90 E \$31.90 incl. in rate	\$1,212.18	incl. in rate	incl. in rate	\$136.20	E	8.90	10	0.9	1.00	Active	Hydraulic Crane (50tn)
Truck, Utility, with Man-Basket Active 1.00 0.9 10 8.90 E \$31.90 incl. in rate incl. in rate Laborer Active 1.00 0.9 10 8.90 L \$51.07 incl. in rate incl. in rate	\$726.22	incl. in rate	incl. in rate	\$81.60	L	8.90	10	0.9	1.00	Active	Equipment Operator (crane)
Laborer Active 1.00 0.9 10 8.90 L \$51.07 incl. in rate incl. in rate	\$837.85	incl. in rate	incl. in rate	\$94.14	E	8.90	10	0.9	1.00	Active	Vibratory Hammer & Extractor
	\$283.91	incl. in rate	incl. in rate	\$31.90	E	8.90	10	0.9	1.00	Active	Truck, Utility, with Man-Basket
	\$454.55	incl. in rate	incl. in rate	\$51.07	L	8.90	10	0.9	1.00	Active	Laborer
Labor Hours 35.6 TOTAL LABOR	BOR \$2,174.07	TOTAL LABOR				35.6	Labor Hours				
Equipment Hours 26.7 TOTAL EQUIPMENT	ENT \$2,333.94	TOTAL EQUIPMENT				26.7	Equipment Hours				

MATERIAL COSTS Description	Item Quantity	Order Unit	Conversion Factor / Waste	Order Quantity	Order Price		laterial Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$108.70		\$108.70
						TOTAL MATERIAL	\$108.70

Description	Quantity	Units	Notes /			Unit			Contract or Quote
			Company			Price			Amount
auling Disposal Cost	5.00	Loads	20 tons a load				\$300.00		\$1,500
								TOTAL SUBCONTRACTS	\$1,50
UMMARY OF COSTS									
bor Cost		Labor Burden @		49.7%	\$0.00				\$2,17
aterial Cost		Material Tax @		0.0%	\$0.00				\$10
quipment Cost	\$2,333.94	Equipment Tax @		0.0%	\$0.00				\$2,33
ubcontractors	\$1,500.00								\$1,50
RECT COST SUBTOTALS	\$6,117				\$0			DIRECT COST SUBTOTALS	\$6
ditional Pay Item Notes :									

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.002	Project	: KRRP - JC Boyle			
Description	:	Remove (incl foundation) and Save Power Circuit Breakers 230KV	Group	: D05			
Quantity	:	2.00 EA					
Daily Production	:	1.25 EA per 10 hour shift	Project #	: 1			
Work Days	:	1.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$3,908.79 per EA	Probable Low	Cost Parameter	1.31	\$7,427	\$5,658.43
Total Cost		\$7.818	Probable High	Cost Parameter	1.13	\$8.599	\$7.643.85

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Labor Foreman	Active	1.00	1.6	10	16.00	L	\$58.87	incl. in rate	incl. in rate	\$941.95
Electrician	Active	1.00	1.6	10	16.00	L	\$55.80	incl. in rate	incl. in rate	\$892.85
Hydraulic Crane (35tn)	Active	1.00	1.6	10	16.00	E	\$117.77	incl. in rate	incl. in rate	\$1,884.32
Equipment Operator (medium)	Active	1.00	1.6	10	16.00	L	\$72.34	incl. in rate	incl. in rate	\$1,157.38
Laborer	Active	1.00	1.6	10	16.00	L	\$51.07	incl. in rate	incl. in rate	\$817.17
Truck, Flatbed (4x4, 10,000 gvw)	Active	1.00	1.6	10	16.00	E	\$27.09	incl. in rate	incl. in rate	\$433.44

Labor Hours	64	TOTAL LABOR	\$3,809.34
Equipment Hours	32	TOTAL EQUIPMENT	\$2,317.76
MATERIAL COSTS			

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$190.47		\$190.47
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
						TOTAL MATERIAL	\$190.47

Description	Quantity	Units	Notes / Company			Unit Price			Contract or Quote Amount
									;
auling Disposal Cost	5.00	Loads	20 tons a load				\$300.00		\$1,5
								TOTAL SUBCONTRACTS	\$1,
JMMARY OF COSTS									
oor Cost	\$3,809.34	Labor Burden @		49.7%	\$0.00				\$3,
terial Cost	\$190.47	Material Tax @		0.0%	\$0.00				\$
uipment Cost	\$2,317.76	Equipment Tax @		0.0%	\$0.00				\$2,
ocontractors	\$1,500.00								\$1,
RECT COST SUBTOTALS	\$7,818				\$0			DIRECT COST SUBTOTALS	
tional Pay Item Notes :								-	

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.003	Project	: KRRP - JC Boyle			
Description	:	Substation Tie Structure 230KV	Group	: D06			
Quantity	:	1.00 EA					
Daily Production	:	0.32 EA per 10 hour shift	Project #	: 1			
Work Days	:	3.2 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$36,827.74 per EA	Probable Low	Cost Parameter	0.35	\$33,145	\$95,656.48
Total Cost	:	\$36,828	Probable High	Cost Parameter	0.27	\$42,352	\$158,177.05

Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Electrician Foreman	Active	2.00	3.2	10	64.00	L	\$55.80	incl. in rate	incl. in rate	\$3,571.3
Electrician	Active	4.00	3.2	10	128.00	L	\$55.80	incl. in rate	incl. in rate	\$7,142.7
Hydraulic Crane (35tn)	Active	2.00	3.2	10	64.00	E	\$117.77	incl. in rate	incl. in rate	\$7,537.2
Equipment Operator (medium)	Active	2.00	3.2	10	64.00	L	\$72.34	incl. in rate	incl. in rate	\$4,629.5
Truck, Utility, with Man-Basket	Active	2.00	3.2	10	64.00	Е	\$31.90	incl. in rate	incl. in rate	\$2,041.6

	Labor Hours	256	TOTAL LABOR	\$15,343.68
	Equipment Hours	128	TOTAL EQUIPMENT	\$9,578.88
MATE	RIAL COSTS			

Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$767.18		\$767.18
Ceramic Insulators	96.00	Bells	1.000	96.00	\$18.00		\$1,728.00
V-String Hardware	3.00	EA	1.000	3.00	\$230.00		\$690.00
Grounding	1.00	EA	1.000	1.00	\$150.00		\$150.00
						TOTAL MATERIAL	\$3,335.18

Description	Quantity	Units	Notes / Company			Unit Price			Contract or Quote Amount
tent trailer with cable tensioning rig, for high oltage line work - Rent per day	2.00	days					\$535.00		\$1,070
mage line work - Kerit per day	2.00	uays					φυσυ.00		φ1,070.
Rent trailer with cable pulling rig, for high voltage									
ne work - Rent per day	2.00	days					\$3,000.00		\$6,000.
auling Disposal Cost	5.00	Loads	20 tons a load				\$300.00		\$1,500
								TOTAL SUBCONTRACTS	\$8,570.
UMMARY OF COSTS									
abor Cost	\$15 242 60 I	_abor Burden @		49.7%	\$0.00				\$15,343
laterial Cost		Material Tax @		0.0%	\$0.00				\$3,335
quipment Cost		Equipment Tax @		0.0%	\$0.00			_	\$9,578
ubcontractors	\$8,570.00	_quipinioni rax @		0.070	ψ0.00				\$8,570
uboonitactors	ψ0,570.00							<u> </u>	φο,στ
DIRECT COST SUBTOTALS	\$36,828				\$0			DIRECT COST SUBTOTALS	\$36,

Production is based off of RSMs using 2 Crew formed of 1 Forman, 1 Electrician,1Crane.

PAY ITEM COST DETAIL WORKSHEET 5.004 Remove Chain Link Fence

PAY ITEM INFORMATION PAY ITEM NUMBER KRRP - JC Boyle Description Quantity
Daily Production 10 hour shift : 1 : Mihaela Tomulescu Days Work Days Estimator LF per 412.50 Total Cost Unit Price Per LF \$16.98 per LF Probable Low Cost Parameter \$9,186 \$22.27 337.50 \$11,227 \$33.27 **Total Cost** \$10,206 Probable High Cost Parameter

Description	Active Idle	# in crew	Days Worked	Hours	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
				/day						
Laborer	Active	2.00	1.6	10	32.00	L	\$51.07	incl. in rate	incl. in rate	\$1,634.34
Truck Driver (light)	Active	1.00	1.6	10	16.00	L	\$65.82	incl. in rate	incl. in rate	\$1,053.18
Hydraulic Excavator (2.5cy)	Active	1.00	1.6	10	16.00	E	\$205.40	incl. in rate	incl. in rate	\$3,286.40
Equipment Operator (light)	Active	1.00	1.6	10	16.00	L	\$69.19	incl. in rate	incl. in rate	\$1,107.04
Truck, Flatbed (4x4, 10,000 gvw)	Active	2.00	1.6	10	32.00	E	\$27.09	incl. in rate	incl. in rate	\$866.88

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$189.73	\$189.73
Topsoil placement and grading, loam or topsoil, F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade	120.00	CY	1.000	120.00	\$4.74	\$568.80
						TOTAL MATERIAL \$758.53

Equipment Hour

TOTAL EQUIPMENT

\$4,153.28

Description	Quantity	Units	Notes /			Unit			Contract or Quote
			Company			Price			Amount
									\$0.
Hauling Disposal Cost	5.00	Loads	20 tons a load				\$300.00		\$1,500.
									\$0.
									\$0.
								TOTAL SUBCONTRACTS	\$1,500.
SUMMARY OF COSTS									
Labor Cost	\$3,794.56	Labor Burden @		49.7%	\$0.00				\$3,794.
Material Cost	\$758.53	Material Tax @		0.0%	\$0.00				\$758.
Equipment Cost	\$4,153.28	Equipment Tax @		0.0%	\$0.00				\$4,153.
Subcontractors	\$1,500.00								\$1,500.
DIRECT COST SUBTOTALS	\$10,206		<u> </u>		\$0			DIRECT COST SUBTOTALS	\$10,2
dditional Pay Item Notes :								_	
ditional Pay item Notes :									
Production is based off of RSMs u	sing Crew B80c, 2 laborers	and 1 truck driver light. C	onsidered using an excaval	tor for the CLF f	oundation remo	oval.			

Elements of a substation

- A: Primary power lines' side B: Secondary power lines' side
- 1. Primary power lines 2. Ground wire 3. Overhead lines
- 4. Transformer for measurement of electric voltage
- 5. Disconnect switch 6. Circuit breaker
- 7. Current transformer 8. Lightning arrester
- 9. Main transformer 10. Control building 11. Security fence 12. Secondary power lines

PAY ITEM INFORMATION							
PAY ITEM NUMBER	:	5.005	Project	: KRRP - JC Boyle			
Description	:	Demolish overhead distribution 2.5 miles (30-45 poles)	Group	: D05			
Quantity	:	45.00 EA					
Daily Production	:	3.08 EA per 10 hour shift	Project #	: 1			
Work Days	: '	14.6 Days	Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$1,763.91 per EA	Probable Low	Cost Parameter	3.39	\$71,438	\$21,085.67
Total Cost	:	\$79,376	Probable High	Cost Parameter	2.46	\$95,251	\$38,657.06

CREW COSTS										
Description	Active	# in	Days Worked	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew		/day	Hours		Rate	Cost	Rate	Cost
Electrician Foreman	Active	1.00	14.6	10	146.00	L	\$55.80	incl. in rate	incl. in rate	\$8,147.24
Electrician	Active	1.00	14.6	10	146.00	L	\$55.80	incl. in rate	incl. in rate	\$8,147.24
Hydraulic Crane (80tn)	Active	1.00	14.6	10	146.00	E	\$197.66	incl. in rate	incl. in rate	\$28,858.36
Equipment Operator (crane)	Active	1.00	14.6	10	146.00	<u>L</u>	\$81.60	incl. in rate	incl. in rate	\$11,913.31
Laborer	Active	2.00	5.0	10	100.00	L	\$51.07	incl. in rate	incl. in rate	\$5,107.30
Vibratory Hammer & Extractor	Active	1.00	5.0	10	50.00	Е	\$94.14	incl. in rate	incl. in rate	\$4,707.00
Truck, Utility, with Man-Basket	Active	1.00	5.0	10	50.00	E	\$31.90	incl. in rate	incl. in rate	\$1,595.00
				Labor Hours	538				TOTAL LABOR	\$33,315.08
				Equipment Hours	246				TOTAL EQUIPMENT	\$35,160.36

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc) Topsoil placement and grading, loam or topsoil,	1.00	LS	1.000	1.00	\$1,665.75	\$1,665.
F.E. loader, 1-1/2 C.Y., remove and stockpile on site, spread from pile to rough finish grade						
	45.00	CY	1.100	49.50	\$4.74	\$234.
						TOTAL MATERIAL \$1,900.

Description	Quantity	Units	Notes / Company		Unit Price		Contract or Quote Amount
Hauling Disposal Cost	45.00	Loads	20 tons a load		\$200.00		\$9,000.0
						TOTAL SUBCONTRACTS	\$9,000.0
SUMMARY OF COSTS							
abor Cost	\$33,315.08	Labor Burden @	49	9.7% \$0.00			\$33,315.0
Material Cost	\$1,900.38	Material Tax @		0.0% \$0.00			\$1,900.
Equipment Cost	\$35,160.36	Equipment Tax @	(0.0% \$0.00			\$35,160.
Subcontractors	\$9,000.00						\$9,000.
DIRECT COST SUBTOTALS	\$79,376			\$0		DIRECT COST SUBTOTALS	\$79,3
Iditional Pay Item Notes :							

TOTAL MATERIAL

\$77,982.41

PAY ITEM COST DETAIL WORKSHEET

PAY ITEM INFORMATION								
PAY ITEM NUMBER	:	5.032		Project	: KRRP - JC Boyle			
Description	:	Install 230kV strain transmission struc	ctures outside JC Boyle Substation	Group	: D06			
Quantity	:	2.00 EA						
Daily Production	:	0.13 EA per	10 hour shift	Project #	: 1			
Work Days	:	15.0 Days		Estimator	: Mihaela Tomulescu	EA per	Total Cost	Unit Price Per EA
Unit Price	:	\$158,278.04 per EA		Probable Low C	Cost Parameter	0.15	\$284,900	\$1,947,371.67
Total Cost	:	\$316,556		Probable High (Cost Parameter	0.11	\$379,867	\$3,570,181.40

CREW COSTS										
Description	Active	# in	Days	Hours	Total	L/E	Hourly	Hrly oper.	Burden	Labor / Equipment
	Idle	crew	Worked	/day	Hours		Rate	Cost	Rate	Cost
Labor Foreman	Active	1.00	15.0	10	150.00	L	\$58.87	incl. in rate	incl. in rate	\$8,830.80
Electrician Foreman	Active	1.00	7.5	10	75.00	L	\$55.80	incl. in rate	incl. in rate	\$4,185.23
Electrician	Active	2.00	7.5	10	150.00	L	\$55.80	incl. in rate	incl. in rate	\$8,370.45
Steelworker	Active	4.00	7.5	10	300.00	L	\$78.10	incl. in rate	incl. in rate	\$23,430.00
Equipment Operator (crane)	Active	1.00	7.5	10	75.00	L	\$81.60	incl. in rate	incl. in rate	\$6,119.85
Equipment Operator (medium)	Active	1.00	15.0	10	150.00	L	\$72.34	incl. in rate	incl. in rate	\$10,850.40
Truck Driver (heavy)	Active	1.00	15.0	10	150.00	L	\$75.72	incl. in rate	incl. in rate	\$11,358.60
Truck, Utility, with Man-Basket	Active	1.00	7.5	10	75.00	E	\$31.90	incl. in rate	incl. in rate	\$2,392.50
Truck, Tractor (400hp)	Active	1.00	15.0	10	150.00	E	\$69.98	incl. in rate	incl. in rate	\$10,497.00
Hydraulic Crane (120tn)	Active	1.00	7.5	10	75.00	E	\$242.08	incl. in rate	incl. in rate	\$18,156.00
Loader, FE Rubber Tire (5.25cy)	Active	1.00	15.0	10	150.00	E	\$76.00	incl. in rate	incl. in rate	\$11,400.00
Laborer	Active	3.00	15.0	10	450.00	L	\$51.07	incl. in rate	incl. in rate	\$22,982.85
	Active	0.00	15.0	10	0.00	0	\$0.00	incl. in rate	incl. in rate	\$0.00

Labor Hours	1500	TOTAL LABOR	\$96,128.18	
Equipment Hours	450	TOTAL EQUIPMENT	\$42,445.50	

MATERIAL COSTS						
Description	Item	Order	Conversion	Order	Order	Material
	Quantity	Unit	Factor / Waste	Quantity	Price	Cost
Consumables 5% labor (saw blades, drill bits, etc)	1.00	LS	1.000	1.00	\$4,806.41	\$4,806.41
Steel Tower - Large Angle	2.00	EA	1.000	2.00	\$25,500.00	\$51,000.00
Foundation	48.00	CY	1.000	48.00	\$155.00	\$7,440.00
Piles	8.00	EA	1.000	8.00	\$1,200.00	\$9,600.00
Ceramic Insulators	192.00	Bells	1.000	192.00	\$18.00	\$3,456.00
V-String Hardware	6.00	EA	1.000	6.00	\$230.00	\$1,380.00
Grounding	2.00	EA	1.000	2.00	\$150.00	\$300.00

SUBCONTRACT COSTS				
Description	Quantity Units	Notes /	Unit	Contract or Quote
		Company	Price	Amount
Foundation Allowance	1 AL		\$100,000.00	\$100,000.00

			TOTAL SUBCONTRACTS	\$100,000.00
SUMMARY OF COSTS				
Labor Cost	\$96,128.18 Labor Burden @	49.7% \$0.0	0	\$96,128.18
Material Cost	\$77,982.41 Material Tax @	0.0% \$0.0	0	\$77,982.41
Equipment Cost	\$42,445.50 Equipment Tax @	0.0% \$0.0	0	\$42,445.50
Subcontractors	\$100,000.00			\$100,000.00
DIRECT COST SUBTOTALS	\$316,556		0 DIRECT COST SUBTOTALS	\$316,556

Additional Pay Item Notes :

This payitems is to install 2 each transmission towers just outside of JC Boyle. This cost estimate is for installation of the towers and foundations only. An allowance has been carried over for the foundations of the structure due to current design stage. It is expected it will take 3 weeks to install the two structures completely. 1 week for foundations, 1 week for tower one assembly and 1 week for tower two assembly. It is figured that majority of the work will be conducted by the structural steel crews and electricians. It is expected that foundations will be installed by subcontractor and there will be a GC crew to provide access and assistance during foundation installation.

PAY ITEM INFORMATION						
PAY ITEM NUMBER	:	5.033	Project : KRRP - JC Boyle			
Description	:	Upstream Cofferdam to be Removed in the Wet	Group D08			
Quantity	5.033	14,450.00 CY				
Daily Production	5.033	1,560.00 CY per 20 hour shift	Project # : 1			
Work Days	5.033	9.3 Days	Estimator : Eric Jones	CY per	Total Cost	Unit Price Per CY
Unit Price	5.033	\$16.48 per CY	Probable Low Cost Parameter	1,794.00	\$202,425	\$112.83
Total Cost	5.033	\$238,147	Probable High Cost Parameter	1,326.00	\$273,869	\$206.54

CREW COSTS										
Description	Active Idle	# in crew	Days Worked	Hours /day	Total Hours	L/E	Hourly Rate	Hrly oper. Cost	Burden Rate	Labor / Equipment Cost
Hydraulic Excavator (5.0cy)	Active	1.00	9.3	20	186.00	E	\$276.50	incl. in rate	incl. in rate	\$51,429.00
Dozer (235hp)(CATD7)	Active	1.00	9.3	20	186.00	E	\$171.07	incl. in rate	incl. in rate	\$31,819.02
Loader, FE Rubber Tire (5.25cy)	Active	1.00	9.3	20	186.00	E	\$76.00	incl. in rate	incl. in rate	\$14,136.00
Truck Driver (heavy)	Active	2.00	8.3	20	331.20	L	\$66.92	incl. in rate	incl. in rate	\$22,165.23
Labor Foreman	Active	1.00	9.3	20	186.00	L	\$58.87	incl. in rate	incl. in rate	\$10,950.19
Laborer	Active	1.00	9.3	20	186.00	L	\$51.07	incl. in rate	incl. in rate	\$9,499.58
Equipment Operator (medium)	Active	3.00	9.3	20	558.00	L	\$72.34	incl. in rate	incl. in rate	\$40,363.49
CAT 745 (32 CY) OFF ROAD TRUCK	Active	2.00	8.3	20	331.20	Е	\$174.47	incl. in rate	incl. in rate	\$57,784.46
				Labor Hours	1261.2				TOTAL LABOR	\$82,978.49
				Equipment Hours	889.2			то:	TAL EQUIPMENT	\$155,168.48

MATERIAL COSTS							
Description	Item	Order	Conversion	Order	Order		Material
	Quantity	Unit	Factor / Waste	Quantity	Price		Cost
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
							\$0.00
						TOTAL MATERIAL	\$0.00

SUBCONTRACT COSTS					
Description	Quantity	Units	otes / Uni	t	Contract or Quote
		С	mpany Pric	e	Amount
					\$0.00
					\$0.00
					\$0.00
					\$0.00
				TOTAL SUBCONTRACTS	\$0.00

\$82,978.49 Labor Burden @	0.0%		\$82,978.49
\$0.00 Material Tax @	0.00% \$0.00		\$0.00
\$155,168.48 Equipment Tax @	0.00% \$0.00		\$155,168.48
\$0.00			\$0.00
\$238,147	\$0	DIRECT COST SUBTOTALS	\$238,147
	\$0.00 Material Tax @ Equipment Tax @ \$0.00	\$0.00 Material Tax @ 0.00% \$0.00 \$155,168.48 Equipment Tax @ 0.00% \$0.00	\$0.00 Material Tax @ 0.00% \$0.00 \$155,168.48 Equipment Tax @ 0.00% \$0.00

	5.033 Upstream Cofferdam to be Remo Details	ved in the Wet	
High Cost Factors		Low Cost Factors	
Bad Weather Gas Price Increase	0%	No Bad Weather	0%
Gas Price Increase	10%	Gas Price Decrease	10%
Unforeseen Contaminated Mats/ Access Issues	5%	No Unforeseen Contaminated Mats/ Access Issues	5%
	15%		15%

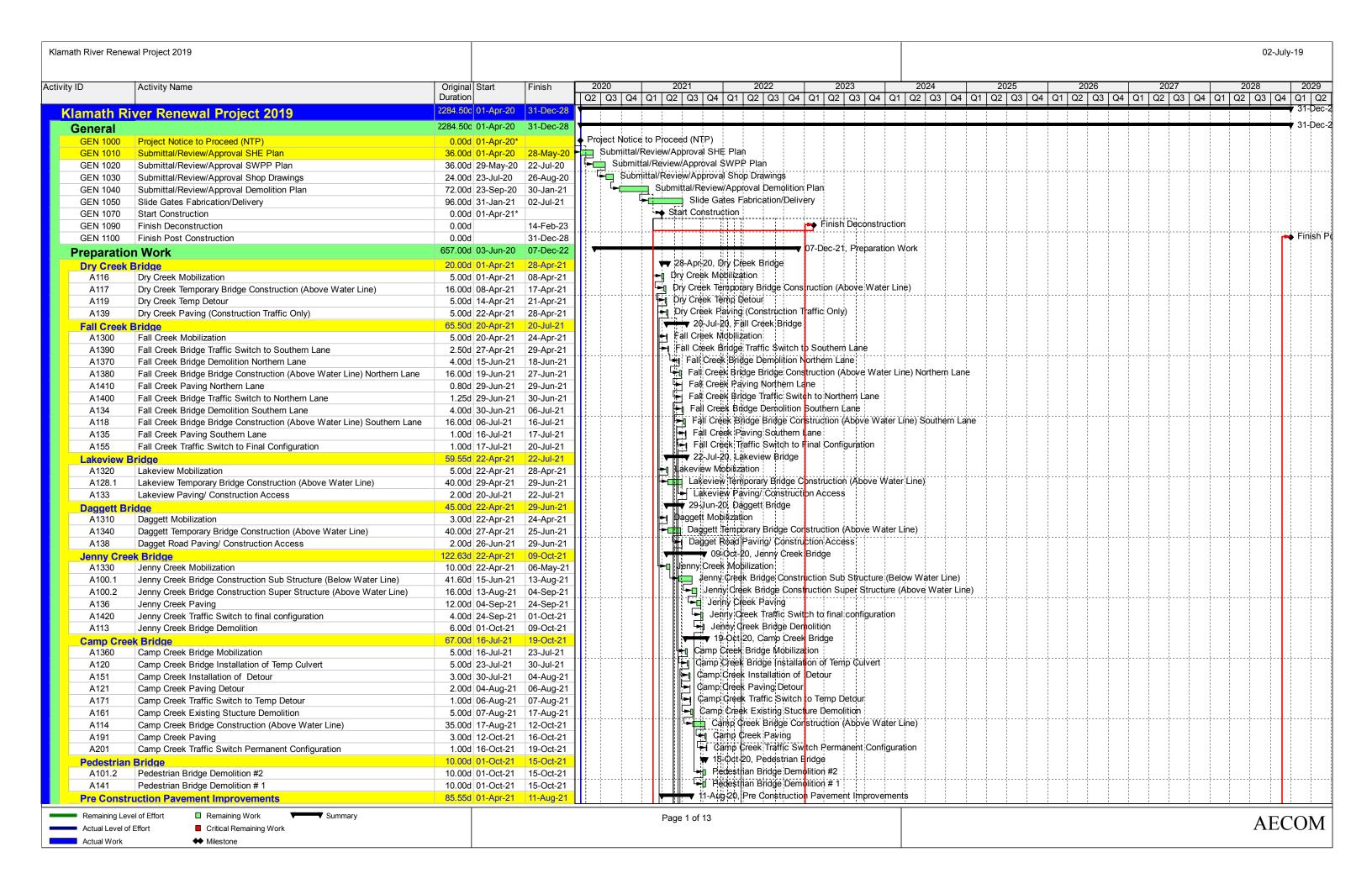
Production Per Hour Hours		Efficiency Factor (Access, Activity, Qty, High Rebar Density, Breaks, Ect) Overall Production 65%	
120	20		
	20	6578	
Haul Notes		Excavator Loading Production per shift	
CY	14.450.00	CY per Hour	
Swell Factor		CY Bucket Size	
Bulk CY		Buckets Per Hour	
Haul Vehicle 85% Capacity (1.3 tons per CY)		# of Excavators	
f of Haul Vehicles		CY per Hour (5 CY Bucket)	
.oad Time (Includes Spot Time, Maneuver Time, & Loading) (Minutes)		CY Per Hour Ideal Production Per 8 Hour Shift	
Oump Time (Includes Spot Time, Maneuver Time, & Unloading) Minutes)		Efficient Compared to Ideal Production	
Haul Speed (Loaded MPH)		Inefficiencies Compared to Ideal Production	
Return Speed (Unloaded MPH)	15.00		
Haul Distance (Miles)	1.00		
Shift Length (Hours)	20.00		
Cycle Time		-	
Load Time (Load Time Minutes / 60mins)	0.08		
Haul Time (Haul Distance / Haul Speed)	0.11		
Dump Time (Dump Time Minutes / 60 Mins)	0.0	s	
Return Time (Haul Distance / Return Speed)	0.07		
Hours Per Cycle	0.3		
Efficiency Factor (Night Work, Traffic Restrictions, Coffee Breaks, ECT)	65%		
Actual Hours Per Cycle (Hours per Cycle / Efficiency Factor)	0.41		
Number of Cycles(Bulk CY/ (Haul Vehicle Cap X # of Haul Vehicles) Fotal Number of Haul Hours (Actual Cycle Hours X Number of Cycles)	345 165.6		
Loads Per Hour (Number of Cycles / Total Number of Haul Hours)	2.00		
Number of Haul Days	8.3		
Speed Loaded			
Max Weight lbs of loaded 745	164,500.00		
Tons	82.25		
20lbs/Ton Rolling weight	4		
Rolling Resistance (1% for each 20lbs/Ton)	49		
Slope Grade Total Resistance	89 129		
Max Gear per CAT Chart	129		
Max Gear per CAT Chart	8.1		
Speed Empty			
Max Weight lbs of Empty 745	74,100.00		
Tons Empty	37.05		
20lbs/Ton Rolling weight Empty	2		
Rolling Resistance (1% per 20lbs/Ton) Empty	29		
Average Slope Empty	89		
Total Resistance Empty	-6%		
Max Gear per CAT Chart Empty	N/A		
Max MPH Empty	N/A		

Other Notes

This is for removal of Up stream coffer dam. Total CY is expected to be 28,900 and assumption is that 50% of that Quantify will be washed out when the coffer dam is breached. It is expected that the remaining 14,450 CY can be removed with excavators and haul trucks. The efficiency of this pay item is expected to be lower than other executation items due to haul road maintenance or temp construction due to the material truck on will be west.



Attachment C Construction Schedule



Klamath River	Renewal Project 2019				02-July-1
Activity ID	Activity Name	Original S	Start	Finish	2020 2021 2022 2023 2024 2025 2026 2027 2028 Q2 Q3 Q4 Q1 Q1 Q1 Q2 Q3 Q4 Q1
A10	9 Copco Rd Ager Rd to Lakeview Rd (Crack Sealer)		01-Apr-21	08-Apr-21	[╃] Çipco Rd Ager Rd to Lakeyiew Rd (Crack Sealer)
A10			10-Apr-21	22-Apr-21	Topsy Grade Rd (:0.9 mile 9" AB repair)
A11			10-Apr-21	22-Apr-21	Copoco Rd to Lakeview Rd to Dagget Rd (1 Mile Crack Sealer, 1.5 new Asphalt)
A10			d 23-Apr-21	· •	1 JC Boyle Dam Access Road (minor excavation; 0.25 mile new 9" AB, 0.7 mile 9" AB repair)
A11			23-Apr-21	08-May-21	1 Eopco Rd Daggett Rd to Copco Access Rd (1.5 mile 9" AB repair)
A10			11-May-21	22-May-21	
A10			30-Jun-21	13-Jul-21	Copco t Darn Access Road 2500CY roadway excavation, 0.9 miles 9" AB overlay
A10	·		13-Jul-21	28-Jul-21	Copcio Rd From Copco 1 Access to Copco Bridge (1 mile 9" AB repair)
A10			28-Jul-21	11-Aug-21	Copo 1 Ager Beswik Rd Barge Access (minor excavation and 9" AB section)
	ert Improvements		11-Aug-21	19-Aug-21	
A12	•			13-Aug-21	
A12					
A12				17-Aug-21	
A12				18-Aug-21	
A13	, ,		18-Aug-21		
	· ·			04-Sep-21	
	Ch Creek Culvert				$ imes$ $\ \cdot\ $, $\ \cdot\ $
A13			30-Jul-21	06-Aug-21	
A12	' '		06-Aug-21	10-Aug-21	
A12				17-Aug-21	
A14	Ţ.			19-Aug-21	의 Harris : : : : [1]: [N)근 N: GN: GN: GN: GN: GN: GN: GN: GN: GN:
A14				20-Aug-21	
A14	•			24-Aug-21	
A11				28-Aug-21	
A14	Scotch Creek Pavement Installation Perm Configuration	2.00d 2	28-Aug-21	01-Sep-21	1 Scotch Creek Pavement Installation Perm Configuration
A14	Scotch Creek Traffic Switch to Perm Confirguration	1.00d (01-Sep-21	02-Sep-21	
A14	90 Scotch Creek Temporary Detour Removal	2.00d (02-Sep-21	04-Sep-21	Scotch Creek Temporary Detour Removal
A15	Scotch Creek Culvert Complete	0.00d		04-Sep-21	Scotch Creek Culvert Conplete
Hatc	neries Improvements	657.00d (03-Jun-20	07-Dec-22	07-Dec-21, Hatcheries Improvements
A15	Pre- Purchase Long Lead Items	217.00d (03-Jun-20*	31-Mar-21	ı III -► IIII Rite- Purk haşê Long Lead Items IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
A15	Contractor Procurement & Award	66.00d (01-Nov-20*	31-Jan-21	Contractor Procurement & Award
A15	Contract Negotiation and NTP	43.00d (01-Jan-21*	28-Feb-21	· · · ·
A15		42.00d (03-Feb-21*	31-Mar-21	Decomnission Existing IGH & FCH
A15			03-Feb-21*		Gonstituction
A15			01-Jul-21*	30-Sep-21	
A15			01-Oct-21	07-Dec-22	─ <mark>─</mark> │
A15				24-Dec-21	
	eation Area			14-Sep-21	
	lard Cove			19-Jun-21	
	.1190 Mallard Cove Mobilization Recreation Improvements		01-Apr-21	08-Apr-21	
	.089 Demo Mallard Cove - Concrete total		10-Apr-21	13-Apr-21	
	.090 Demo Mallard Cove - 25'x5' Dock made of composite decking and poly float		15-Jun-21	15-Apr-21	
	.091 Demo Mallard Cove - 20'x5' Gangway w/ aluminum grame and railings		15-Jun-21 15-Jun-21	15-Jun-21	
				16-Jun-21	
	.092 Demo Mallard Cove - Signs to be removed and hauled away .093 Demo Mallard Cove - Wood plank tables to be removed and hauled away		16-Jun-21 16-Jun-21	16-Jun-21 16-Jun-21	
	·				
	.094 Demo Mallard Cove - Parking area to be regraded, ripped, seeded, and pla			19-Jun-21	
	oco Cove .095 Demo Copco Cove - Concrete Total			25-Jun-21 23-Jun-21	
	·				
	· · · · · · · · · · · · · · · · · · ·		23-Jun-21	23-Jun-21	
	.097 Demo Copco Cove - Signs to be removed and hauled away		23-Jun-21	23-Jun-21	
	.098 Demo Copco Cove - Wood plank tables to be removed and hauled away		23-Jun-21	23-Jun-21	
	.099 Demo Copco Cove - Regrade, rip, seed, and plant disturbed areas			25-Jun-21	
	naka Springs			29-Jun-21	
	.143 Wanaka Springs - 25'x5' Wooden floating dock			16-Jun-21	
	.144 Wanaka Springs - Regrade		18-Jun-21	22-Jun-21	
	.145 Wanaka Springs - Signs to be removed and hauled away	-	22-Jun-21	23-Jun-21	
	.146 Wanaka Springs - 15'x5' Gangplank with Railings		23-Jun-21	24-Jun-21	──┃ - コー・コート
	.140 Wanaka Springs - Concrete Total		25-Jun-21	25-Jun-21	
4	.141 Wanaka Springs - Double Pipe Railings	1.00d 2	25-Jun-21	26-Jun-21	Wanaka Springs - Double Pipe Railings
Remai	ning Level of Effort Remaining Work Summary				Dogo 2 of 12
	Level of Effort Critical Remaining Work				Page 2 of 13 AEC
Actual	Consider the Control of the Control				

◆◆ Milestone

Klama	th River Renev	val Project 2019			02-July-19
Activity	ID	Activity Name	Original Start Duration	Finish	2020 2021 2022 2023 2024 2025 2026 2027 2028 2 Q2 Q3 Q4 Q1 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q3 Q4 Q1
	4.142	Wanaka Springs - Wood picnic tables to be removed and hauled	1.00d 26-Jun-21	29-Jun-21	n-21 Wanaka Springs - Wood picnic tables to be removed and hauled
	Dutch Cre		1.30d 13-Aug-21		
	4.170	Dutch Creek - 50'4'3' Dock Concrete Abutment	0.12d 13-Aug-21		
	4.171	Dutch Creek - Double Pipe Railing	1.00d 13-Aug-21	J	
	Juniper P 4.147	Juniper Point - Concrete Total	14.46d 29-Jun-21 0.25d 29-Jun-21		
	4.147	Juniper Point - 2, 4x4 Toilet Vaults	1.00d 30-Jun-21		
	4.149	Juniper Point - Wood picnic tables to be removed and hauled	1.00d 30-3dil-21	02-Jul-21	
	4.149	Juniper Point - Wood pichic tables to be removed and hauled Juniper Point - Signs to be removed and hauled away	1.00d 01-3ul-21	02-Jul-21	
	4.151	Juniper Point - Signs to be removed and fladied away Juniper Point - Dock pile railing	1.00d 02-3ul-21	00-Jul-21	
	4.152	Juniper Point - 50'x5' Composite dock with poly floats	1.11d 07-Jul-21	08-Jul-21	
	4.153	Juniper Point - 20'x5' Composite gangplank with railings	1.00d 08-Jul-21	09-Jul-21	
	4.154	Demo Juniper Point - Bury 3' Dia. boulders on site	4.00d 09-Jul-21	16-Jul-21	
	4.155	Juniper Point - Regrade to Natural Contour	2.00d 16-Jul-21	20-Jul-21	
	Camp Cre		17.76d 20-Jul-21	13-Aug-21	
	4.156	Camp Creek - Concrete Total	0.73d 20-Jul-21	21-Jul-21	3 - 1
	4.157	Camp Creek - 180'Lx16'Wx8'D Earth jetty to remove and/or regrade	5.70d 21-Jul-21	28-Jul-21	-21 Campi Creek - 180'Lx16'Wx8D Earth jetty to remove and/or regrade
	4.158	Camp Creek - Well house 10'x16' concrete block building	0.14d 28-Jul-21	28-Jul-21	
	4.159	Camp Creek - 2, 20'x5' Composite decking gangplanks	1.00d 28-Jul-21	29-Jul-21	
	4.160	Camp Creek - 2, 20'x5' Floating composite w/ aluminum frame	1.00d 29-Jul-21	30-Jul-21	-21 Camp Creek - 2, 20'x5'; Floating composite w/ aluminum frame
	4.161	Camp Creek - Concrete block double toilet bldg 10'x16'	0.14d 30-Jul-21	31-Jul-21	
	4.162	Camp Creek - Dump stations and approx. 2000 gal buried	0.50d 31-Jul-21	31-Jul-21	
	4.163	Camp Creek - Power poles and lines	1.20d 31-Jul-21	03-Aug-21	
	4.164	Camp Creek - Remove waterlines and 3 faucets and regrade	1.00d 03-Aug-21		
	4.165	Demo Camp Creek - Recycle/bury 3' Dia. boulders	0.80d 04-Aug-21		g-21
	4.166	Camp Creek - Steel pipe/plank picnic tables to be removed and hauled aw	1.00d 05-Aug-21		*
	4.167	Camp Creek - Relocate concrete tables	1.00d 06-Aug-21		
	4.168	Camp Creek-Regrade	1.60d 07-Aug-21		
	4.169	Camp Creek - Signs to be removed and hauled away	1.00d 11-Aug-21		
	Mirror Co		7.29d 14-Aug-21		
	4.172	Mirror Cove - Concrete Total	0.47d 14-Aug-21	14-Aug-21	g-21 Mirror: Cove - Concrete Total
	4.173	Mirror Cove - 10'x16' Toilet Vault	0.14d 14-Aug-21	17-Aug-21	
	4.174	Mirror Cove - 2, 30'x5' Composite Gangplanks w/ aluminum	0.80d 17-Aug-21	18-Aug-21	g-21 Mirror Cove - 2, 30 x5 Composite Gangplanks w/ aluminum
	4.175	Mirror Cove - Double pipe railings on dock	1.00d 18-Aug-21	18-Aug-21	g-21 Mirror Cave - Double pipe railings on dock
	4.176	Demo Mirror Cove - Bury 3' Dia. boulders	0.80d 19-Aug-21	19-Aug-21	g-21 Demo Mirror Cove - Bury 3 Dia. boulders
	4.177	Mirror Cove - Regrade site	3.00d 19-Aug-21	24-Aug-21	g-21 Minrot Cove - Regrade site
	4.178	Mirror Cove - Signs to be removed and hauled away	1.00d 24-Aug-21	25-Aug-21	g-21 g-21 Mirror Cove - Regrade site g-21 Mirror Cove - Signs to be removed and hauled away
	Overlook	Point	2.50d 25-Aug-21	28-Aug-21	g-21 ▼ 28-Aug-20; Overlook Point
	4.179	Overlook Point - 1 concrete picnic table base	1.00d 25-Aug-21	26-Aug-21	
	4.180	Overlook Point - Steel frame table to be removed and hauled away	1.00d 26-Aug-21	27-Aug-21	
	4.181	Overlook Point - Regrade steep access road and site to natural contours	0.50d 27-Aug-21		
	Long Guld		2.38d 28-Aug-21		
	4.182	Long Gulch - 80'x25x4" Concrete boat ramp to be removed	0.20d 28-Aug-21		
	4.183	Long Gulch - Remove picnic tables (steel frames with planks) and haul aw	1.00d 28-Aug-21		* \rightarrow 1 i
	4.184	Long Gulch - Regrade ramp area to natural contours, rip, reseed	1.00d 31-Aug-21		
		Domo Toppy Degrectional Area, Congrete total	2.38d 01-Sep-21		
	1.108	Demo Topsy Recreational Area - Concrete total	0.60d 01-Sep-21		" ^{##} : : : : [[[[[[[]]]]]]] : : : : : : : : : : : :
		Demo Topsy Recreational Area - 6'x80' Floating dock made of lumber and c	1.00d 02-Sep-21		
	1.110	Demo Topsy Recreational Area - 5'x20' Walkway leading to hex fishing plati	0.30d 03-Sep-21		
	1.111	Demo Topsy Recreational Area - Regrade to natural contour and reseed	0.50d 03-Sep-21 5.74d 04-Sep-21		
	Pioneer P 1.112	Demo Pioneer Park - Picnic tables to be removed and hauled away	0.40d 04-Sep-21		
	1.112	Demo Pioneer Park - 12 Concrete fire rings	0.40d 04-Sep-21		
	1.113	Demo Pioneer Park - Portable toilets to be removed and hauled away	0.04d 04-Sep-21		
	1.114	Demo Pioneer Park - Signs to be removed and hauled away	0.10d 04-Sep-21		
	1.116	Demo Pioneer Park - Dumpster to be removed and hauled away	0.10d 04-Sep-21		
	1.117	Demo Pioneer Park - Remove paved access road	4.00d 04-Sep-21		
	1.117	Demo Pioneer Park - Regrade to natural contour, rip, parking and recreatio	1.00d 11-Sep-21		
		= 2	11 000 21	30p 21	r=- [] ; ; [] [] [] [] [] [] [] [] [] [] [] [] []
	Remaining Lev	el of Effort Remaining Work Summary			Days 2 of 42
	 Remaining Lev Actual Level of 	·			Page 3 of 13 AECC
	- Actual Level OI	Lifet			

◆◆ Milestone

Klamath River Renew	val Project 2019																				02-Ju	I-19
Activity ID	Activity Name	Original Start Duration	Finish	2020		021 Q3 Q4	2022 Q1 Q2 Q3 Q4		023	L Q1 C	2024	Q4 Q		025	04 Q1 (2026 Q2 Q3	3 Q4 (202)28 Q3 Q4	2029 4 Q1 Q2
Flood Impr	ovements	180.00d 01-Apr-21	25-Jul-21								- ~~	~ ~		1 20 2		= 40	12.1	~. ~- .	20 2.	<u> </u>	20 2	
10.001	Raising Existing Residential and Commercial Structures	180.00d 01-Apr-21	25-Jul-21		+	Raisin	-20, Flood Improvem g Existing Residentia	al and Comr	nercial S	ructures												
Yreka Wate	-	116.00d 29-Apr-21	07-Oct-21	 		 07	7-Oct-20, Yreka Wate	er Supply	1-1-1					1								
6.011	Yreka Waterline Mobilization	10.00d 29-Apr-21	14-May-21		┡╸	Yreka Wat	terline Mobilization															
6.002	Yreka Waterline Pre Drilling for Shoring Pile Northside	5.00d 15-May-21		11 : :		Yreka Wa	terline Pre Drilling fo	r \$horing Pi	le Norths	ide		i				į				i		
6.003	Yreka Waterline Install Shoring for Micro Tunneling Pit Northside	15.00d 22-May-21		11	□	Yreka W	aterline Install Shorii	ng for Micro	Tunnelin	Pit Nort	hside											
6.005	Yreka Waterline Pit Excavation Northside	10.00d 15-Jun-21			4	Yreka W	Vaterline Pit Excavat	tion Northsid	de													
6.14	Yreka Waterline Open Excavation for Water Pipe Northside	10.00d 30-Jun-21		 		□ Yneka \	Watenine Open Exca	avation for V	Vater Pip	e Northsid	de			†								
6.24	Yreka Waterline Pre Drilling for Shoring Pile Side Southside	5.00d 30-Jun-21	07-Jul-21		4		Waterline Pre Drilling															
6.34	Yreka Waterline Install Shoring for Micro Tunneling Pit Side Southside	15.00d 08-Jul-21	29-Jul-21	11			Waterline Install Sh					hside										
6.74	Yreka Waterline Hot Tapping Valve For New Line Northside	3.00d 16-Jul-21	20-Jul-21	11			Waterline Hot Tappir															
6.44	Yreka Waterline Pit Excavation Southside	10.00d 30-Jul-21	13-Aug-21	1		1. 2 1. 11	Waterline Pit Exca	- 1				i								i		
6.54	Yreka Waterline Open Excavation for Water Pipe Southside	10.00d 30-Jul-21	13-Aug-21	 			a Waterline Open Ex			pe South	side											
6.001	Micro Tunneling under Klamath River (Installation of Casing)	24.80d 13-Aug-21					o Tunneling under Kl															
6.84	Yreka Waterline Hot Tapping Valves For New Line Southside	3.00d 14-Aug-21		11			a Waterline Hot Tapp															
6.004	Yreka Waterline Pipe Installation	24.00d 28-Aug-21				1 1 12 11 11	ka Waterline Pipe In	(T)														
6.005.11	Yreka Water Line Pressure Testing	2.00d 14-Sep-21	<u> </u>	11			ka Water Line Press	1 :														
6.005.41	Yreka Waterline Bacteria Testing	2.00d 17-Sep-21	<u> </u>	 			ka Waterline Bacter		 													
6.005.31	Yreka Waterline Bringing New Line in to Service	1.00d 21-Sep-21					eka Waterline Bringir		in to Ser	vice												
6.005.21	Yreka Waterline Remove Existing Water Pipe	4.00d 21-Sep-21				☐ Yre	eka Waterline Remo	ve Existina	Water Pir	e .												
6.005.1	Yreka Waterline Backfill New Water Pipe	16.00d 26-Sep-21	<u> </u>	+1			reka Waterline Backi	1 -														
	·	349.88d 30-Jun-21				2 1		02-Nov-21,		Dam												
Copco 1 Da								1 :	1 7 1					ļļ						<u>-</u>	ļļ	
	n and Demobilization	4.00d 30-Jun-21					20, Mobilization and ation At Copco 1	Demobilizat	ION													
1050	Mobilization At Copco 1	4.00d 30-Jun-21			1															Ì		
	Tunnel Modification	72.50d 07-Jul-21	15-Oct-21				5-Oct-20, Diversion ⁻															
2.009.2	Installation of 16.5 X 18.5 Roller Gate and Gate Structure	40.00d 07-Jul-21	03-Sep-21				allation of 16.5 X 18.													Ì		
2.001.1	Modify Mallard Cove Boat Launch for Barge and Crane Launch	4.00d 07-Jul-21	11-Jul-21			- I Modity	Mallard Cove Boat I	_auncn;tor E	arge and	Crane La	uncn										ļļ	
2.001	Mobilize Crane And Barge Launch Area	14.00d 13-Jul-21	31-Jul-21				ze Grane And Barge		a													
2.001.2	Launch/ Position Crane and Barge	2.00d 03-Aug-21		11			ch/ Position Crane ar		1 1.1													
2.002	Remove Sediment from Diversion Tunnel Intake to provide access	5.00d 05-Aug-21					ove Sediment from D															
2.021	Remove & Dispose of 3 - 72" flapper valves with remote mechanical	3.70d 13-Aug-21					ove & Dispose of 3 -			ith remot	e mechai	nical										
2.009	Installation of 3 each 72" Blind Flanges	7.60d 18-Aug-21					allation of 3 each 72							1							ļļ	
2.007	Remove Current Diversion Tunnel Plug	13.00d 03-Sep-21	23-Sep-21				move Current Divers			J., J		İ								į		
2.100	Diversion Tunnel Concrete Lining (Reinforced Shotcrete)	7.00d 21-Sep-21					version Tunnel Conc															
2.019	Remove & Dispose of 3 sections of 23' of 72" Dia. steel lining (embedded)	5.00d 30-Sep-21					emove & Dispose of					g (embe	edded)									
2.02	Remove & Dispose of 3 - 72" butterfly valves (embedded)	5.10d 07-Oct-21		11		. 49	emove & Dispose of	1 :	1 1 1	1 1	1 1											
2.014	Remove Diversion Tunnel Control Structure Concrete	5.80d 08-Oct-21	15-Oct-21	<u> </u>			emave Diversion Tu			Concret	e ;			ļļ							ļ	
Copco 1 Dr	raw Down	122.00d 01-Nov-21	03-Mar-22				03-Mar-21, Co		Down			İ								į		
DD1000	Copco 1 Power Plant Shutdown	0.00d 01-Nov-21	*				Copco 1 Power Plant															
DD1010	Copco 1 Reservoir Draw Down EL2609.5 to EL2590 Through Spillway	6.00d 01-Nov-21	07-Nov-21				Capco 1 Reservoir D			to EL259	0 Throug	h Spillw	/ay							Ì		
DD1020	Draw Down Delay For Iron Gate	68.90d 07-Nov-21		41			Draw Down Dela			-												
DD1030	Copco 1 Reservoir Draw Down EL2590 to 2485.5 Through Gate Div Tunnel	47.00d 15-Jan-22	_	<u> </u>		ļ∦¦.	Copco 1 Rese				185.5 Thr	ough G	ate Div	Tunnel					أـــــالٍــــا		ļļ	
Dam Demo		254.88d 09-Nov-21	29-Oct-22			🔻		29-Oct-21,	1 1 1	olition						1				i		
2.016	Remove & Dispose of Radial Gates	5.00d 09-Nov-21				·	Remove & Dispose	• •														
2.017	Remove & Dispose Radial Gate Stop logs	1.00d 17-Nov-21		11			Remove & Dispose	1 1	1 1 1 -	1 1												
2.018	Remove & Dispose Stop log hoist, track and supports	2.00d 19-Nov-21	20-Nov-21				Remove & Dispose															
2.022	Remove & Dispose of Spillway gate motor & control panel	1.00d 23-Nov-21	23-Nov-21				Remove & Dispose			or & cont	rol panel]			. l l.				L	
2.067	Remove & Dispose of 8 screens	0.80d 25-Nov-21	25-Nov-21	11			Remove & Dispose															
2.068	Remove & Dispose of 8 Water Gates	0.80d 25-Nov-21	30-Nov-21	1			Remove & Dispose	e of 8 Water	Gates			į										
2.012	Remove Structural Steel from Spillway	4.00d 30-Nov-21					Remove Structural	Steel from	Spillway													
2.015	Remove & Dispose of Hand Rails at dam	0.80d 07-Dec-21		1		-	Remove & Dispose					}				1						
2.003	Mobilize Large Crane on Right Abutment	1.00d 16-Feb-22	16-Feb-22*	11			► Mobilize Large							j								
2.063	Remove gate house #1 from top of dam	0.60d 18-Feb-22	18-Feb-22				Remove gate I	1 :				-										
2.064	Remove gate house #2 from top of dam	0.60d 18-Feb-22	19-Feb-22				Remove gate I		1 7 7 1							1				i		
2.065	Remove Concrete Items associated with 10 ft. diam. Penstocks, reinf. Co	8.20d 19-Feb-22	04-Mar-22				► Remove Cond								crete	1						
2.069	Remove & Dispose of 3 - 30" Dia. x 25' stand pipes (10' Penstock)	0.80d 04-Mar-22	08-Mar-22				Remove & Di					(10' Per	nstock)									
2.071	Remove & Dispose of 10' Dia. penstock pipe	8.90d 12-Mar-22	26-Mar-22				Remove & D	ispose of 1	0' Dia, pe	nstock pi	ре											
					- 11					•				· .					· · · · · · · · · · · · · · · · · · ·			
Remaining Leve	el of Effort Remaining Work Summary				Page	e 4 of 13															A T	
Actual Level of	·				, age																AE(COM
	AA ****																					

◆◆ Milestone

Klamath River Renev	val Project 2019									02	2-Jul-19
Activity ID	Activity Name	Original Start Duration	Finish		021 2022 Q3 Q4 Q1 Q2 Q3 Q4 Q1	2023 2024 Q2 Q3 Q4 Q1 Q2 Q3 Q4	2025 4 Q1 Q2 Q3 Q4	2026 Q1 Q2 Q3 Q4	2027 Q1 Q2 Q3 Q4 0	2028 Q1 Q2 Q3	2029 Q4 Q1 Q2
2.07	Remove & Dispose of 14' Dia. penstock pipe	8.40d 26-Mar-22	09-Apr-22			se of 14' Dia. penstock pipe					
2.066	Plug 14-foot diameter penstock with concrete	12.70d 09-Apr-22	29-Apr-22			meter penstock with concrete					
2.011	Remove Concrete Intake Structure on Right Abutment	43.20d 29-Apr-22	<u> </u>		Remove Concr	rete Intake Structure on Right Abutn	nent				
2.010.a	Remove Concrete Dam from EL 2606 to 2590 (Demo Walls for Gates)	10.00d 15-Jun-22	28-Jun-22			crete Dam from EL 2606 to 2590 (D					
2.01	Remove Concrete Dam down to Elev. 2476	74.70d 29-Jun-22	14-Oct-22		. Id 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ve Concrete Dam down to Elev. 2470					
2.009.3	Removal New Roller Gate and Gate Structure	5.00d 14-Oct-22	22-Oct-22		F a Re <mark>mov</mark>	val New Roller Gate and Gate Struc	ure	} - - -			
2.013	Install Diversion Tunnel Plugs	5.00d 22-Oct-22	29-Oct-22			Diversion Tunnel Plugs					
Power Hou	use Demolition	344.88d 07-Jul-21	02-Nov-22		▼ 02-No	v-21, Power House Demolition					
2.081	Clear and Grub Disposal Area	5.00d 07-Jul-21	14-Jul-21	11	–ը Clear and Grub Disposal Area						
2.085	Access and Haulroad Improvements	5.00d 07-Jul-21	14-Jul-21	1	Access and Haulroad Improveme						
2.025	Remove Powerhouse Structural Steel	5.80d 02-Nov-21		1-1	Remove Powerhouse Struc	otural Steel		} 			: <u></u> :
2.026	Remove & Dispose of 2 - Governor Oil Systems	2.10d 10-Nov-21		1	Remove & Dispose of 2 -	Governor Oil Systems					
2.035a	Remove petroleum products from mechanical equipment	0.30d 10-Nov-21			Remove petroleum product						
2.027	Remove & Dispose of Cooling water and bearing oil systems	0.80d 13-Nov-21				oling water and bearing oil systems					
2.028	Remove & Dispose of 4 - Horizontal Tandem Francis Turbines	16.10d 16-Nov-21			Remove & Dispose of 4	+ Horizontal Tandem Francis Turbin	es				
2.005	Cofferdam Fill Material Production For Equipment Access	6.10d 17-Nov-21		 - 		roduction For Equipment Access		} 			† <u>-</u>
2.008	Tailrace Coffer Dam- Furnish & Unload Material	10.00d 01-Dec-21			Tailrace Coffer Dam Fur						
2.029	Remove & Dispose of 2 - 40 Ton indoor cranes	4.70d 17-Dec-21			Remove & Dispose of 2						
2.029	Remove & Dispose of 2 - 40 for indoor craftes Remove & Dispose of Compressed Air System	0.10d 29-Dec-21		1	Remove & Dispose of C	Compressed Air System					
2.03	Remove & Dispose of Compressed All Systems	0.40d 29-Dec-21			Remove & Dispose of 2						
	1	0.40d 29-Dec-21 0.30d 30-Dec-21		 		Plant Water and Fire Protection		}}			}
2.032	Remove & Dispose of Plant Water and Fire Protection					Transformer Oil Fire Protection					
2.033	Remove & Dispose of Transformer Oil Fire Protection	0.70d 30-Dec-21			Remove & Dispose of L						
2.034	Remove & Dispose of Unwatering Piping	1.20d 31-Dec-21			Remove & Dispose of Di						
2.035	Remove & Dispose of Drainage Piping	0.20d 04-Jan-22				Seven 40 Ton Travelling Crane moto	are boiet				
2.048	Remove & Dispose of Seven 40-Ton Travelling Crane motors - hoist	0.40d 04-Jan-22		 	Domble & Dispose of &	40-Ton Travelling Crane control equi	omont				·
2.049	Remove & Dispose of 40-Ton Travelling Crane control equipment	0.50d 04-Jan-22				40-Ton Travelling Crane Festoon Ca					
2.05	Remove & Dispose of 40-Ton Travelling Crane Festoon Cable	0.40d 05-Jan-22				Four 15-Ton Overhead Crane Motors					
2.051	Remove & Dispose of Four 15-Ton Overhead Crane Motors - hoist	0.10d 05-Jan-22									
2.052	Remove & Dispose of 15-Ton Overhead Crane control equipment	0.30d 05-Jan-22				15-Ton Overhead Crane control equi					
2.053	Remove & Dispose of 15-Ton Overhead Crane Festoon Cable	0.40d 06-Jan-22				15-Ton Overhead Crane Festoon Ca	DIE	ļļļļ			ļ .
2.008.1	Tailrace Coffer Dam- Drive Pile	17.30d 15-Jun-22			T	er Dam- Drive Pile					
2.082	Concrete Processing and Soil Cover Disposal Area	5.00d 29-Jun-22	05-Jul-22			ocessing and Soil Cover Disposal Ai	ea				
2.004	Remove Water from behind Tailrace Cofferdam	1.00d 08-Jul-22	09-Jul-22			ter from behind Tailrace Cofferdam					
2.006	Provide Dewatering behind Tailrace Cofferdam	1.00d 09-Jul-22	10-Jul-22			vatering behind Tailrace Cofferdam					
2.024	Remove Powerhouse Concrete down to top of rock under the Powerhouse	16.30d 12-Jul-22	04-Aug-22			owerhouse Concrete down to top of		ouse			
2.008.2	Tailrace Coffer Dam-Extract Pile and Restore Area	11.50d 14-Oct-22	02-Nov-22		i li thiti i ti li	ce Coffer Dam-Extract Pile and Res	ore Area				
Power Plan	nt Demolition	14.00d 02-Nov-21	25-Nov-21		₩ 25-Nov-20, Power Plant D						
2.023	Remove & Dispose Distribution equipment, panelboards	1.60d 02-Nov-21	03-Nov-21			ution equipment, panelboards					
2.036	Remove & Dispose of Horizontal AC Generator, Indoor Open Frame	5.00d 03-Nov-21	11-Nov-21			iżontal AC Generator, Indoor Open F					
2.037	Remove & Dispose of Excitation equipment for 12.5 MVA Generator	0.80d 03-Nov-21	04-Nov-21		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	itation equipment for 12.5 MVA Gen					
2.039	Remove & Dispose of Neutral grounding equip. for 12.5 MVA Generator	0.80d 03-Nov-21	04-Nov-21			itral grounding equip. for 12.5 MVA (
2.04	Remove & Dispose of Generator Switchgear, 5kV-includes unit breakers	0.80d 03-Nov-21	04-Nov-21			nerator Switchgear, 5kV-includes uni					
2.041	Remove & Dispose of Station Service Switchgear, 600 volt - (5 sections)	0.80d 03-Nov-21	04-Nov-21			tion Service Switchgear, 600 volt - (5 sections)				
2.042	Remove & Dispose of Unit and plant control switchboard	0.80d 03-Nov-21	04-Nov-21			and plant control switchboard					
2.043	Remove & Dispose of Battery System	2.40d 03-Nov-21	05-Nov-21		Remove & Dispose of Batt						
2.044	Remove & Dispose of Raceways, Conduit and Cable	1.60d 03-Nov-21	05-Nov-21		Remove & Dispose of Rac						
2.038	Remove & Dispose of Surge protection equip. for 12.5 MVA Generator	0.80d 03-Nov-21	04-Nov-21			ge protection equip. for 12.5 MVA G	enerator				
2.045	Remove & Dispose of Misc. power & control boards	0.80d 05-Nov-21	05-Nov-21		Remove & Dispose of Misc	c. power & control boards					
2.046	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 50	5.00d 09-Nov-21	_	11		ep-up Transformers, indoor, oil-filled,					
2.047	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 41	5.00d 17-Nov-21				ep-up Transformers, indoor, oil-filled	, 1-phase, 4165kVA				
2.053a	Remove petroleum products from mechanical equipment	2.10d 17-Nov-21		1 1	Remove petroleum produc	cts from mechanical equipment		} 			i
	rd Demolition	6.30d 20-Nov-21			₩ 03-Dec-20, Switch Yard D						
2.054	Remove & Dispose of 69kV circuit breakers, oil filled, PCB	0.80d 20-Nov-21				kV circuit breakers, oil filled, PCB					
2.055	Remove & Dispose of 69kV disconnect switches, group-operated	0.80d 20-Nov-21				kV disconnect switches, group-oper	ated				
2.056	Remove & Dispose of 60-foot wood poles	1.90d 23-Nov-21			Remove & Dispose of 60						
2.057	Remove & Dispose of 30-foot wood cross arms	1.20d 30-Nov-21			Remove & Dispose of 30			} -			t
2.058	Remove & Dispose of 69-kV insulator strings	1.60d 01-Dec-21			Remove & Dispose of 69						
	ion Line Demolition	23.81d 04-Jan-22			15-Feb-21, Transmiss						
		- COUNTY - C				<u> </u>	<u> </u>	<u> </u>	<u> </u>	i	
Remaining Lev	,			Page	e 5 of 13					Δ	ECOM
Actual Level of	f Effort Critical Remaining Work									1 1.	

◆◆ Milestone

Klamath River Renew	val Project 2019												02-	-Julr-19
Activity ID	Activity Name	Original Start	Finish	2020	202	1	2022	2023	2024	2025	2026	2027	2028	2029
Clivity ID	Activity Name	Duration	Fillisti						Q4 Q1 Q2 Q3 Q4					
2.059	Remove & Dispose of Transmission Line No. 3	2.66d 04-Jan-22	06-Jan-22			Rer	nove & Dispose	of Transmission	Line No. 3					
5.034	Remove Maintenance Building, North & South Residence	5.40d 04-Jan-22		<u> </u>		I⇒ii Rei	nove Maintena	nce Building, Nort	h & South Residence		ļ			
2.06	Remove & Dispose of Transmission Line No. 15	2.13d 06-Jan-22						of Transmission of Transmission						
2.061 2.062	Remove & Dispose of Transmission Line No. 26-1 Remove & Dispose of Transmission Line No. 26-2	0.11d 11-Jan-22 0.11d 11-Jan-22		-				e of Transmission						
5.006	Remove Frame dead end structures 60-80 ft high @Switchyard	4.00d 12-Jan-22							60-80 ft high @Switch	vard				
5.007	Remove Power Circuit Breakers 69KV @Switchyard	1.60d 20-Jan-22						rcuit Breakers 69						
5.008	Remove Disconnect Switches @Switchyard	3.20d 21-Jan-22						ct Switches @Sv						
5.009	Remove all associated auxiliary equipment @Switchyard (Allowance)	3.00d 27-Jan-22							uipment @Switchyard (/					
5.010	Remove Distribution lines 69 Kv between Copco 1 Switchyard and HE Pla	1.60d 27-Jan-22		1		F _i R	emove Distribut	on lines 69 Kv be	tween Copco 1 Switchy	yard and HE Plant (6 F	oles)			
5.011	Remove Distribution poles 2.4 Kv between Copco#1 HE Plant and Copco#2					ن و است ا		1 11 1 1 1	oetween Copco#1 HE P	lant and Copco#2 Div	ersion Dam			
5.012	Remove "Production Poles" in general area Copco#1	2.80d 27-Jan-22	02-Feb-22						eral area Copco#1					
5.013	Remove "Village Houses Distribution Poles" near dam (assumed 10)	2.70d 27-Jan-22							on Poles" near dam (a	ssumed 10)				
5.014	Remove 69 KV Distribution line 1.6 miles (30 poles)	10.00d 27-Jan-22							6 miles (30 poles)					
5.015	Remove Transmission conductors on poles 1X/001 and 2X/001 but keep di	0.80d 27-Jan-22				10 1 <u>11-11</u> 1 10	1 1 1		on poles 1X/001 and 2X		ition intact			
5.016	Remove Transmission conductors 1.3 miles Copco#1 to Copco#2	6.90d 27-Jan-22						ep-21, J.C. Boyle	1.3 miles Copco#1 to C	Jopco#2				
J.C. Boyle	Dam	224.25d 02-Nov-21					1 1 1	1 1 1 1 1 1 1			ļļļ	ļļļļļ.		
	n and Demobilization	5.00d 02-Nov-21					-20, Mobilization	n and Demobilizat	tion					
1070	Mobilization At JC Boyle	5.00d 02-Nov-21		_		—————————————————————————————————————		4 1 1 1 1 1						
JC Boyle D		90.00d 01-Jan-22				1 1 1 1 1	1 1 1	Boyle Drawdown	796.7 to EL 3785.2 (Sp	ill May)				
DD1230	JC Boyle Reservoir Draw Down EL 3796.7 to EL 3785.2 (Spill Way)	7.00d 01-Jan-22					Boyle Power Pl		790.7 to EL 3703.2 (Sp	www.vvay)				
DD1120	JC Boyle Power Plant Shutdown	0.00d 01-Jan-22*							3785.2 to EL 3771.7 (P	WR Intake)	}	}		
DD1510 DD1520	JC Boyle Reservoir Draw Down EL 3785.2 to EL 3771.7 (PWR Intake) JC Boyle Reservoir Draw Down EL 3771.7 to EL 3755.2 (DIV Bay 1& 2)	8.00d 08-Jan-22 75.00d 16-Jan-22							EL 3771.7 to EL 3755.2					
Dam Demo	, , ,		<u> </u>	-			' ' '	g-21, Dam Demol		(Biv Bay Ia 2)				
1.014	Remove Dam Communication Bldg. on left abutment	0.40d 04-Jan-22	_			Ren	- 1 (i	munication Bldg.	i i i i					
1.013	Remove Fire System Control Bldg. on left abutment	0.50d 04-Jan-22				1 1149 1 1 13		m Control Bldg o						
1.016	Remove 4'x5' Metal Hatch on top of Concrete Pull Box on left abutment	0.30d 04-Jan-22							Concrete Pull Box on le	ft abutment				
1.015	Remove Concrete Slab on left abutment for former Control House	0.40d 08-Jan-22		1					nent for former Control I					
1.009	Remove Timber Equipment Ramp on left side of Dam	0.60d 08-Jan-22				Ren	nove Timber E	uipment Ramp or	n left side of Dam					
1.017	Remove Reservoir Level Gauge House on Dam Crest			1			Remove Rese	rvoir Level Gauge	House on Dam Crest					
1.023	Remove & Dispose Hand Rails and Light Poles		<u> </u>				: 1 ! !	pose Hand Rails						
1.006	Remove Monorail Structural Steel Components	0.60d 05-Apr-22	05-Apr-22					orail \$tructural \$te						
1.024	Remove & Dispose Spillway Radial Gates and Hoists	5.00d 05-Apr-22	13-Apr-22			1 11111	: . :		adial Gates and Hoists					
1.026	Remove & Dispose of 24" Slide Gate at Entrance to Fish Ladder Structure	0.50d 05-Apr-22	06-Apr-22				Remove & Di	spose of 24" Slide	Gate at Entrance to Fi	ish Ladder Structure				
1.078	Remove Traveling Water Screen	3.30d 06-Apr-22						eling Water Scree						
1.027	Remove & Dispose of Spillway gate motor & control panel	0.80d 06-Apr-22		<u> </u>	- -				gate motor & control pa		ļ <u>i</u> i	ļ <u> </u>		
1.028	Remove & Dispose of Distribution equipment, panelboards	1.60d 07-Apr-22	<u>.</u>				Remove & Di	spose of Distribut	ion equipment, panelbo	ards				
1.062	Remove Fish Screen Building	3.00d 12-Apr-22					Remove Fish	Screen Building sh By-Pass and S						
1.079	Remove Fish By-Pass and Supports (steel)	19.10d 16-Apr-22		-1 1 1			7 1 : : :	ash rack and trast						
1.076	Remove Trash rack and trash rake (steel)	3.00d 18-May-22						the state of the s	n rake (steel) Gate, Frame, and Hoist	N I				
1.075	Remove Fixed Wheel Gate (Gate, Frame, and Hoist)	1.50d 24-May-22							on (Dam Earth Section)		}	}		
1.020 1.018	Miscellaneous Excavation (Dam Earth Section) Remove Downstream Rip Rap	37.90d 17-Jun-22* 3.90d 17-Jun-22*		+				Downstream Rip F						
1.019	Remove Upstream Rip Rap	2.30d 17-Jun-22*		-				Jpstream Rip Rap						
1.077	Remove Stop Logs and Slots (steel)	2.50d 01-Jul-22	06-Jul-22					Stop Logs and SI						
1.010	Remove Pressure-Treated Lumber from Footbridge around Intake Structure	2.00d 01-Jul-22	02-Jul-22	1				., 0, , ,	Lumber from Footbridg	e around Intake Struc	ture			
1.005	Remove Spillway Concrete	7.00d 01-Jul-22	12-Jul-22			····I# †:::	Remove	Spillway Concret	e : : : : : : : : : : : : : : : : : : :		}	<u></u>		
1.063	Remove 24" Steel Fish Discharge Pipe	0.60d 06-Jul-22	07-Jul-22				Remove	24" Steel Fish Di	scharge Pipe					
1.061	Remove Intake Structure Concrete	10.70d 13-Jul-22	28-Jul-22	11			ш . :	e Intake Structure						
1.007	Remove Fish Ladder Concrete	12.10d 28-Jul-22	13-Aug-22					ve Fish Ladder Co						
1.021	Cutoff Wall Concrete Demolition	0.90d 11-Aug-22					—	Wall Concrete De	emolition	<u>.jj.</u>	[
1.022	Cutoff Wall Anchors	0.50d 12-Aug-22	13-Aug-22				— :	Wall Anchors						
5.033.1	Upstream Cofferdam Breach	2.00d 12-Aug-22	16-Aug-22]				am Cofferdam Br						
1.025	Remove & Dispose Stop Logs and Slots (steel)	1.50d 13-Aug-22							p Logs and Slots (steel))				
1.008	Remove Gravity Dam Section Concrete	2.00d 13-Aug-22					4 1 1	ve Gravity Dam S						
1.001	Removal of Diversion Conduit Bulkheads	1.00d 16-Aug-22	17-Aug-22			<u> </u>	► Remo	val of Diversion C	onduit Bulkheads					
Remaining Lev	el of Effort ☐ Remaining Work ▼ Summary	<u> </u>				2 - 5 4 6					<u>-</u>			
Actual Level of	Effort Critical Remaining Work				Page 6	o 01 13							AF	ECOM

Actual Level of Effort

Actual Work

Critical Remaining Work

◆◆ Milestone

Klamath River Rene	ewal Project 2019												C)2-Julr-19
Activity ID	Activity Name	Original Start Duration	Finish	2020 Q2 Q3 Q4	2021 Q1 Q2 Q3	Q4 Q					2026 Q1 Q2 Q3 Q4	2027 Q1 Q2 Q3 Q4	2028 Q1 Q2 Q3	2029 3 Q4 Q1 Q2
5.033	Upstream Cofferdam to be Removed in the Wet	7.30d 16-Aug-22	26-Aug-22						be Removed in the W	et				
Forebay D	Demolition	156.30d 04-Jan-22						Sep-21, Forebay Dei	1 1 1					
1.065	Remove Open Concrete Flume	87.70d 04-Jan-22	28-May-22				1 1 1 1	Open Concrete Flum	1 1 1					
1.07	Remove Head gate Control Building at Flume Entrance	0.50d 04-Jan-22	04-Jan-22					te Control Building a						
1.107	Concrete Demolition in Waste way (Fore bay) Scour Hole	146.60d 04-Jan-22	26-Aug-22						Vaste way (Fore bay) \$	Scour Hole				
1.071	Remove Fore bay Spillway Gate House	0.60d 04-Jan-22	05-Jan-22					pillway Gate Hous	e					
1.072	Remove Fore bay Control Building	1.00d 05-Jan-22	06-Jan-22					/ Control Building						
1.074	Remove Insulated Generator Building next to Fore bay Control Building	0.10d 06-Jan-22	06-Jan-22						next to Fore bay Cont	rol Building				
1.08	Remove Gates and Hoists	0.60d 06-Jan-22	06-Jan-22			1 11111	Remove Gates a							
1.081	Remove Trash rack and trash rake (steel)	2.00d 06-Jan-22	11-Jan-22					ck and trash rake (s	teel)					
1.082	Remove stop Logs and slots (steel)	1.90d 11-Jan-22	14-Jan-22					gs and slots (steel)						
1.066	Remove Structural Steel items associated with Forebay Trash Rack Piers	0.40d 14-Jan-22	15-Jan-22						ciated with Forebay Tra	ash Rack Piers				
1.067	Remove Forebay Concrete	25.20d 15-Jan-22	02-Mar-22			+ =	Remove Forel							
1.103	Soil Cover Over Concrete Rubble (Scour Hole)	39.70d 13-Jul-22	10-Sep-22						te Rubble (Scour Hole)				
Misc Buil	ding Demolition	18.50d 10-Nov-21	15-Dec-21					ulding Demolition						
1.011	Remove Storage Shed located on access road	4.00d 10-Nov-21	16-Nov-21		· · · []			ed located on acces						
1.012	Remove Warehouse, North Residence, and South Residence Near Dam A	10.00d 17-Nov-21		11		-∎ Re	move Warehous	e North Residence,	and South Residence	Near Dam Access I	Road			
1.031	Remove Warehouse near Powerhouse	4.50d 08-Dec-21	15-Dec-21			TI R	emove Warehou	se near Powerhouse						
	Demolition	177.88d 10-Nov-21				₩		-2 <mark>1, Penstock Demo</mark>	lition					
1.098	Clear and Grub, 40' width for Haul Roads	0.80d 10-Nov-21		-				width for Haul Roads						
1.088	Install and Remove Temporary Access Roads for Penstock Demo	10.00d 18-Jan-22		1-1		1 +0	Install and Rem	ove Temporary Acce	ss Roads for Penstoc y valves	k Demo			† -	
1.085	Remove & Dispose 2 - 108" Butterfly valves	5.10d 01-Feb-22					Remove & Disp	ose 2 - 108" Butterf	y valves					
1.083	Remove & Dispose Penstocks and bifurcation (steel)	52.80d 09-Feb-22		11					and bifurcation (steel)					
1.064	Remove Concrete Items associated with the 14-ft-diameter Steel Pipe	8.60d 05-May-22		1					ciated with the 14-ft-d					
1.084	Remove & Dispose Surge Tank (steel)	5.30d 20-May-22		11 : :				& Dispose Surge Tar						
1.069	Remove Concrete Items associated with Penstocks D/S from Tunnel	14.10d 27-May-22				+-+++			ociated with Penstocl	ks D/S from Tunnel			·}}	·
1.068	Place Concrete Plugs at Tunnel Portals	17.00d 18-Jun-22		11				Concrete Plugs at T						
	suse Demolition	149.00d 04-Jan-22		-				I-21, Power House D						
1.03	Remove Structural Steel Item associated with Powerhouse	4.90d 04-Jan-22				-	1 6 1 1 1		ated with Powerhouse					
1.086	Remove & Dispose Gate, Stem and Frame	2.00d 11-Jan-22	_					se Gate, Stem and I						
1.087	Remove & Dispose Gate, Stell and Traine Remove & Dispose of Steel Transition Manifolds on Upstream and Downs	6.70d 14-Jan-22					Remove & Disp	ose of Steel Transition	on Manifolds on Upstro	eam and Downstream	<u>, </u>		·}}	·
1.035	Remove & Dispose of 150 Ton crane	8.00d 27-Jan-22					Remove & Disr	ose of 150 Ton cran	e					
1.087a	Remove petroleum products from Mechanical Equipment	0.90d 10-Feb-22							lechanical Equipment					
1.026a	Remove petroleum products from Red Bam Area	2.30d 12-Feb-22		11			11 1, ,) ,	eum products from F						
							E 2' ' 1 ' 1		Mechanical Equipment					
1.043a	Remove petroleum products from Mechanical Equipment	3.90d 16-Feb-22					Demove & Die	spose of 2 - Governo	r oil eveteme					
1.032	Remove & Dispose of 2 - Governor oil systems	2.90d 24-Feb-22							er and bearing oil syst	ome				
1.033	Remove & Dispose of Cooling water and bearing oil systems	0.50d 01-Mar-22					<u>., , , , , , , , , , , , , , , , , , , </u>	spose of Compresse	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GIIIS				
1.036	Remove & Dispose of Compressed Air systems	0.15d 02-Mar-22					44 1, 1 1	spose of Complesse	1 71 1 1					
1.037	Remove & Dispose of 2 - CO2 systems	0.90d 02-Mar-22					44 (* 1		and Fire Protection					
1.038	Remove & Dispose of Plant Water and Fire Protection	0.40d 03-Mar-22						spose of Transforme					.}}	
1.039	Remove & Dispose of Transformer Oil Fire Protection	0.90d 03-Mar-22						spose of Transforme spose of Unwatering						
1.04	Remove & Dispose of Unwatering Piping	1.50d 04-Mar-22						spose of Oriwalering spose of Drainage Pi						
1.041	Remove & Dispose of Drainage Piping	1.00d 08-Mar-22		-				spose of 2-Oil Sump						
1.042	Remove & Dispose of 2-Oil Sump pumps	0.30d 09-Mar-22					1311 1 1 1	Dispose of 2 - Franci						
1.034	Remove & Dispose of 2 - Francis Turbines	20.00d 10-Mar-22		- 		4-44			s rurbines n equipment for 53/50	MV/A Conorotor			·}}	
1.045	Remove & Dispose of Excitation equipment for 53/50 MVA Generator	1.60d 13-Apr-22												
1.046	Remove & Dispose of Surge protection equip. for 53/50 MVA Generator	1.60d 15-Apr-22							otection equip. for 53/5					
1.047	Remove & Dispose of Neutral grounding equip. for 53/50 MVA Generator								rounding equip. for 53					
1.048	Remove & Dispose of Generator Switchgear, 15kV - (6 sections)	0.80d 21-Apr-22		41					r Switchgear, 15kV - (
1.049	Remove & Dispose of Station Service Switchgear, 600 volt - (5 sections)	0.80d 21-Apr-22				4.444			Service Switchgear, 60					
1.05	Remove & Dispose of Unit and plant control switchboard			11					plant control switchbo	ard				
1.053	Remove & Dispose of Misc. power & control boards	1.60d 23-Apr-22		11					wer & control boards					
1.051	Remove & Dispose - Battery system	1.60d 27-Apr-22		11				Dispose - Battery sy		10				
1.055	Remove & Dispose of Gantry Crane control equipment (3 cubicles)	0.80d 27-Apr-22		11			:		rane control equipmer					
1.044	Remove & Dispose of Outdoor Vertical AC Generator, Unit 1: 53 MVA	5.00d 27-Apr-22	04-May-22	11					Vertical AC Generator	, Unit 1: 53 MVA			ļļl	
1.052	Remove & Dispose of Raceways, Conduit and Cable	1.60d 28-Apr-22							s, Conduit and Cable					
1.054	Remove & Dispose of 5 Gantry Crane motors - hoist (50Hp*), aux hoist	0.20d 04-May-22							Crane motors - hoist	(50Hp*), aux hoist				
1.056	Remove & Dispose of Conduit and Cable	1.60d 05-May-22	06-May-22			<u></u>	Remove &	Dispose of Conduit	and Cable					
Remaining Le	evel of Effort Remaining Work Summary				Page 7 of	13								
Actual Level					i aye i di	10							Α	ECOM
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◆◆ Milestone

ID	Activity Name	Original	Start	Finish	2020 2021 2022 2023 2024 2025 2026 2027	2028
		Duration			Q2 Q3 Q4 Q1 Q3 Q4 Q1 Q3 <td< th=""><th>Q2 Q3 Q4 C</th></td<>	Q2 Q3 Q4 C
1.057	Remove & Dispose of Exterior Lighting			10-May-22	2 Pispose of Exterior Lighting Gonstruct Embankment Cofferdam in Tailrace around Powerhouse	
1.004	Construct Embankment Cofferdam in Tailrace around Powerhouse		01-Jul-22	06-Jul-22	Frovide Dewatering behind Tailrace Cofferdam	
1.003	Provide Dewatering behind Tailrace Cofferdam		07-Jul-22	07-Jul-22	Remove Water from behind Tailrade Cofferdam	
1.002	Remove Water from behind Tailrace Cofferdam		07-Jul-22	10-Jul-22	Remove & Dispose of Draft Tube Bulk Head Gates and Hoists at the Powerhouse	
1.043	Remove & Dispose of Draft Tube Bulk Head Gates and Hoists at the Pow		12-Jul-22	15-Jul-22	Remove Powerhouse Concrete down to Elevation 3324.0 and restore area.	
1.029	Remove Powerhouse Concrete down to Elevation 3324.0 and restore area.		15-Jul-22	26-Jul-22 29-Jul-22		
1.004.1	Remove Cofferdam and Regrade Tailrace		26-Jul-22 09-Feb-22	29-Jul-22 22-Apr-22		
1.058	Remove & Dispose of Transmission Line No. 59		09-Feb-22 09-Feb-22	12-Feb-22		
1.059	Remove & Dispose of Transmission Line No. 98		12-Feb-22	12-Feb-22		
1.060	Remove & Dispose of Transmission Line No. 58		12-Feb-22			
5.000	Remove Frame dead end structures 60-80 ft high		18-Feb-22	19-Feb-22		
5.000	Remove (incl foundation) and Save Transformers 230KV		19-Feb-22	22-Feb-22		
5.002	Remove (incl foundation) and Save Power Circuit Breakers 230KV		22-Feb-22	25-Feb-22		
5.003	Substation Tie Structure 230KV		25-Feb-22			
5.004	Remove Chain Link Fence		02-Mar-22			
5.005	Demolish overhead distribution 2.5 miles (30-45 poles)		02-Mar-22	29-Mar-22		
5.032	Install 230kV strain transmission structures outside JC Boyle Substation		29-Mar-22			
Copco 2 [·		22-Apr-22			
			01-May-22			
Dam Dem 1110	Copco 2 Power Plant Shut Down		01-May-22*	00-Dec-22	Copgo 2 Pover Plant \$hut Down	
3.002	Access Trestle- Furnish & Unload Material			05-May-22		
3.002	Access Trestle- Drive Pile		15-Jun-22			
3.002.1	Access Trestle - Fabricate Trestle Platform				Access Trestle - Fabricate Trestle Platform	
3.002.2	Left Side Coffer Dam- Furnish & Unload Material		01-Jul-22	08-Jul-22	Left Side Coffer Dam Furnish & Unload Material	
3.005.1	Left Side Coffer Dam- Prive Pile		08-Jul-22	12-Jul-22	Left Side Coffer Dam- Drive Pile	
3.008	Remove Water from behind Cofferdams		12-Jul-22	13-Jul-22	Remove Water from behind Cofferdams	
3.007	Provide Dewatering behind left Side Cofferdam		13-Jul-22	23-Jul-22	Provide Dewatering behind left Side Cofferdam	
3.023	Remove & Dispose - Spillway intake gate motor & control panel		23-Jul-22	23-Jul-22	Remove & Dispose - Spillway intake gate motor & control panel	
3.024	Remove & Dispose - Spillway radial gate motor & control panel		23-Jul-22	23-Jul-22	Remove & Dispose - Spillway radial gate motor & control panel	
3.025	Remove & Dispose - Spillway trashrake motor, festoon cable & control par		23-Jul-22	23-Jul-22	Remove & Dispose - Spillway trashrake motor, festoor cable & control panel	
3.026	Remove & Dispose - Distribution equipment, panelboards		23-Jul-22	26-Jul-22	Remove & Dispose - Distribution equipment, panelboards	
3.020	Remove & Dispose - Hand rails and Light Poles		26-Jul-22	26-Jul-22	Remove & Dispose - Hand rails and Light Poles	
3.065	Remove & Dispose of Caterpiller Gate (steel)		26-Jul-22	29-Jul-22	Remove & Dispose of Caterpiller Gate (steel)	
3.021	Remove & Dispose - Radial Gates and Hoists		30-Jul-22	02-Aug-22		
3.066	Remove & Dispose of Trash rack and trash rake (steel)			05-Aug-22		
3.022	Remove & Dispose - 5-Radial Gate Stoplogs & Slots (steel)			09-Aug-22		
3.067	Remove & Dispose of Stop Logs and slots for intake (steel)			23-Aug-22	2	
3.061	Remove Intake Structure Concrete			09-Sep-22	2	
3.014.1	Remove Concrete in Dam Left Side			17-Sep-22		
3.005.2	Left Side Coffer Dam- Extract Pile			24-Sep-22		
3.005.3	Left Side Coffer Dam- Load & Hauloff Material		27-Sep-22			
3.001	Right Side Coffer Dam- Furnish & Unload Material	2.00d	04-Oct-22	05-Oct-22	Right Side Coffer Dam- Furnish & Unload Material	
3.001.1	Right Side Coffer Dam- Drive Pile	5.00d	05-Oct-22	12-Oct-22		
3.003	Provide Dewatering behind Cofferdams	10.00d	12-Oct-22	22-Oct-22	Provide Dewatering behind Cofferdams	
3.004	Remove Water from behind Cofferdams	1.60d	12-Oct-22	14-Oct-22	Remove Water from behind Cofferdams	
3.015	Remove concrete equipment slab from top of embankment wing dam on rig	0.30d	14-Oct-22	14-Oct-22		
3.017	Right Abutment Removal - Random Fill	5.00d	14-Oct-22	22-Oct-22		
3.016	Remove Concrete Wing wall	2.10d	22-Oct-22	25-Oct-22	Remove Concrete Wing wall	
3.018	Right Abutment Removal - Remove Hand Placed Riprap	0.80d	22-Oct-22	25-Oct-22	Right Abutment Removal - Remove Hand Placed Riprap	
3.019	Right Abutment Removal - Gunite Curtain Wall		25-Oct-22	26-Oct-22	Right Abutment Removal - Gunite Curtain Wall	
3.014	Remove Concrete Dam Right Side		27-Oct-22	02-Nov-22		
3.001.2	Right Side Coffer Dam- Extract Pile			10-Nov-22		
3.002.3	Access Trestle - Remove Trestle Platform		10-Nov-22	_		
3.002.4	Access Trestle- Extract Pile			23-Nov-22		
3.002.5	Access Trestle- Load & Hauloff Material			06-Dec-22		
	Demolition	124.25d				· ' '

Actual Level of Effort

Actual Work

Critical Remaining Work

◆◆ Milestone

Klamath River Renew	val Project 2019												02-	-Julr-19
Activity ID	Activity Name	Original Start Duration	Finish	2020 Q2 Q3 Q4 Q1	2021 Q2 Q3 Q4	2022 Q1 Q2 Q3 Q4	2023 Q1 Q2 Q3 Q4	2024 Q1 Q2 Q3 Q4	2025 Q1 Q2 Q3 Q4	2026 Q1 Q2 Q3	202		2028	2029 Q4 Q1 Q2
3.073	Remove & Dispose of 2 - 138" Butterfly valves	4.70d 03-May-22	10-May-22			Pa Remove &	Dispose of 2 - 138" B	utterfly valves						
3.071	Remove & Dispose of Penstock after bifurcation to butterfly valves	28.40d 10-May-22					& Dispose of Pensto							
3.072	Remove & Dispose of Bifurcated vent pipes and support structure	0.40d 23-Jun-22	23-Jun-22				& Dispose of Bifurcat							
3.064	Remove Concrete Items associated with Penstocks D/S from Tunnel No. 2	35.00d 23-Jun-22	13-Aug-22				e Concrete Items as		ocks D/S from Tunne	el No. 2				
3.070	Remove & Dispose of Bands (steel)	6.00d 13-Aug-22	24-Aug-22				ve & Dispose of Ban							
3.068	Remove & Dispose of Wood Staves Soaked in Creosote	22.00d 24-Aug-22	<u> </u>				ove & Dispose of Wo		n Creosote					
3.069	Remove & Dispose of Cradles (steel)	9.30d 07-Sep-22					ove & Dispose of Cr		t	D:				
3.062	Remove Concrete Items associated with 16-foot I.D. Wood Stave Pipe	10.20d 21-Sep-22				10: 1	move Concrete Items ace Concrete Plugs f		toot I.D. Wood Stav	e Pipe				
3.063	Place Concrete Plugs for Tunnels	7.30d 11-Oct-22		_			ep-21, Power House							
	use Demolition	99.50d 03-May-22				1 1 11 1 1 1 1	Dispose - 2 - Franci						·	
3.037	Remove & Dispose - 2 - Francis Turbines	23.60d 03-May-22		-			Dispose - Drainage P							
3.044 3.033	Remove & Dispose - Drainage Piping Remove & Dispose - 2 - Governor oil systems	1.80d 10-May-22					Dispose - 2 - Governo							
3.034	Remove & Dispose - 2 - Governor on systems Remove & Dispose - Cooling water and bearing oil systems	1.20d 11-May-22 0.40d 14-May-22		-1 1 1 1 1 1 1			Dispose - Cooling wa		stems					
3.035	Remove & Dispose - Oil / Water separator tank and piping	0.10d 14-May-22					Dispose - Oil / Water							
3.041	Remove & Dispose - Plant Water and Fire Protection	0.40d 14-May-22					Dispose - Plant Wate						++	
3.042	Remove & Dispose - Transformr Oil Fire Protection	0.30d 14-May-22				Remove &	Dispose - Transform	Oil Fire Protection						
3.043	Remove & Dispose - Unwatering Piping	1.40d 17-May-22		-		Remove &	Dispose - Unwatering	Piping						
3.036	Remove & Dispose - 12 - Cast Iron Columns	2.00d 18-May-22		-1 1 1 1 1 1 1			Dispose - 12 - Cast I							
3.039	Remove & Dispose - Compressed Air Systems	0.13d 20-May-22				Remove &	Dispose - Compress	ed Air Systems						
3.040	Remove & Dispose - 2 - CO2 Systems	0.30d 20-May-22	21-May-22				Dispose - 2 - CO2 Sy							
3.058a	Remove Oil from Oil-Filled Step-up Transformers	1.80d 21-May-22	24-May-22				from Oil-Filled Step							
3.044a	Remove & Dispose - Petroleum Products from Mechanical Equip.	2.40d 24-May-22	27-May-22				Dispose - Petroleum							
3.044b	Remove & Dispose - Remove Petroleum Products at or near the Power Ho	2.40d 27-May-22					Dispose - Remove F			House				
3.027	Remove Copper Shingles from Roof of Powerhouse	1.60d 08-Jun-22					opper Shingles from							
3.029	Remove Structural Steel items associated with Powerhouse	11.60d 08-Jun-22					Structural Steel item		werhouse					
3.038	Remove & Dispose - 2 - 40 Ton indoor cranes	5.00d 28-Jun-22					& Dispose - 2 - 40 To							
3.031	Remove Control House Structural Steel Items	0.20d 06-Jul-22	06-Jul-22			1 1 1 G	Control House Struc		h - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -					
3.055	Remove & Dispose - 7 - 40-Ton Travelling Crane motors-hoist (2-30Hp)	0.40d 07-Jul-22	07-Jul-22				& Dispose - 7 - 40-T & Dispose - 40-Ton			"				
3.056	Remove & Dispose - 40-Ton Travelling Crane control equipment	0.70d 07-Jul-22	07-Jul-22				& Dispose - 40-Ton							
3.057	Remove & Dispose - 40-Ton Travelling Crane Festoon Cable	0.40d 07-Jul-22	07-Jul-22	-			Shop Building	ravelling Clane i es	COOT Gable					
3.032	Remove Shop Building Remove Control House Concrete	3.80d 07-Jul-22 0.80d 13-Jul-22	13-Jul-22			· · · · · · · · · · · · · · · · · · ·	Control House Conc	rete						
3.030 3.045	Remove & Dispose - AC Generator, Indoor Vertical	8.00d 15-Jul-22	13-Jul-22 26-Jul-22				e & Dispose - AC Ge		al					
3.045	Remove & Dispose - Excitation equipment for 15 MVA Generator	1.10d 27-Jul-22	28-Jul-22	-			e & Dispose - Excitat							
3.047	Remove & Dispose - Surge protection equip. for 15 MVA Generator	1.10d 27-3di-22	29-Jul-22				e & Dispose - Surge		1 1 1				++	
3.048	Remove & Dispose - Neutral grounding equip. for 15 MVA Generator	0.80d 29-Jul-22	29-Jul-22				e & Dispose - Neutra							
3.049	Remove & Dispose - Generator Switchgear, 7.2kV-includes unit breakers	2.00d 30-Jul-22	02-Aug-22				e & Dispose - Gener			kers				
3.050	Remove & Dispose - Station Service Switchgear, 600-volt (5 sections)	2.00d 03-Aug-22				Re mov	e & Dispose - Statio	h Service Switchgea	, 600-volt (5 section	s)				
3.051	Remove & Dispose - Unit and plant control switchboard	0.80d 05-Aug-22					e & Dispose - Unit a		hboard					
3.052	Remove & Dispose - Battery system	1.60d 05-Aug-22					e & Dispose - Batter							
3.053	Remove & Dispose - Raceways, Conduit and Cable	1.60d 09-Aug-22	10-Aug-22			: : :: : : : : : : : : : : : : : : : : :	e & Dispose - Racev							
3.054	Remove & Dispose - Misc. Power & Control Boards	0.80d 11-Aug-22					e & Dispose - Misc.							
3.011	Tailrace Coffer Dam- Furnish & Unload Material	7.10d 11-Aug-22					e Coffer Dam- Furnis							
3.011.1	Tailrace Coffer Dam - Drive Pile	2.00d 23-Aug-22					ce Coffer Dam - Drive		ļļļļ.					
3.009	Remove Water from behind Tailrace Cofferdam	3.20d 25-Aug-22					ve Water from behin de Dewatering behind							
3.010	Provide Dewatering behind Tailrace Cofferdam	0.80d 28-Aug-22					ne Dewatering benind							
3.028	Remove Powerhouse Concrete down to spring-line of turbine	10.60d 30-Aug-22				lii	ace Coffer Dam - Ext		Fille of turbine					
3.011.2	Tailrace Coffer Dam - Extract Pile	2.00d 14-Sep-22		<u>- </u>		1 1 1 1 1 1 1 1	I. Transmission Line							
	on Line Demolition Disconnect and remove MV Transformers 115 KV @ Substation	50.69d 22-Apr-22 0.89d 22-Apr-22		 			nd remove MV Trans		Substation				-}}	
5.017 5.018	Disconnect and remove MrV Transformers 115 KV @ Substation Disconnect and remove Medium Voltage Circuit Breakers 69KV @ Subst	2.00d 23-Apr-22	<u> </u>			1 1	nd remove Medium			tation		1 1		
5.019	Disconnect and remove MV Transformers 12 KV @ Substation	0.20d 27-Apr-22	· ·	11		: :	nd remove MV Trans							
5.020	Disconnect and remove my mansionners 12 kV @ Substation Disconnect and remove cable connection between Copco#2 sub and HE pl	1 .60d 27-Apr-22		11		ن ناسبتم ۱	and remove cable co		1 1 1 1	olant @ Substat	ion			
5.021	Remove all associated auxiliary equipment @ Substation (Allowance)	2.00d 29-Apr-22		11			associated auxiliary e							
5.022	Demolish overhead transmission line and structure 69 KV Copco#1 to Iron	40.00d 03-May-22		 	····		overhead transmiss			Iron Gate				
5.023	Demolish transmission conductor from existing structure pole. Structures	1.60d 02-Jul-22	06-Jul-22	11 I			n transmission condu			ures remain				
5.024	Remove structures between pole 2/007 and Iron Gate	2.40d 06-Jul-22	09-Jul-22			Remove	structures between	pole 2/007 and Iron 0	ate			1 1		
Remaining Lev	el of Effort ☐ Remaining Work ▼ Summary				Page 9 of 13	•							A T	
Actual Level of	,				. age 5 01 15								Al	ECOM
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◆◆ Milestone

Klamath River Renev	wal Project 2019										02	-July-19
Activity ID	Activity Name	Original Start Duration	Finish	2020 2021 Q2 Q3 Q4 Q1 Q2 Q3 Q4	2022 Q1 Q2 Q3 Q4	2023 Q1 Q2 Q3 Q4	2024 Q1 Q2 Q3 Q4	2025 Q1 Q2 Q3 Q4	2026 Q1 Q2 Q3 Q	2027 4 Q1 Q2 Q3 Q4	2028 4 Q1 Q2 Q3	2029 Q4 Q1 Q2
Iron Gate	Dam	356.13d 22-Jul-21	02-Dec-22	▼		2-Dec-21, Iron Gal					1 2 2 2	
	on and Demobilization	5.00d 22-Jul-21	29-Jul-21	₩ 29-J ų l-	20, Mobilization and D	emobilization						
1010	Mobilization At Iron Gate	5.00d 22-Jul-21	29-Jul-21	L <mark>⇒</mark> ∏ Mobiliz	zation At Iron Gate			{				
Diversion 1	Tunnel Modification	310.75d 22-Jul-21	30-Sep-22			ep-21, Diversion T						
4.001	Furnish, Install, and Remove Barge-Mounted Crane in Reservoir	8.00d 22-Jul-21	03-Aug-21		h, Install, and Remove		ane in Reservoir					
4.195	Install Blind Flange On D/S Side	1.00d 29-Jul-21	30-Jul-21		Blind Flange On D/S S							
4.004	Remove Reinforced Concrete Stoplog Structure	1.00d 30-Jul-21	31-Jul-21		ve Reinforced Concrete							
4.013.1	Installation of Roller Gate and Gate Structure	40.00d 31-Jul-21	29-Sep-21	→ Ins	dallation of Roller Gate crete Lining Installation h: Install, and Remove	and Gate Structur	e	1				
4.185	Concrete Lining Installation for Diversion Tunnel	20.00d 31-Jul-21	31-Aug-21	├ □ Coha	crete Lining Installation	for Diversion Tunr	el					
4.002	Furnish, Install, and Remove Temporary Air Vent Hose from Barge to Dive	1.00d 03-Aug-21	04-Aug-21		10.4 (1.10) / 3 (1.10)	- 1 1 1 1 1 1 1 1 1 1			ke Structure			
4.003	Remove Reinforced Concrete Ring Located D/S of Closure Gate and U/S fo	4.00d 29-Sep-21	05-Oct-21		move Reinforced Conc		D/S of Closure Gate a	ind U/S for Flap Gate				
4.011	Remove 9' dia. hinged blind flange	2.00d 29-Sep-21	01-Oct-21		move 9' dia. hinged bli							
4.013.2	Remove Existing Sluice Gate and Grating by divers	3.70d 29-Sep-21	05-Oct-21		move Existing Sluice (
4.020	Remove Concrete Closure Gates in Gate Tower	2.10d 05-Oct-21	07-Oct-21	l l Re	move Concrete Closur	e Gates in Gate To	wer					
4.016	Remove Concrete in Diversion Tunnel Gate Tower	3.30d 24-Sep-22	30-Sep-22				version Tunnel Gate T	ower				
Iron Gate I	Draw Down	60.00d 01-Jan-22			02-Mar-21, Iron (
A1220	Iron Gate Reservoir Draw Down (Diversion Tunnel)	60.00d 01-Jan-22	02-Mar-22		Iron Gate Reserv	oir Draw Down (Di	version Tunnel)					
1140	Iron Gate Power Plant Shut Down	0.00d 01-Jan-22	:		Iron Gate Power Pla							
Dam Demo		153.63d 03-May-22	02-Dec-22			2-Dec-21, Dam De						
4.035	Remove and Dispose of Outlet Works Stop Logs	1.00d 03-May-22	* 03-May-22			Dispose of Outlet						
4.028	Remove and Dispose of Trash Sluice Gate - 10 ft x 9 ft H	1.00d 04-May-22					Sluice Gate - 10 ft x 9	ft H				
4.029	Remove and Dispose of Intake Structure	3.60d 05-May-22	06-May-22			Dispose of Intake						
4.017	Remove Steel Footbridge to Gate Tower	1.04d 10-May-22	11-May-22			el Footbridge to Ga						
4.018	Remove Concrete in Diversion Tunnel Footbridge Abutment	0.60d 11-May-22	11-May-22		Remove Con	crete in Diversion	Tunnel Footbridge Abu	Itment				
4.026	Sheetpile Crest Raise Demolition	8.00d 11-May-22	24-May-22	1	6 1 1 6 17 1 b 2 1	est Raise Demoliti						
4.025	Earth Fill Crest Raise Demolition	4.70d 01-Jun-22		1	Fill C	rest Raise Demolit	ion					
4.014	Remove Concrete in Observation Platform, Crest Wall and Wall Extension	5.20d 15-Jun-22	23-Jun-22	11 : : : ! ! ! ! ! ! !			ation Platform, Crest V		on			
4.021	Remove Upstream Riprap (10' thick upstream side of Dam)	7.20d 15-Jun-22	25-Jun-22				0 thick upstream side	of Dam)				
4.022	Remove Downstream Riprap	1.80d 15-Jun-22	18-Jun-22	1	Remove D	ownstream Riprap ineous Excavation						
4.023	Miscellaneous Excavation (Dam Fill to Spillway) to El 2322	33.80d 15-Jun-22	05-Aug-22	1			(Dam Fill to Spillway)					
4.023.1	Miscellaneous Excavation (Dam Fill to Disposal Site)	59.50d 05-Aug-22	21-Sep-22				on (Dam Fill to Dispos	al Site)				
4.024	Cutoff Wall Concrete Demolition	13.00d 13-Sep-22		11 : : : ! ! ! ! ! ! !		ff Wall Concrete D						
4.015	Remove Concrete in Diversion Tunnel Intake Structure	4.80d 24-Sep-22			F i Rem	ove Concrete in Di	version Tunnel Intake	Structure				
4.013.3	Remove new diversion gate structure	3.00d 24-Sep-22	29-Sep-22		L <mark>⊸</mark> j Rem	ove new diversion	gate structure					
4.116	Berm Removal	4.10d 29-Sep-22	05-Oct-22]	9 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	n Removal						
4.010.1	Breach Coffer Dam Upstream and Downstream	2.00d 05-Oct-22	07-Oct-22		b Brea	ich Coffer Dam Up	stream and Downstrea	m				
4.010	Upstream Cofferdam to be Removed in the Wet	4.40d 07-Oct-22	13-Oct-22	1	— Ups	tream Cofferdam t	be Removed in the \	Vet				
4.019	Place Concrete Plugs for Diversion Tunnel	28.70d 14-Oct-22	02-Dec-22		-	Place Concrete Plu	gs for Diversion Tunne	į				
Fish Facili	ty Demolition	60.44d 04-Jan-22	19-Apr-22		19-Apr-21, Fis		oh					
4.103	Remove Concrete in Fish Ladder	8.30d 04-Jan-22	18-Jan-22		Remove Concrete i							
4.104	Remove Concrete in Holding Ponds #1 thru #6	9.20d 18-Jan-22	03-Feb-22]	Remove Concrete							
4.105	Remove Concrete in Fish Facility Items	8.00d 03-Feb-22			Remove Corcrete			<u> </u>				
4.106	Remove Miscellaneous Metalwork in Fish Facilities	0.20d 18-Feb-22			6446 C	neous Metalwork ii	n Fish Facilities					
4.114	Remove Toe Drain Pipe	0.92d 18-Feb-22	19-Feb-22		Remove Toe Drain							
4.115	Remove Toe Drain Manhole	1.00d 19-Feb-22			Remove Toe Drai	1 1 1 1						
4.117	Remove and Dispose of Intake Structures Trashracks	1.00d 22-Feb-22					ctures Trashracks	FI-:-1000I				
4.118	Remove and Dispose of Pipe Conduit, 30" Dia. x 0.25" Thick x 960'	15.30d 24-Feb-22		 			duit, 30" Dia. x 0 25"]	NICK X 960				
4.119	Remove and Dispose of Sluice Gate Valve, 30" Dia.	1.00d 22-Mar-22				spose of Sluice Ga		160×45'				
4.120	Remove and Dispose of Sluice Gate Stem, 2" Dia. Sch160x45'	1.00d 23-Mar-22					nte Stem, 2" Dia. Sch	10UX40				
4.121	Remove and Dispose of Butterfly Valve, 30" Dia.	1.00d 24-Mar-22			10 1 Amount 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	spose of Butterfly	1 1 1	, none v 00'				
4.122	Remove and Dispose of Piping- 30-in. Dia. x 0.25 Thickness x 90'	0.80d 25-Mar-22					0-in. Dia. x 0.25 Thick 24-in. Dia. x 0.25 Thick					
4.123	Remove and Dispose of Piping- 24-in. Dia. x 0.25 Thickness x 248'	1.70d 26-Mar-22		 - - - - - - - - - -			24-in. Dia. x 0.25 Thick 20-in. Dia. x 0.25 Thick					
4.124	Remove and Dispose of Piping- 20-in. Dia. x 0.25 Thickness x 85'	0.50d 30-Mar-22					20-in. Dia. x 0.25 Thici 18-in. Dia. x 0.25 Thic					
4.125	Remove and Dispose of Piping- 18-in. Dia. x 0.25 Thickness x 432'	2.10d 30-Mar-22					16-in. Dia. x 0.25 Thic					
4.126	Remove and Dispose of Piping- 16-in. Dia. x 0.25 Thickness x 166'	0.70d 05-Apr-22					16-in. Dia. x 0.25 Thic 12-in. Dia. x 0.25 Thic					
4.127	Remove and Dispose of Piping- 12-in. Dia. x 0.25 Thickness x 64'	0.18d 05-Apr-22					12-in. Dia. x 0.25 Thic 10-in. Dia. x 0.25 Thic					
4.128	Remove and Dispose of Piping- 10-in. Dia. x 0.25 Thickness x 69'	0.20d 05-Apr-22	00-Apr-22		i Cillove and D	iopooc oi i ibilig	10 III. Dia. N 0.20 TIIIO	11000 X 001				
Remaining Lev	vel of Effort ☐ Remaining Work ▼ Summary			Page 10 of 13								
Actual Level o				i age 10 01 13							AJ	ECOM
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◆◆ Milestone

Klamath River Renev	val Project 2019					02-Julyr-19
Activity ID	Activity Name	Original Start	Finish	2020 2021	2022 2023 2024 2025 2026 2027	2028 2029
ACTIVITY ID	Activity Name	Duration	FILIISII		4 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1	
4.129	Remove and Dispose of Piping- 8-in. Dia. x 0.25 Thickness x 30'	0.20d 06-Apr-22	06-Apr-22		Remove and Dispose of Piping- 8-in. Dia. x 0.25 Thickness x 30'	Г
4.130	Remove and Dispose of Piping- 3-in. Dia. x STD x 30'	0.05d 06-Apr-22		1	Remove and Dispose of Piping- 3-in. Dia. x STD x 30'	
4.131	Remove and Dispose of Gate Valves	1.58d 06-Apr-22	<u> </u>	4	Remove and Dispose of Gate Valves Remove and Dispose of Basin #1	
4.132	Remove and Dispose of Basin #1	0.20d 07-Apr-22		4	Remove and Dispose of Basin #1	
4.133	Remove and Dispose of Basin #2	0.30d 09-Apr-22	-		Remove and Dispose of Basin #2	
4.134 4.135	Remove and Dispose of Basin #3 Remove and Dispose of Basin #4	0.80d 09-Apr-22 0.80d 12-Apr-22	<u> </u>		Remove and Dispose of Basin #4	
4.136	Remove and Dispose of Basin #4 Remove and Dispose of Basin #5	0.80d 12-Apr-22	<u> </u>	11	Remove and Dispose of Basin #5	
4.137	Remove and Dispose of Basin #6	0.80d 13-Apr-22		11	Remove and Dispose of Basin #6	
4.138	Remove and Dispose of Holding Tank		<u> </u>	11	Remove and Dispose of Holding Tank	
4.139	Remove and Dispose of Misc.: Motors, control panels, cables, conduit	1.00d 16-Apr-22		 	Remove and Dispose of Misc.: Motors, control panels, cables, conduit	
Misc Build	ing Demolition	2.06d 19-Apr-22			▼ 21-Apr-2 , M sc Building Demolition	
4.113	Remove Storage Shed near Aerator Structure	0.08d 19-Apr-22	19-Apr-22		Remove Storage Shed near Aerator Structure	
4.101	Remove Building No. 2	0.71d 19-Apr-22	20-Apr-22		Remove Building No. 2	
4.102	Remove Building No. 3	0.97d 20-Apr-22			Remove Building No. 3	
4.112	Remove Restroom Building near Aerator Structure	0.30d 21-Apr-22		<u>. </u>	Remove Restroom Building hear Aerator Structure	
Penstock I		62.50d 15-Jun-22		<mark>-</mark>		
4.071	Remove Concrete in Penstock Intake Structure	3.10d 15-Jun-22		-	Remove Concrete in Perstock Intake Structule	
4.072	Remove Concrete in Penstock Encasement	4.70d 18-Jun-22			Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports	
4.073 4.074	Remove Concrete in 3 Penstock Anchors and 7 Penstock Supports Remove Steel Footbridge to Intake Structure	20.70d 24-Jun-22 0.88d 27-Jul-22	27-Jul-22 28-Jul-22	 	Remove Steel Footbridge to Intake Structure	
4.074	Remove Concrete in Intake Structure Footbridge Abutment	0.10d 28-Jul-22	28-Jul-22		Remove Concrete in Intake Structure Footbridge Abutment	
4.076	Remove and Dispose of Intake Structure	4.20d 28-Jul-22	03-Aug-22		Remove and Dispose of Intake Structure	
4.077	Remove and Dispose of Gate Hoist Stem - 6" Sch160x40'	1.00d 03-Aug-22		11	Remove and Dispose of Gate Hoist Stem -6" Sch160x40'	
4.034	Remove and Dispose of Air Vent Pipe - 12" Dia. Sch 40 x560'	2.00d 04-Aug-22		11	Remove and Dispose of Air Vent Pipe - 12" Dia. Sch 40 x560'	
4.032	Remove and Dispose of Air Vent Pipe - 8" Dia. Sch 40 x160'	1.00d 06-Aug-22			Remove and Dispose of Air Vent Pipe - 8" Dia. Sch 40 x160'	
4.078	Remove and Dispose of Water Fill line- 12" Dia STD x 27'	1.00d 09-Aug-22		1	Remove and Dispose of Water Fill line- 12" Dia STD x 27'	
4.079	Remove and Dispose of Air Vent - 12" Dia STD x 32'	1.00d 10-Aug-22		11	Remove and Dispose of Air Vent - 12" Dia STD x 32"	
4.080	Remove and Dispose of Gage Wells	1.00d 11-Aug-22		11	Fermove and Dispose of Gage Wells	
4.081	Remove and Dispose of Penstock Vent - 46" Dia, 0.25" Thick x 60'	0.20d 12-Aug-22	12-Aug-22		Remove and Dispose of Penstock Vent - 46" Dia, 0.25" Thick x 60'	
4.082	Remove and Dispose of Penstock - 12" Dia, 0.25" Thick x 698'	9.70d 12-Aug-22			Remove and Dispose of Penstock - 12" Dia, 0.25" Thick x 698	
4.083	Remove and Dispose of Bypass Outlet - 96" Dia, 0.25" Thick x 50'	0.30d 27-Aug-22		_	Remove and Dispose of Bypass Outlet - 96" Dia, 0.25" Thick x 50'	
4.084	Remove and Dispose of Outlet Valve on bypass outlet - 66" Dia.	1.60d 27-Aug-22			Remove and Dispose of Outlet Valve on bypass outlet - 66" Dia.	
4.085	Remove and Dispose Overhead trolley Crane Motor (4hp est) & Controls	1.00d 31-Aug-22		-	Remove and Dispose Overhead trolley Crane Motor (4hp est) & Controls	
4.086	Remove and Dispose Distribution equipment, Junction Boxes	1.00d 01-Sep-22		- 	िम् तिemove and Dispose Distribution equipment, Junction Boxes -	
4.087	Remove and Dispose Power Cable and Conduit	2.00d 02-Sep-22		41	Remove and Dispose Power Cable and Conduit Remove and Dispose of Power Cable and 4" Conduit from Penstock Structure	
4.038	Remove and Dispose of Power Cable and 4" Conduit from Penstock Struc	2.00d 07-Sep-22		<mark>. </mark>	■ 14-Jan-21, Pipe Demolition	
Pipe Demo 4.012	Remove 18" plug valve and 7' of 18" drainage pipe	6.24d 04-Jan-22 0.80d 04-Jan-22		<mark>- </mark>	Remove 18" plug valve and 7' of 18" drainage pipe	
4.012	Remove and Dispose of Exposed Piping Around the Plant	0.80d 04-Jan-22				
4.049	Remove and Dispose of Exposed Piping Around the Plant Remove and Dispose of Unwatering Piping	0.80d 04-Jan-22		 	➡ Remove and Dispose of Exposed Piping Around the Plant ➡ Remove and Dispose of Unwatering Piping ➡ Remove and Dispose of Drainage Piping	······································
4.051	Remove and Dispose of Orlivatering Fighting Remove and Dispose of Drainage Piping	0.40d 06-Jan-22		1	Remove and Dispose of Drainage Piping	
4.107	Remove Concrete Associated with 30" Dia. water supply line	0.40d 06-Jan-22		11	Remove Concrete Associated with 30" Dia. water supply line	
4.108	Remove Concrete in Aerator Structure	1.04d 08-Jan-22			Remove Concrete n Aerator Structure	
4.109	Remove Wood in Aerator Structure	1.00d 11-Jan-22			Remove Wood in Aerator Structure	
4.110	Remove Structural Steel in Aerator Structure	1.00d 12-Jan-22	14-Jan-22		Remove Structural Steel in Aerator Structure	
Power Hou	ise Demolition	196.38d 04-Jan-22		<mark> </mark>	05-Oct-21, Power House Demolition	
4.047	Remove and Dispose of Oil Sump Pumps	0.10d 04-Jan-22			Remove and Dispose of Oil Sump Pumps	
4.048	Remove and Dispose of Pumps	0.90d 04-Jan-22			Remove and Dispose of Pumps	
4.036	Remove and Dispose of Hydraulic Pump Motor (10 HP est) & control panel	1.00d 05-Jan-22			Remove and Dispose of Hydraulic Pump Motor (10 HP est) & control panel	
4.044	Remove and Dispose of Bearing Oil System and Cooling Water System	0.40d 06-Jan-22			Remove and Dispose of Bearing Oil System and Cooling Water System Remove and Dispose of CO2 Systems	
4.045	Remove and Dispose of CO2 Systems	0.10d 06-Jan-22			Remove and Dispose of CO2 Systems Remove and Dispose of Plant Water and Fire Protection System	
4.046	Remove and Dispose of Plant Water and Fire Protection System	0.40d 06-Jan-22			Remove and Dispose of Governor	
4.043 4.037	Remove and Dispose of Governor Remove and Dispose of Distribution Equipment, Junction Boxes	0.80d 06-Jan-22 1.00d 08-Jan-22			Hil. Remove and Dispose of Distribution Equipment, Junction Boxes	
4.037	Remove and Dispose of Crane	1.00d 08-Jan-22			₩i. Remove and Dispose of Crane	·
4.007	Tailrace Coffer Dam- Furnish & Unload Material	4.00d 11-Jan-22			Tailrace Coffer Dam- Furnish & Unload Material	
4.007.1	Tailrace Coffer Dam- Drive Pile	11.20d 15-Jun-22		1	→ Tailrace Coffer Dam- Drive Pile	
Remaining Lev				D 44 . 640		:
Actual Level of	Feffort Critical Remaining Work			Page 11 of 13		AECOM

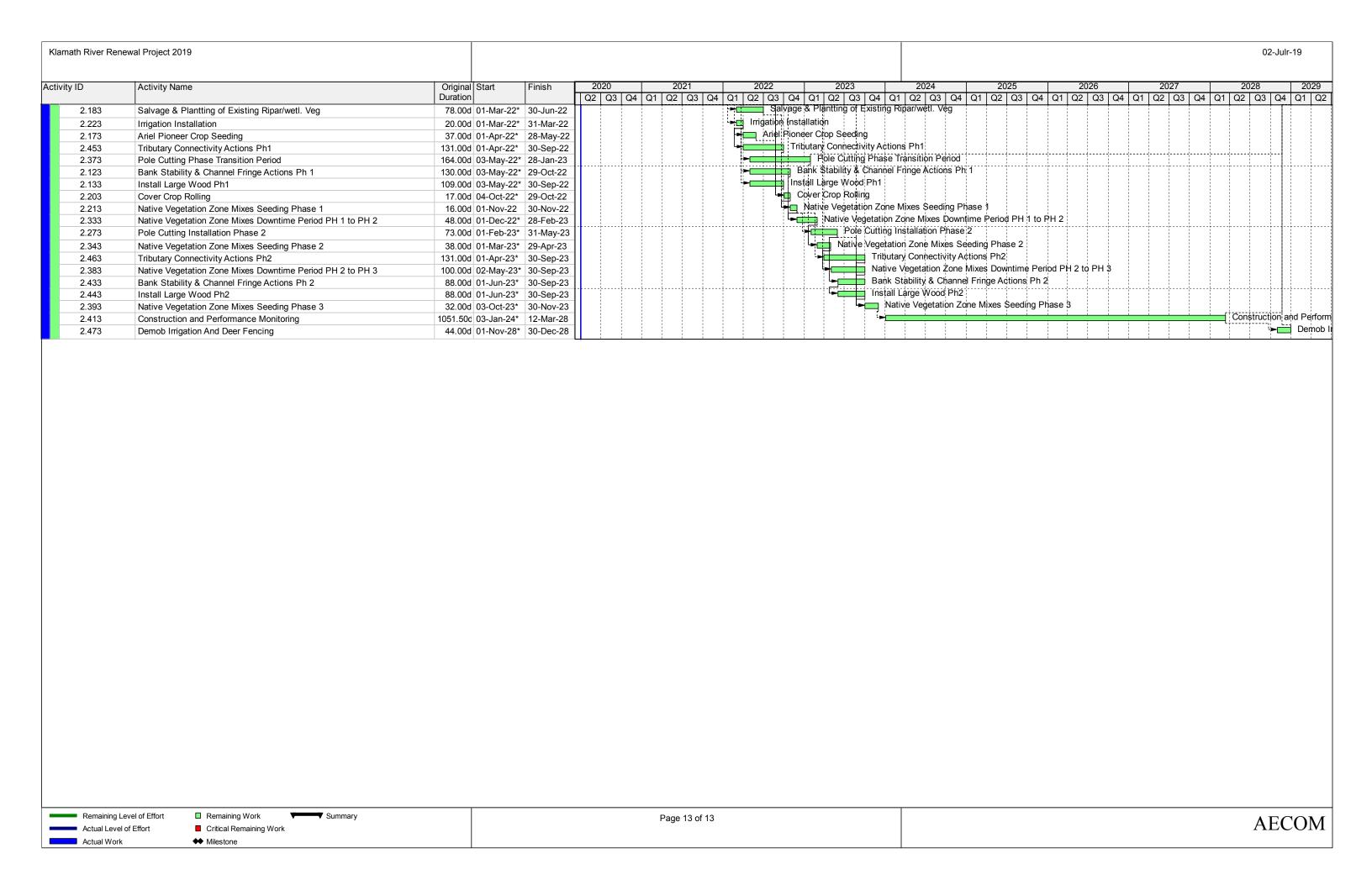
Actual Level of Effort

Actual Work

Critical Remaining Work

◆◆ Milestone

ID	Activity Name	Original Start	Finish	2020 2021 2022 2023 2024 2025 2026 2027 2028 :
iD	Activity Name	Duration	1 1111311	Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1
4.005	Remove Water from behind Tailrace Cofferdam	1.60d 30-Jun-22	01-Jul-22	Remove Water from behind Tailrace Cofferdam
4.006	Provide Dewatering behind Tailrace Cofferdam for removal of Powerhouse	25.00d 01-Jul-22	26-Jul-22	Provide Dewatering behind Tailrace Cofferdam for removal of Powerhouse in the dry
4.040	Remove and Dispose of Turbine Unit	12.30d 27-Jul-22	12-Aug-22	Fig. Remove and Dispose of Turbine Unit
4.039	Remove Powerhouse Concrete down to spring-line of turbine	27.40d 12-Aug-22		Remove Powerhouse Concrete down to spring-line of turbine
4.111	Remove Asphalt Pavement	2.50d 23-Sep-22	- ·	Remove Asphalt Pavement Remove and Dispose of Hoist Stem - 6" Dia. Sch 160' x150'
4.031	Remove and Dispose of Hoist Stem - 6" Dia. Sch 160' x150'	0.50d 29-Sep-22		Remove and Dispose of Draft Tube Bulkheads
4.041	Remove and Dispose of Draft Tube Bulkheads	0.70d 29-Sep-22	· · · · · ·	Tailrace Coffer Dam-Extract Pile
4.007.2	Tailrace Coffer Dam-Extract Pile t Demolition	3.00d 30-Sep-22 27.76d 04-Jan-22	05-Oct-22 22-Feb-22	22-Feb-21, Power Plant Demolition
4.052	Remove and Dispose of Transformer Oil and Fire Protection Pipes	0.40d 04-Jan-22		Remove and Dispose of Transformer Oil and Fire Protection Pipes
4.053	Remove and Dispose of Compressed Air System	0.40d 04-Jan-22	04-Jan-22	Remove and Dispose of Compressed Air System
4.053a	Remove & Dispose - Petroleum Products from Mechanical Equip.	0.20d 04-Jan-22	04-Jan-22	Remove & Dispose - Petroleum Products from Mechanical Equip.
4.054	Remove and Dispose of AC Generator, Outdoor Horizontal	5.00d 04-Jan-22	12-Jan-22	Remove and Dispose of AC Generator, Outdoor Horizontal
4.055	Remove and Dispose of Excitation equipment for 18.975 MVA Generator	0.80d 12-Jan-22	14-Jan-22	Remove and Dispose of Excitation equipment for 18.975 MVA Generator
4.056	Remove and Dispose of Surge protection equip. for 18.975 MVA Generator	0.40d 14-Jan-22	14-Jan-22	Remove and Dispose of Surge protection equip. for 18.975 MVA Generator
4.057	Remove and Dispose of Neutral grounding equip. for 18.975 MVA Generati	0.80d 14-Jan-22	15-Jan-22	Remove and Dispose of Neutral grounding equip. for 18.975 MVA Generator
4.058	Remove and Dispose of Station Service Switchgear, 600 volt - (5 sections)	0.80d 15-Jan-22	18-Jan-22	Remove and Dispose of Station Service Switchgear, 600 volt - (5 sections)
4.059	Remove and Dispose of Unit and plant control switchboard	4.00d 18-Jan-22	26-Jan-22	Remove and Dispose of Unit and plant control switchboard
4.060	Remove and Dispose of Battery System - assume 60 batteries, charger	2.40d 26-Jan-22	29-Jan-22	Remove and Dispose of Battery System - assume 60 batteries, charger
4.061	Remove and Dispose of Raceways, Bus, Conduit and Cable	4.00d 29-Jan-22	04-Feb-22	Remove and Dispose of Raceways, Bus, Conduit and Cable
4.062	Remove and Dispose of Unit and plant control switchboard	1.20d 04-Feb-22	09-Feb-22	िम् हिemoye and Dispose of Unit and plant control switchboard
4.063	Remove and Dispose of Unit and plant control switchboard	1.20d 09-Feb-22	10-Feb-22	Remove and Dispose of Unit and plant control switchboard
4.064	Remove and Dispose of Unit and plant control switchboard	0.50d 10-Feb-22	10-Feb-22	Remove and Dispose of Unit and plant control switchboard
4.065	Remove and Dispose of Vertical Motors, outdoor, (480V, 100 HP est.)	1.00d 10-Feb-22	12-Feb-22	Remove and Dispose of Vertical Motors, outdoor, (480V, 100 HP est.)
4.066	Remove and Dispose of Transformer (3 phase, 300 kVA, 6600/480V est.)	0.80d 12-Feb-22	15-Feb-22	Remove and Dispose of Transformer (3 phase, 300 kVA, 6600/480V est.)
4.067	Remove and Dispose of Step-up Transformer, outdoor, oil-filled, 3-phase,	1.00d 15-Feb-22	16-Feb-22	Remove and Dispose of Step-up Transformer, outdoor, oil-filled, 3-phase, 18.947 kVA, 6.600/69.000 volt
4.068	Remove and Dispose of Lattice steel structure, with 69-kV disconnect swit	0.80d 16-Feb-22	18-Feb-22	Remove and Dispose of Lattice steel structure, with 69-kV disconnect switches and insulators
4.069	Remove and Dispose of Generator Switchgear, outdoor, 7.2kV includes un	1.60d 18-Feb-22	19-Feb-22	Remove and Dispose of Generator Switchgear, outdoor, 7.2kV includes unit breaker (5 sections)
4.070	Remove and Dispose of Single Phase Pole Transformers (25 kVA est.)	0.80d 19-Feb-22	22-Feb-22	Remove and Dispose of Single Phase Pole Transformers (25 kVA est.)
Transmissio	on Line Demolition	15.00d 22-Feb-22	15-Mar-22	15-Mar-21, Transmission Line Demolition
5.025	Remove Distribution Poles near Iron Gate Hydro Plant	1.60d 22-Feb-22	25-Feb-22	Remove Distribution Poles near Iron Gate Hydro Plant
5.026	Remove 69kV/6.6kV Transformer @Substation	0.30d 22-Feb-22	24-Feb-22	Remove 69kV/6 6kV Transformer @Substation
5.027	Remove 6.6kV Power Circuit Breaker @Substation	0.80d 22-Feb-22	24-Feb-22	Remove 6.6 V Power Circuit Breaker @Substation
5.028	Remove Generator @Substation	3.20d 22-Feb-22	26-Feb-22	Remove Generator @Substation
5.029	Remove all auxiliary equipment @Substation (Allowance)	3.00d 22-Feb-22		Remove all auxiliary equipment @Substation (Allowance)
5.030	New Connection @Iron Gate Hatchery from PacifiCorp's Hornbrook Substa	10.00d 22-Feb-22	01-Mar-22	New Connection @Iron Gate Hatchery from PacifiCorp's Hornbrook Substation (Allowance)
5.036	Removal Of Residence Building (Spillway Bank)	10.00d 01-Mar-22	15-Mar-22	Fo Removal O Residence Building (Spillway Bank)
Post Decor	struction Pavement Improvements	50.38d 06-Dec-22	14-Feb-23	14-Feb-22, Post Deconstruction Pavement Improvements
45 - 1410	Lakeview Disposal Access Road (.7miles 6" AB Overlay)	3.00d 06-Dec-22	10-Dec-22	Lakeview Disposal Access Road (.7miles 6" AB Overlay)
45 - 1420	Copco Rd From Copco 1 Access to Copco Bridge (1 mile 9" AB & .2 Mile	2.40d 10-Dec-22	14-Dec-22	Copco Rd From Copco 1 Access to Copco Bridge (1 mile 9" AB & 2 Mile Overlay)
45 - 1430	Topsy Grade Rd (.9mile 9" AB repair)	3.00d 14-Dec-22	20-Dec-22	Topsy Grade Rd (.9mile 9" AB repair)
45 - 1440	JC Boyle Dam Access Road (0.6 mile 9" AB repair)	2.40d 20-Dec-22	23-Dec-22	JC Boyle Dam Access Road (0.6 mile 9" AB repair)
45 - 1450	JC Boyle Power Canal Access Road (1.5 mile 9" AB repair)	2.40d 28-Dec-22	30-Dec-22	JC Boyle Power Canal Access Road (1.5 mile 9" AB repair)
45 - 1460	Copco Rd Ager Rd to Lakeview Rd (1 miles new asphalt overlay)	3.00d 30-Dec-22		Copco Rd Ager Rd to Lakeview Rd (1 miles new asphalt overlay)
45 - 1470	Copco Rd to Lakeview Rd to Dagget Rd (2 miles new asphalt overlay)	3.00d 05-Jan-23	11-Jan-23	Copco Rd to Lakeview Rd to Dagget Rd (2 miles new asphalt overlay)
45 - 1480	Copco Rd Daggett Rd to Copco 1 Access Rd (1.5 mile 9" AB repair)	2.40d 11-Jan-23	14-Jan-23	Copco Rd Daggett Rd to Copco 1 Access Rd (1.5 mile 9" AB repair)
45 - 1490	Paving - Copco Rd I5 to Ager Rd (1 mile new asphalt overlay)	2.40d 14-Jan-23	20-Jan-23	Paving - Copco Rd I5 to Ager Rd (1 mile new asphalt overlay)
A112	Timber Bridge Demolition JC Boyle	12.50d 21-Jan-23	14-Feb-23	Timber Bridge Demolition JC Boyle
Restoration	1	2022.50d 01-Apr-21	31-Dec-28	1
2.103	Seed Collection	370.00d 01-Apr-21	30-Nov-22	Seed Collection
2.113	Seed Propagation	573.00d 01-Apr-21	31-Oct-23	Seed Propagation
2.143	Pilot Growing Test	370.00d 01-Apr-21	30-Nov-22	Pilot Growing Test
2.153	Restoration PS&E Preparation	1.00d 01-Apr-21	01-Apr-21	Restoration PS&E Preparation
2.353	Invasive Exoctic Vegetation Control	1865.00d 01-Apr-21		
2.403	Maintenance	1682.00d 01-Feb-22*		N N
2.193	Pole Cutting Installation Phase 1	55.00d 01-Feb-22*	<u> </u>	Pole Cutting Installation Phase 1
2.423	Riprarian Areas Sediment Removal	154.00d 01-Feb-22*	30-Sep-22	Riprarian Areas Sediment Removal





Attachment D Risk Analysis Methodology

RISK ANALYSIS METHODOLOGY

Risk Analysis Model

For this risk assessment, the AECOM Risk Team identified a "risk set" comprised of cost estimate uncertainties and potential risk events via a risk workshop session and used it to perform quantitative risk analyses. The Risk Team utilized a stochastic risk model for these analyses that employs probabilistic methods to forecast project cost as a function of confidence level. To develop inputs for the risk model, risk workshop participants identified potential risk events and concurrent risk event impacts catalogued as ranges of dollars or days of delay that could result from each risk events.

The AECOM Risk Team constructed this risk model by creating a binomial distribution per risk that either happens (value of 1) or doesn't happen (value of 0) based on predetermined probabilities of occurrence. Both cost and schedule consequences are modeled using a Laplace distribution defined by two points: minimum and maximum.

The project's base cost estimate serves as the first building block of the risk analysis model. In order to turn this static cost estimate into a platform for the model, it is first necessary to capture the uncertainty within the general requirements / conditions line item of the estimate. Once the Risk Team quantifies this uncertainty (by setting a range over which it is expected to exist), it adds risk events identified during the workshop to the model.

Four types of correlations are considered in the risk model. Two of them are applicable to the components of cost exposure and are applied to risk events in the risk register. These two correlations are defined as Pearson Coefficients. They are assigned to risks in pairs and range between negative one (-1) and one (1). A coefficient of 1 represents a perfectly positively correlated pair of risks; a -1 represents a perfectly negatively correlated pair of risks; values between -1 and 1 represent various levels of correlation that allow for imperfections in the relationship between the risks; and zero (0) represents a pair of risks that are uncorrelated.

The first correlation is applied to the occurrence of pairs of risks. A positive correlation between the paired risks implies that if one risk happens in the simulated model the other must happen as well; a negatively correlated pair means that if one risk happens in the simulated model the other may not happen. These cases are important to consider when a model implies that a trigger that could activate another risk without the two risks occurring simultaneously.

A second correlation is applied to relationships between impacts of certain risk pairs that have cost and schedule consequences. A positive correlation between such a pair implies that when the selected risk happens and results in a high cost consequence, a high schedule consequence is also likely to result. Alternatively, a negative correlation between such a pair suggests that a high cost consequence from the selected risk would likely have a low schedule impact. This is a particularly useful model to suggest cases where the project may suffer from either a delay or an additional cost as a consequence of a risk and may thus incur costs to mitigate the delay.

The next two correlations considered in the model are used in the "cost estimate uncertainty" analysis, and affect the cost estimate uncertainty calculations. The first of these correlations is also represented with a Pearson Coefficient and is applied to a pair of cost components that may have a relationship. A positive correlation of this type of cost element implies that when the selected cost uncertainty trends upwards in one cost category, a related cost category may observe upward trends of cost growth as well. For example, if steel prices trend higher than was forecast, steel unit prices will be affected in all areas of the cost estimate where steel is applicable.

Conversely, a negative correlation between such related cost categories means they will trend in opposite directions. These types of correlations are particularly important for modeling the cost uncertainty of commodity prices, labor agreements and market conditions.

The last correlation applied in the cost uncertainty calculations is represented by cost elements that are calculated as a dependent of hard costs or other cost elements, a function typically applied to cost-per-day. For example, the cost of administrative staff is directly correlated to the duration of the project. Such elements in the cost uncertainty calculations have been linked to modeled costs and schedule, meaning that if one component of the project is significantly delayed, the administration cost of the management of the project will inevitably increase. Alternatively, uncorrelated cases fix those cost elements to the project's baseline estimates and so do not vary in value based on the simulation of the project.

Monte Carlo Simulations

Once the Risk Team incorporates variations within the base estimate and potential impacts of external risks into the risk model, a Monte Carlo simulation can be performed. Monte Carlo simulations turn static numbers into ranges by applying causal relationships to variables and using a random number generator to simulate what might happen in reality. They also allow for multi-faceted analysis of the simulation results.

The Risk Team uses a Monte Carlo simulation to forecast project results such as total project cost, potential total cost risk exposure, and other relevant statistics. This risk assessment's Monte Carlo simulation generated thousands of random scenarios of project performance variables related to cost and schedule. Utilizing all data collected, the simulation results in a single file that details wide ranges of cost impacts and schedule impacts.

The statistics generated by the Monte Carlo simulation comprise the quantitative part of this report, visualized as output curves which forecast cost as a function of confidence level. An 80% confidence level is the industry standard for the output of these analyses and is thus the value reported in this analysis. An 80% confidence level is considered a conservative value to compare the current allocations in cost and schedule contingency budgets and determine their appropriateness.

Schedule Modeling and Simulation

The schedule component is modeled in similar fashion to that of cost, and during the Monte Carlo simulation construction durations are modified based on the number of risks that are simulated to occur and their random consequences. Each simulation generates a number of delay days based on the duration of the project, and those are multiplied by a cost-per-day and added to the cost distribution. The distribution of end date for each contract is reported in that range and at the 80% confidence level.



Attachment E Cost Summary Presentation

Definite Plan to July 2019

- Numerous BOC workshops/iterations
- Indicative pricing for Liability Transfer (LTC, Mitigation Fund & Insurance)
- One-year construction delay (with additional year of operations)
- PDB Agreement execution & preliminary services bid
- Actuals ~\$37M (8.5%) through June 2019 (included in numbers below)

Line Hom / Cook Cokersmy			P80 Delta		
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)
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CORPORATION

Definite Plan to July 2019

- Both the P80 and P90 are below the State Cost Cap
- The P99 is only ~\$2M over the State Cost Cap

Line Item / Cost Cotegory		P80 Delta			
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)



Definite Plan to July 2019

Liability Transfer:

- +\$35.5M for LTC (Natural Resources) and Local Impact Mitigation Fund
- +\$7M for added insurance (higher premiums) Within "PDB Contract" total

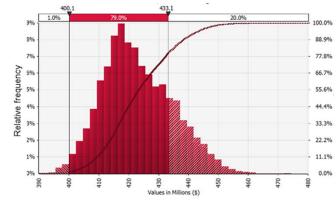
Line Item / Cost Cotegory		P80 Delta			
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000
Liability Transfer		35,530,000	35,530,000	35,530,000	35,530,000
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)



Definite Plan to July 2019

Monte Carlo Risk Contingency P80/90 ~\$63-67M:

- Includes price uncertainty, pre- and post- GMP risks
- Involves construction start delays up to 2 years



Line Item / Cost Cotegory		Estimate of Project Costs (Year of Construction Dollars)							
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)				
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000				
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000				
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)				
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000				
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000				
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000				
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)				
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)				
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000				
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)				
Estimate Uncertainty		9,474,000	10,134,000	10,318,000					
Pre-GMP Contingency	147,441,000	18,208,000	19,435,000	24,020,000					
Post GMP Contingency		35,075,000	37,494,000	47,116,000					
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)				

Definite Plan to July 2019

RES's expertise in compliance and mitigating impacts to natural resource results in significant savings (and includes indemnification)

Monte Carlo Risk Contingency reduced by ~\$85M due to:

- Higher price certainty
- Risks being retired over past year, or probability/impact being refined
- Risks transferred to insurance, LTC or Local Impact Mitigation Fund

Line Item / Cost Cotegory		Estimate of Project Costs (Year of Construction Dollars)							
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)				
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000				
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000				
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)				
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000				
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000				
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000				
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)				
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)				
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000				
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)				
Estimate Uncertainty		9,474,000	10,134,000	10,318,000					
Pre-GMP Contingency	147,441,000	18,208,000	19,435,000	24,020,000					
Post GMP Contingency		35,075,000	37,494,000	47,116,000					
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)				

Definite Plan to July 2019

Contingency:

By early 2020, estimate and design uncertainty will be resolved

Line Item / Cost Cotogony		Estimate of (Year of Consti	Project Costs ruction Dollars)		P80 Delta
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)
Estimate Uncertainty		9,474,000	10,134,000	10,318,000	
Pre-GMP Contingency	147,441,000	18,208,000	19,435,000	24,020,000	
Post GMP Contingency		35,075,000	37,494,000	47,116,000	
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)

Definite Plan to July 2019

Management, Legal & Consulting Services:

 Have increased due to escalation, added year of operations, and additional technical support required for unforeseen conditions, FERC, CEQA & NEPA

Line Item / Cost Category	Estimate of Project Costs (Year of Construction Dollars)				P80 Delta	
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)	
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000	
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000	
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)	
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000	
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000	
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000	
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)	
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)	
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000	
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)	
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)	



Definite Plan to July 2019

Mitigation, Monitoring & Reporting:

 Majority of monitoring and portion of mitigation transferred to LTC and Local Impact Mitigation Fund

Line Item / Cost Cotogony	Estimate of Project Costs (Year of Construction Dollars)				P80 Delta	
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)	
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000	40,718,000	+ 11,137,000	
Liability Transfer	-	35,530,000	35,530,000	35,530,000	35,530,000	
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000	8,097,000	(540,000)	
Technical Support	9,119,000	14,220,000	14,220,000	14,220,000	+ 5,101,000	
Construction Management	10,617,000	13,167,000	13,167,000	13,167,000	+ 2,550,000	
Progressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000	
Mitigation Measures	18,407,000	17,141,000	17,141,000	17,141,000	(1,266,000)	
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000	4,406,000	(13,999,000)	
Subtotal	329,259,000	370,891,000	370,891,000	370,891,000	41,632,000	
Contingency	147,441,000	62,757,000	67,063,000	81,454,000	(84,684,000)	
TOTAL	476,700,000	433,648,000	437,954,000	452,345,000	(43,052,000)	



Definite Plan to July 2019

PDB Contract:

- Design fees increased considerably (+\$15M)
- Specialty insurance increase (+\$7M)
- 1-year of escalation across all line items (+\$9M)
- Refined or new items Yreka, Fire Management, Spawning Gravel (+\$10M)
- Dam removal fees went down due to BOC input (-\$9M)
- Vegetation monitoring, maintenance and reporting to LTC (-\$25M)
- Downstream flood control mitigation to Local Impact Mitigation Fund (-\$1.5M)

Line Item / Cost Category		Estimate of Project Costs (Year of Construction Dollars)				P80 Delta
		Definite Plan (P80)	Full Removal (P80)	Full Removal (P90)	Full Removal (P99)	(Vs. Definite Plan)
Pro	gressive Design-Build Contract	234,493,000	237,612,000	237,612,000	237,612,000	+ 3,119,000
40	Final Design & Permitting Support (PDB)	6,513,000	21,799,000	21,799,000	21,799,000	+ 15,286,000
40	A Project Insurance	-	6,989,000	6,989,000	6,989,000	+ 6,989,000
41	Dam Removals	106,827,000	97,751,000	97,751,000	97,751,000	(9,076,000)
42	Reservoir Area Improvements	21,051,000	21,779,000	21,779,000	21,779,000	+ 728,000
43	Reservoir Area Restoration	57,957,000	32,821,000	32,821,000	32,821,000	(25,136,000)
44	Yreka Water Line Replacement	2,900,000	6,060,000	6,060,000	6,060,000	+ 3,160,000
45	Transportation Improvements	30,799,000	32,717,000	32,717,000	32,717,000	+ 1,918,000
46	Recreation Improvements	4,584,000	6,481,000	6,481,000	6,481,000	+ 1,897,000
47	Downstream Flood Control Improvemen	1,499,000	-	-	-	(1,499,000)
48	Public Health And Safety Fencing	2,363,000	2,665,000	2,665,000	2,665,000	+ 302,000
<mark>W</mark> 49	Fire Management Plan	-	3,006,000	3,006,000	3,006,000	+ 3,006,000
49	A Spawning Gravel Augmentation	-	5,544,000	5,544,000	5,544,000	+ 5,544,000

Full versus Partial Removal

Partial Removal:

Approximately \$18.5M lower for dam removal construction, and nearly \$23M lower overall

Line them / Cook Coke name	Estimate of Project Costs (Year of Construction Dollars)				
Line Item / Cost Category	Definite Plan (P80)	Full Removal (P80)	Partial Removal (P80)		
Project Oversight (non PDB)	29,581,000	40,718,000	40,718,000		
Liability Transfer	-	35,530,000	35,530,000		
Environmental Compliance (KRRC-Managed)	8,637,000	8,097,000	8,097,000		
Technical Support	9,119,000	14,220,000	14,220,000		
Construction Management	10,617,000	13,167,000	13,167,000		
Progressive Design-Build Contract	234,493,000	237,612,000	219,150,000		
Mitigation Measures	18,407,000	17,141,000	17,141,000		
Monitoring & Reporting (KRRC)	18,405,000	4,406,000	4,406,000		
Subtotal	329,259,000	370,891,000	352,429,000		
Contingency	147,441,000	62,757,000	58,621,000		
Estimate Uncertainty		9,474,000	8,687,000		
Pre-GMP Contingency	147,441,000	18,208,000	17,209,000		
Post GMP Contingency		35,075,000	32,725,000		
TOTAL	476,700,000	433,648,000	411,050,000		



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