Hydro Resources, Inc.

CROWNPOINT RESTORATION ACTION PLAN

License No.: SUA-1580

November 19, 2001

(***October 15, 2010 - revisions inserted pursuant to LBP-04-03 and LBP-05-17***)

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November 19, 2001

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CUP PROJECT AND CROWNPOINT SITE COST SUMMARY

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HRI CROWNPOINT URANIUM PROJECT Financial Assurance Plan Project Summary

Category	Project Total	Contingency/ Profit	Totals
Churchrock Section 8	\$8,593,794	\$1,345,278	\$9,939,072
Churchrock Section 17	\$4,686,497	\$709,578	\$5,396,075
Unit 1	\$11,618,016	\$1,792,017	\$13,410,033
Crownpoint	\$16,140,185	\$2,501,941	\$18,642,126
Totals	\$41,038,492	\$5,720,472	\$47,387,306

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CROWNPOINT - RESTORATION ACTION PLAN

A. INTRODUCTION

The following summarizes the Restoration Action Plan for Crownpoint site location (RAP-CP). Shown in Attachment A-1, the estimate puts the costs of restoration by an independent contractor at **\$18,642,126** over a approximately eight year period which is based on the conservative assumption that all reclamation activities are postponed until the end of the mine life with the resulting liabilities accumulated until the end. In practice, within the wellfield, individual wells will be shut down when they cease to be economically productive and when an entire segment of a wellfield has been depleted of uranium, restoration will be initiated simultaneous with production in new segments of the mine. As a result, at the end of the mine life at the Crownpoint location, a substantial proportion of the groundwater restoration cost that had been contemplated in this plan will also have been complete. This progressive restoration is the reason that annual surety reviews are completed pursuant to LC 9.5.

The RAP encompasses the full cycle activities necessary to:

- Restore the groundwater at the Crownpoint site to levels consistent with those described in License¹ Condition 9.3 and the COP².
- Complete a six-month stabilization period during which the chemistry of the groundwater remains constant.
- Complete the plugging and abandonment ("P&A) of all wells.
- Radiological decontamination buildings, process vessels, and other structures, or affected areas.
- Surface reclamation, decommission and obtain release for unrestricted use of the surface and revegetation of restored well fields.

The RAP-CP has been compiled with the absence of actual development in the field that would normally be used as justification for the basic assumptions. The greatest potential for inaccuracy that may result from the absence of real information is in the mine area, where actual drilling will reveal details in the nature of the ore and mine zone. Additionally, there may be other differences in the reclamation costs that will result once "as built" conditions are realized.

The sequence of mining activity and the resulting schedule for production and restoration may also differ from what the RAP-CP budget reflects. Based on HRI's ability to obtain economic uranium sales contracts, production rates may be more or less than what is expected. A change in the development rate would be reflected in the overall groundwater restoration schedule and possibly the sizing of the desired equipment.

¹ The "License" that is referenced throughout this RAP means the U.S. Nuclear Regulatory Commission Materials License SUA-1580.

² The "COP" referenced throughout this RAP means the Crownpoint Uranium Project Consolidated Operations Plan, Revision 2.0, August 15, 1997.

The results of the requisite restoration demonstration described in LC 10.28 and COP 10.4.4 may have a significant effect on groundwater restoration costs. An increase or decrease in demonstrated pore volume requirements will have a proportional effect on groundwater restoration costs.

HRI's submittal presented herein employs assumptions that are based on best professional judgment given the data that is currently available. It is a fact that the detail of the RAP budget model exceeds our ability to predict precise field conditions accurately. Necessarily, the accuracy of the budget assumptions will improve as operations proceed. The annual review required by LC 9.5 would provide the iterative format by which NRC can continually update the surety amount that results from the newly available information.

B. SURITY BOND FORMAT

See the Churchrock Section 8/Crownpoint Process Plant Restoration Action Plan, Nov. 17, 2000, Section B for the Surety Bond format

C. STANDBY TRUST AGREEMENT

See the Churchrock Section 8/Crownpoint Process Plant Restoration Action Plan, Nov. 17, 2000, Section C for the Standby Trust format.

D. CONSOLIDATION OF STATE, EPA AND NRC SURITY INSTRUMENTS

In addition to being crafted to comply with the NRC criteria, HRI's proposed Performance Guarantee Bond is designed to address the New Mexico Environmental Department's (NMED's) restoration and reclamation requirements, and U.S. Environmental Protection Agency (USEPA) Underground Injection Control Criteria. These multi-compliant sureties will require multi-agency concurrence. The Bond examples shown in Appendix A are designed to be consistent with 10 CFR Part 40, Appendix A, Criterion 9 (Financial Criteria) which clearly allows for consolidation of State and Federal financial or surety arrangements established to meet restoration, reclamation, and decommissioning costs provided that "the portion of the surety which covers the decommissioning and reclamation of the mill, mill tailings site and associated areas is clearly identified and committed for use in accomplishing these activities." Absent a mill or tailings, essentially all of the process facility, wellfield, and ancillary components of the operations would be subject to the decommissioning requirements of the State of New Mexico and/or U.S. Environmental Protection Agency and the NRC.



CROWNPOINT URANIUM PROJECT Restoration Action Plan for the Crownpoint Site Cost Summary

Category	Project Total	Contingency/ Profit 15%	Contingency/ Profit 25%
Groundwater Restoration	\$10,890,592	\$1,633,589	
Groundwater Stability Analysis	\$427,160	\$64,074	
Well Plugging	\$3,951,287	\$592,693	
Equipment Removal	\$62,019	\$9,303	
Wellfield D & D	\$419,192		\$104,798
Building D & D	\$98,775		\$24,694
Surface Reclamation	\$291,161		\$72,790
Totals	\$16,140,185	\$2,299,659	\$202,282
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Contingency/Profit			\$2,501,941
Total Surety			\$18,642,126

E. COST DETAILS FOR RESTORATION AND RECLAMATION ACTIVITIES

1. Introduction

RAP-CP contains details concerning cost basis figures and assumptions, calculations and/or methodologies used in deriving cost estimates, references, for the full cycle groundwater restoration, well plugging and abandonment, surface decommissioning and reclamation, closure and ultimate license termination. This information is designed to be descriptive enough for the NRC staff to determine the acceptability of HRI's proposed cost figures, and is based on an independent contractor performing the decommissioning and reclamation work³ in accordance with 10 CFR Part 40, Appendix A, Criterion 9. HRI reviewed Appendix E of the NRC's draft. "Standard Review Plan for In Situ Leach Uranium Extraction License Applications" (NUREG-1 569, dated October 1997), and Section 4 of the NRC's "Technical Position on Financial Assurances for Reclamation, Decommissioning, and Long-Term Surveillance and Control of Uranium Recovery Facilities" (dated October 1988) for examples of acceptable "levels of detail" for cost estimates pertaining to this surety plan.

HRI used two different budget formats to present the closure costs estimates in RAP-CP. Costs for groundwater restoration (2) were estimated over time as an operational budget. Final decommissioning costs including analytical stability, plugging and abandonment, equipment removal, wellfield decommissioning, building decommissioning, and surface reclamation (3-8) were budgeted on a lump sum basis. In both formats HRI developed the cost estimate from the bottom – up using the best available cost estimate or quote for the individual component (s) that were considered. HRI also called on the operation management resources of URI, Inc., the sister company who is the oldest⁴ uranium in situ leaching company in the United States.

³ Costs have been estimated using standard budgetary techniques as would be done by a independent contractor. In addition, HRI has included a subtotal category entitled "contractor profit" that included 15% of the total cost for groundwater restoration, groundwater stability analysis, well plugging and equipment removal and 25% of the total cost for wellfield D & D, building D & D, and surface reclamation.

⁴ URI, Inc. is a wholly owned subsidiary of Uranium Resources, Inc. the parent to HRI, Inc. The firm has been in the business of in situ leach uranium recovery since 1977.

2. Groundwater Restoration

2.1. Introduction

In addition to the regulatory guidance provided by NRC, HRI used historic and ongoing company experience with similar groundwater restoration operations in developing its budget model. Groundwater restoration costs are presented as a monthly restoration budget with cumulative total costs. This is an appropriate budget interval because ongoing operational cost such as labor, electricity, reagents, replacement equipment etc. are paid out of cash on a monthly basis. The duration of the restoration cost expenditure was based on the processing and circulation of 9 pore volumes of groundwater as required by license condition 9.5 surety requirement. Surety will be maintained at this level until the number of pore volumes required to restore the ground water quality of a production scale wellfield has been demonstrated as stated in COP Section 10.4.4.

The COP that was submitted in support of the HRI's License contemplated a number of methods for liquid waste treatment and disposal during ground water restoration. The costs that are presented in this budget assume the most conservative liquid waste treatment and disposal option; reverse osmosis treatment ("RO") and brine concentration ("BC"). It is conservative because it is authorized by the current license (other options would require additional licensing steps) and it is the most costly option. If HRI is to pursue one of the other treatment/disposal options described in the COP Revision 2.0 and it is approved in a future licensing action, then HRI will adjust the surety budget accordingly during the annual update review.

RO and BC will be used to treat water during production operations and be used for groundwater restoration conducted in the pilot demonstration and during concurrent restoration that will be ongoing with production activities. Because the cost of restoration equipment such as wellfield pumps, ponds, the RO unit, the BC unit, laboratory equipment, trucks, and field equipment must be incurred for production process operations, they are assumed to be operational capital and are not included as capital requirements in any of the RAP budget lines. NRC will be able to verify the availability of the restoration equipment during routine inspections.

The budget model described in this RAP used 2,102,609,094 gallons of water to size duration of the restoration program against the projected nominal equipment capacity. Rows 21-42 of the restoration budget is a monthly calculation of water treatment capacity that has been cumulated over the term of restoration and compared with the required nine pore volumes of treated water. It is nominal equipment design capacity that is needed to process the requisite gallonage that justifies the length (and cost) of groundwater restoration operations.

2.2. Reverse Osmosis Equipment Description

Reverse osmosis is a water treatment process whereby the majority of dissolved "ions" are filtered from the wastewater, and concentrated into a smaller concentrated brine volume. The resulting product water typically meets, or exceeds drinking water standards, and during restoration activities, is reinjected back into the wellfield further diluting the underground mining solutions toward baseline quality. For the purpose of this budget model, the concentrated brine stream, representing 20% of the feed volume will be disposed by brine concentration (a form of distillation).

Osmosis is a natural process that occurs in all living cells. With an appropriate semipermeable membrane as a barrier to solutions of differing concentrations, naturally occurring osmotic pressure forces pure water from the dilute solution to pass through the membrane, and dilute the more concentrated solution. This process will continue until equilibrium exists between the two solutions.

Reverse osmosis (R.O.) is a reversal of the natural osmotic process. By confining a concentrated solution against a semi permeable membrane, and applying a reverse pressure on the concentrate greater than the naturally occurring osmotic pressure, water will move across the membrane ("product water"), and out of the original concentrate, resulting in an even more concentrated solution ("brine"). The membrane rejects the passage of the majority of the dissolved solids while permitting the passage of water.

Post-mining solutions from a depleted mine area will be treated with an anti-scalent which is the only chemical pretreatment budgeted. The solution may next be bulk-filtered across sand filters to remove all solids greater than 30 microns. Cartridge filters will then filter out the remaining solids greater than 1 micron. The solution at this point is ready for the reverse osmosis process. To achieve reverse osmotic purification, the pretreated and filtered solution is pressurized and directed to the first step of a two-stage reverse osmosis process. Approximately 60 percent of the total feed volume will be converted to product or purified water in the first stage. The brine water of the first stage will then act as the feed for the second stage, which yields an overall product or purified to brine ratio of 4:1. The brine generated will be further treated and reduced by brine concentration.

The RO unit was sized to operate at a nominal⁵ capacity of 580 gallons per minute. This design rate has been utilized by URI at similar ISL facilities with excellent results. Additionally, the sizing is optimal because it will allow concurrent restoration to proceed at approximately the same rate production wellfields are depleted. (I.e. with mining and restoration going on concurrently restoration and mining will proceed at similar rates).

RO treatment operating and maintenance costs are included within the O & M budget in Attachment E-2-1.

2.3. Brine Concentrator Equipment Description

A brine concentrator will be used for final reduction of liquid waste. The RO reject stream will be treated with a vertical tube, falling film vapor compressor evaporator followed by a

⁵ RAP-U1's nominal capacity is an estimate. HRI will deal with capacity variances that result from equipment efficiency or downtime by increasing or decreasing the equipment size and possibly adjusting surge capacity. For example, if actual operating results indicate that R.O. equipment downtime is 5% then increasing the equipment design capacity from 580 gpm to 610 gpm would allow the average throughput to remain the same. At this stage it is impossible for HRI to anticipate and adjust for every operational variable that may arise in the future.

steam driven rotary drum dryer to achieve zero liquid discharge (dry solids). The solids will be bulk stored and shipped to an 11.e.2-byproduct facility for disposal.

Brine concentration is a process that can process a waste stream into deionized water and solid shurry. Electrical utilities in the Four Corners area, and paper, and pulp companies have employed this technology for decades to handle their waste streams. The principle behind the process is based on the ideal Carnot cycle where an initial fixed volume of concentrated brine is heated to boiling temperature. The steam vapor created is mechanically compressed; resulting in a secondary steam vapor whose temperature is elevated (15-20 degrees) by the work energy used during compression. Distilled water is condensed from the secondary steam vapor onto internal heat exchangers. The heat loss during condensation is transferred to the circulating brine on the opposite side of the heat exchanger. The brine's temperature is raised, maintaining the internal boiling environment. This source of heat sustains the creation of primary steam used to feed the compressor. The cycle is continuous so long as energy is added at the compressor stage. The electrical power used in compressing, and elevating the temperature of the primary steam vapor produces distilled product water. The resultant hyper-concentrated brine allows solid precipitate in the form of common salts as determined by the solution's limits for solubility. Typically, for each 100 gallons of waste brine treated, 98 gallons of distilled water and 2 gallon of shurry solids are formed.

The BC was sized to accommodate the anticipated brine that the RO will produce.

BC costs are included within the O & M budget in Attachment E-2-1.

2.4. Pore Volumes and Flair

Restoration equipment capacity design coupled with timing of the restoration operations budgeted herein is a function of the quantity of water that will be processed during restoration that is calculated in this RAP by using the pore volume unit of measure. The term "pore volume" (PV) is a term of convenience that has been conceived by the ISL industry to describe the quantity of free water in the pores of a given volume of rock. The units are provided in gallons. PV's provides a unit of reference that a miner can use to describe the amount of circulation that is needed to leach an ore body, or describe the times water must be flowed through a quantity of depleted ore to achieve restoration. PV's provide a way that a miner can take small-scale studies, such as studies in the laboratory, and scale these studies up to field level or to compare pilot scale studies⁶ to commercial scale. Hence they provide a miner with an important technique for calculating ISL project economics and restoration costs.

PV's are calculated by determining the three dimensional volume of the rock (that is also the ore zone) and multiplying this number by the percent porosity. HRI used the "ore area" method to determine pore volumes⁷, where the extent of ore of given grade within a mine unit is

⁶ I.e. such as the Section 9 Pilot. See FEIS p. 4-37.

⁷ Different operators have used different methods to determine the volume of the ore zone. For example, some use the "pattern method" where pattern dimensions are used to determine the area of the ore and then the area is multiplied by screen thickness to determine the volume of rock in the five spot. The pore volume of the five spot is

outlined and digitized to provide the ore area⁸. This area is then multiplied by the average ore thickness to provide the three dimensional volume of the ore that is to be leached. This volume is converted to a PV by multiplying the ore volume by the percent porosity and then converting to the units of measurement (i.e. gallons). Table 1 below shows the PV calculation for the Crownpoint location that was used as the assumption in the budget model.

ZONB	Area (ft2)	Tk (ft)	Vol (ft3)	Por	gal/ft3	PV (gal)	H-PIF	V-PIF	CPV (gal)	9 X CPV
SE/4.										
UA	168,000	12	2,016,000	0.25	7.48	3,769,920	1.5	1.3	7,351,344	66,162,096
ULA	630,000	9.6	6,048,000	.0.25	7.48	11,309,760	1.5	1.3	22,054,032	198,486,288
MLA	260,000	8.6	2,236,000	0.25	7.48	4,181,320	1.5	1.3	8,153,574	73,382,166
ULB	350,000	11.9	4,165,000	0.25	7.48	7,788,550	1:5	1.3	15,187,673	136,689,053
LB	182,000	9.8	1,783,600	0.25	7.48	3,335,332	1.5	13	6,503,897	58,535,077
UUC	675,000	7.6	5,130,000	0.25	7.48	9,593,100	1.5	1.3	18,706,545	168,358,905
MC	840,000	12.2	10,248,000	0.25	7.48	19,163,760	1.5	1:3	37,369,332	336,323,988
ULC	992,000	11.8	11,705,600	0.25	7.48	21,889,472	1.5	1.3	42,684,470	384,160,234
ЦС	754,000	7.3	5,504,200	0.25	7.48	10,292,854	1.5	1:3	20,071,065	180,639,588
TOTALS	4,851,000		48,836,400		_	91,324,068			178,081,933	1,602,737,393
SW/4										
LA	308,000	8.8	2,710,400	0.25	7.48	5,068,448	1.5	1.3	9,883,474	88,951,262
ULB	270,000	6.2	1,674,000	0.25	7.48	3,130,380	1.5	1.3	6,104,241	54,938,169
LB	437,000	7.5	3,277,500	0.25	7.48	6,128,925	1.5	1.3	11,951,404	107,562,634
UUC	256,000	6.5	1,664,000	0.25	7:48	3,111,680	1.5	1.3	6,067,776	54,609,984
MC	465,000	12:7	5,905,500	0.25	7.48	11,043,285	1.5	1.3	21,534,406	193,809,652
TOTALS	1,736,000		15,231,400		,	28,482,718		,	55,541,300	499,871,701
G. Totals	6,587,000		64,067,800			119,806,786			233,623,233	2,102,609,094

Table 1 – Crownpoint Pore Volume Calculation

Explanation of Headings:

Area - Area of cut off grade mineralization.

Tk - Thickness of cut off grade mineralization:

Por - Estimated porosity of the rock.

PV - Straight pore volume without any correction.

H-PIF - Horizontal pore volume increase factor.

V-PIF - Vertical pore volume increase factor.

CPV - Corrected pore Volume.

"Flare" factors or pore volume increase factors are multipliers that are commonly used by the ISL industry to account for leach solution outside of the specific boundaries of the calculated ore PV and are generally accepted increases⁹ that should be recognized in cost estimates. HRI

calculated by multiplying the volume of rock by the percent porosity and then converting to the units of measurement (i.e. gallons). The total PV of a mine unit is calculated by adding all the five spot patterns in the mine unit. This method works well for existing ISL operations where the ore had been fully delineated and wellfield installed such as the existing projects in Wyoming.

⁸ Future wellfield patterns will be constructed within the ore that is economic at the time. Patterns will be a subset of the overall "ore area".

⁹ Flare outside of the ore zone is the norm. In the subsurface water moves in a radial pattern from injector to extractor in its path across the target ore. By choosing patterns carefully flair is minimized. However, as an expected component of ISL mining the flair factors are included in the bonding calculation as a deliberate cost contingency. There is a limit on acceptable flair, the horizontal monitor wells. If fluid is detected in the horizontal monitor wells it is no longer simply flair but then becomes an excursion. An excursion requires immediate corrective action to draw it back to the mine zone or the bonding must be increased above the amount contemplated

uses pore volume increase factors of 1.5 for horizontal and 1.3 for vertical¹⁰. Horizontal increase is calculated by multiplying the measured or mapped area of the ore, in plan, and multiplying the actual area by 1.5. This yields the affected horizontal area. Likewise, vertical increase is calculated by multiplying the measures average thickness of the ore by 1.3. This yields the affected vertical area. Multiplying the affected horizontal times the affected vertical by porosity provides the affected pore volume for the surety cost estimation. This number is in turn multiplied by 9 to determine water treatment and disposal volumes that are entered into the model to calculate costs. The 1.5 for horizontal and 1.3 for vertical pore volume increase factors have been calculated by URI engineers based on operating experience at other restoration demonstrations and commercial operations and have been adequate for monitoring and reporting restoration progress at other operations. During the Churchrock restoration demonstration that is described in LC 10.28, HRI will use these factors to measure the number of pore volumes that are processed during the restoration demonstration.

The methods utilized in this RAP and all three previous RAP's to calculate pore volume and adjusted pore volumes are consistent with the methods used for the Mobil Section 9 Pilot that was conducted approximately three miles northwest of the Crownpoint site, which in turn were the basis for the NRC evaluation in the FEIS, and are consistent with the methods used by HRI throughout the CUP licensing process, and for HRI's submittals during the Subpart L hearing. HRI methods to calculate pore volume and adjusted pore volumes, and the factors that were used were not generic or arbitrary, but rather were consistently proposed, evaluated, litigated and applied throughout the NRC licensing process and this Subpart L proceeding.

HRI presented the NRC with the Summary Report for the Mobil Section 9 In Situ Leach Pilot¹¹ as a part of the License Application support materials because the Pilot was a substantial field demonstration, and provided empirical results¹², for the ISL development that is proposed for the CUP. This Report was a compilation of the information from Mobil Oil Company's files and records that were developed when the Pilot was conducted. HRI utilized actual pattern dimensions and the actual number of gallons processed during the restoration to compile the summary report.

The cumulative restoration analyses in Attachment C of the Summary Report show that 59,173,469 gallons were circulated during restoration of the Section 9 Pilot, which equated to 16.7 adjusted pore volumes. It is from this data that NRC determined that after 8 - 10 pore

in this RAP to compensate for the increase in restoration cost. (See L.C. 10.13 which requires a bond increase if corrective action is not completed in 60 days)

¹⁰ Combined pore volume increase factor is 1.95.

¹¹ See Pelizza Affidavit January 19, 2001, Attachment 1.

¹² The Section 9 Pilot data provide actual ore zone dimensions and gallons processed so that actual pore volume can be processed. ENDAUM witness Lafferty Testimony May, 23 2001 \P 14 specifically recognizes the importance of knowing the quantity of water removed from the formation in calculating pore volumes ".... if the flair factor were increased, the number of pore volumes required should be decreased. This scenario may be true only if the total gallons of impacted groundwater where known." The value of the Section 9 Pilot, or any demonstration, is that it provides *known* variables to the equation that allows pore volume increase factors to be assigned. Given similar mining technology and geology, the pore volume increase factors from a demonstration, such as the Section 9 Pilot, can be applied to an analogous site such as the Crownpoint location.

volumes that TDS concentrations and specific conductance had reached a point where little improvement was realized with additional effort¹³ and that the initial surety should be based on 9 pore volumes. Table 2 shows how the adjusted pore volume was calculated using the pattern area, screen thickness, porosity, a horizontal pore volume increase factor of 1.5, and a vertical pore volume increase factor of 1.3. The methods of pore volume analysis utilized in the Summary Report form the foundation of the NRC impact evaluation in Section 4.3.1 of the FEIS which ultimately resulted in the staff determination that 9 pore volumes would be required for surety calculations¹⁴. It is important that HRI continue to use the previously evaluated pore volume increase factors in the RAP, and in future restoration analyses for the NRC, so that can projected and actual performance and costs can be measured consistently.

Table 2 – S	Section 9	Pore	Volume	Calcu	lation

ZONE	Pattern	Tk (ft)	Vol (ft3)	Por	gal/ft3	PV (gal)	H-PIF	V-PIF	CPV (gal)	Gallons	CPV
	Area (fl2)									Processed	Processed.
Single	40,488	24	971,712	0.25	7:48	1,817,101	1.5	1.3	3,543,347	59,173,469	16.69

Explanation of Headings:

Area - Area of cut off grade mineralization. Tk - Thickness of cut off grade mineralization. Por - Estimated porosity of the rock. PV - Straight pore volume without any correction. H-PIF - Horizontal pore volume increase factor. V-PIF - Vertical pore volume increase factor. CPV - Corrected pore Volume.

HRI has presented similar pore volume estimates during the license application review process. Specifically, in response to NRC Request for Further Information, Question 59, August 15, 1996, pertaining to Ground water Consumption, HRI supplied NRC with a pore volume calculation for the Crownpoint site that was similar to the one presented in the RAP Section 2 a¹⁵¹⁶. Consistent with the methodology used throughout the Crownpoint Project Licensing process, HRI utilized the ore body outline, not pattern dimensions, to determine the affected surface area and used a horizontal increase factor of 1.5. These were the same values utilized by NRC to conduct the evaluation of water consumption in the FEIS¹⁷. HRI's proposed pore volume increase factors are consistent with those, which had been systematically evaluated in the FEIS¹⁸. The FEIS has been found to be adequate for the purpose of licensing the Crownpoint Uranium Project.¹⁹

In summary, HRI correctly used the same methods to calculate adjusted pore volumes in the RAP cost estimate because they were the same as those that NRC reviewed in HRI submittals,

¹³ See FEIS p. 4-40

¹⁴ See FEIS p. 4-40

¹⁵ Based on professional judgment; HRI <u>increased</u> the estimated porosity from .21 in Q/59 to .25 in the RAP. This resulted in a more conservative estimate in the RAP. All other factors are the same.

¹⁶ See RAI Q1/59.

¹⁷ See FBIS pp. 4-57 through 4-60.

¹⁸ FBIS p. 4-122 used a combined horizontal and vertical pore volume increase factor of 1.95. I.e 1.3 (HDF) x 1.5 (VDF) = 1.95.

¹⁹ See COMMISSION CLI-01-04.

that NRC used in the FEIS impact evaluation, and that was placed into evidence by the HRI in the course of the Subpart L hearing process.

As an additional test for reasonableness of HRI's cost estimate, Table 3 below compares important project variables for PRI's Highland Uranium Project in Wyoming²⁰ against similar project variables for HRI's Crownpoint project²¹. Table 3 brings into context the comparative size, and corresponding scope of reclamation, of the two projects. In this table the actual surety amount for PRI are shown against the proposed surety amount from this RAP-CP. Reviewing the data in Table 3 in the context of number of wells, throughput, and number of satellite locations, the PRI Highland project exceeds the size of the HRI Crownpoint project. The PRI Highland and HRI Crownpoint wellfield pattern size and duration of operation are comparable. The PRI Highland adjusted pore volume is 20% greater than that estimated by HRI for the Crownpoint site²². In the comparative measures of \$/acre wellfield, or \$/pound produced, PRI proposed surety amount exceeds that of HRI. In the comparative measures of water process cost in \$/ m gal., HRI's an PRI's²³ proposed surety amount are essentially the same. The Table 3 information provides strong evidence that the costs estimates for the HRI Crownpoint location are consistent the PRI Highland costs that the Intervenor's experts argue should serve as a reasonable example.

Project Variables	PRI ²⁴	HRI Crownpoint
Number of wells (all)	~4141	~1014
Acres of wellfield patterns	~189	~181 ²⁵
Years of operation	13	15
Cumulative production (mm lbs. U ₃ O ₈)	~13	~15
Nominal throughput (gallon per minute)	9000	4000
Number of satellites	326	1
Number of pore volume's used in surety estimate	6	9
Size of adjusted restoration volume (billion gallons)	~2.71	~2.10
Comparative PV size (mm gal.) /acre wellfield	14.3	11.6
Restoration estimate (~mm \$)	\$21.12	\$16.39
Comparative \$/acre wellfield	\$111,751	\$93,370
Comparative \$/pound produced	\$1.63	\$1.09
Comparative process cost \$/ m gal.	\$7.79	\$7.81

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²⁰ See Testimony of April Lafferty, May 23, 2001 ¶ 11.

²¹ Mr. Ingle Testimony of December 19, 2000, p. 31 states "there is considerable relevant and analogous uranium ISL restoration experience in Wyoming to draw from to develop credible cost estimates".

²² As stated in 5 above, it is anticipated that if HRI was to use wellfield patterns rather that ore boundary areas then the pore volume and adjusted pore volumes would be smaller and more proportional to PRI when compared to well field pattern acreage.

²³ Dr. Abitz Testimony dated May 23, 2001 continues to describe reasons to use unit groundwater costs from the Fernald site. It is more appropriate to use a similar NRC licensed ISL facility.

²⁴ Actual from information provided by PRI staff.

²⁵ Estimated from COP 2.0, Figure 1.4-3.

²⁶ PRI costs include the D & D of the also include the mother plant. HRI mother plant D & D costs are included in the Churchrock Section 8 RAP.

2.6. Ground Water Quality

Once the economic recovery limit of a mine area is reached, lixiviant injection is stopped, and the affected ground water is treated (restored) to return the quality of water to regulatory standards. Water quality will be reclaimed to the criteria of L.C. 10.21. The limited water quality data from the Crownpoint site suggests that the water good and meets drinking water quality standards for all parameters except uranium related radionuclides.²⁷. The Unit 1 site monitor well data²⁸ from the same ore zone aquifer 2 to 3 miles to the west of the Crownpoint location is more extensive, and provides a good picture of radionuclide concentrations in water that is interstitial to roll front uranium mineralization. A thorough characterization of the premine groundwater will be conducted at the Crownpoint location as required by L.C.'s 10.21 & 10.22 and it will be this characterization that provides the baseline against which restoration will be measured.

LC 9.14 States: "Prior to injection of lixiviant, the licensee shall obtain all necessary permits and licenses from the appropriate regulatory authorities". At the Crownpoint location this provision requires that HRI acquire an Underground Injection Control Permit and an Aquifer Exemption²⁹ through the USEPA. Aquifer Exemption is a regulatory devise of the USEPA that is used to designate aquifers or portions of aquifers as "exempt" because they are mineralized and producible of minerals in commercial quantities and are not currently or likely to be in the future sources of drinking water. HRI has not acquired either of these authorizations for the Crownpoint location at this time but will be required to do so by NRC before operations begin.

2.7. Groundwater Restoration Budget Line Item Assumptions

HRI used historic and ongoing company experience with similar ISL uranium recovery and groundwater restoration operations in developing its budget model. For example because URI, HRI's sister company is currently reclaiming two other commercial ISL mines, HRI drew on this experience to aid in sizing labor requirements, maintenance needs and other cost categories that may not be apparent to someone without similar "hands on" experience. Unit labor costs are

²⁷ FEIS p. 3-31.

²⁸ RAP-U1 § 2.6

²⁹ 40 CFR 146.4 states: "An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in § 146.3 may be determined under 40 CFR 144.8 to be an "exempted aquifer" if it meets the following criteria:

⁽a) It does not currently serve as a source of drinking water, and

⁽b) It cannot now and will not in the future serve as a source of drinking water because:

⁽¹⁾ It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

⁽²⁾ It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

⁽³⁾ It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

⁽⁴⁾ It is located over a Class III well mining area subject to subsidence or catastrophic collapse;..."

the same as what was provided to NRC as part of the license review of the overall project.³⁰ In addition HRI used actual costs estimates from the region for utilities, and other materials that will be used in reclamation.

The assumptions that were used in the groundwater restoration budget (See Attachment E-2-1) are as follows:

Salaries

For the purpose of the Financial Assurance Plan, HRI assumed employment of technical professionals whose expertise is needed on a limited basis during the restoration mode. Anticipated positions are listed in the Restoration Budget rows 1-15. However, to justify their full time status and utilize their time on the job, it is assumed that they are required to provide a multitude of services, i.e., every employee will be wearing multiple hats. As such, individual job descriptions are difficult. For example, in the restoration mode, a qualified geologist will be required to verify the configuration of restoration patterns to assure efficient results. While this task requires unique geological expertise, the time commitment by the geologist to this task may only be several hours per week. Therefore, to maximize the use of the geologist time, he or she will be assigned to many other tasks for which he or she will be qualified such as lab analyst, well sampler, and plant operator. HRI also plans to maintain several other technical disciplines on staff such as radiation safety specialist, and engineers. In the restoration mode they will also perform their primary function and a number of secondary roles.

Reflecting the very broad nature of each full time employee's job at the CUP during the restoration mode, the following is a summary of each position that is budgeted in the Financial Assurance Plan. Anticipated salaries that were used in the budget are within Attachment E-2-4.

Operations Manager. In Charge of all aspects of day-to-day activities and planning for Crownpoint Uranium Project D & D. Responsible for interface with accounting services including coding and approval of all invoices, monthly cost analysis, restoration report generation, and employee relation responsibilities.

Environmental Manager. Responsible for the radiation health and safety, environmental compliance and quality assurance program at the Crownpoint Uranium Project. Supervise the Radiation Safety Officers to ensure that all radiation safety; environmental compliance and permitting/licensing programs will be conducted in a responsible manner and in compliance with all applicable regulations and permit/license conditions. Serve as Company liaison with regulatory agencies over the term of the restoration activity.

Radiation Safety Officer. Responsible for compliance with all USNRC, and MSHA rules and regulations at the CUP. Also responsible for assistance with laboratory analysis, vehicle safety, reporting and public information.

³⁰ See RAI Q1/8 - Feb. 19, 1996.

Chemist. Responsible for maintaining day to day analytical services including operational and environmental. In this capacity the chemist will assure that proper chemical parameters are reported to operations for the water treatment processes. He will be responsible for performing analysis of all routine environmental samples such as monitor wells.

Senior Geologist. Responsible for evaluation of logs and other well data and its interpretation as it pertains to restoration activities. Performs all monitor well sampling duties and when possible, helps with wellfield construction as well as Smeal pump hoist operation. Duties include drafting and ACAD operator for mapping needs. Provides weekend call-out and rotating operator duties as needed.

Wellfield Foreman. Responsible for Wellfield operation and construction as it pertains to restoration. Helps with monitor well sampling and backup pump hoist operator.

Wages-Direct

Electrician. Responsible for performing day to day electrical maintenance and repair services. Performs restoration operator duties on a rotating basis.

Plant Operator. Performs restoration operator duties on a regular basis. This would include the operations of all water treatment equipment including the reverse osmosis unit and brine concentrator.

Truck driver. Provides CDL driver duties. Will serve as backhoe operator and have operator duties on a rotating basis.

Weilfield Operator. Perform weilfield restoration operator duties on a regular basis and rotations with the Plant Operator.

Pump Hoist Operator. Responsible for the running of pumps in and out of the hole as required by restoration activities. Other duties include the operation of the backhoe and labor necessary for field construction.

Insurance-Workman's Compensation

Estimate based on projected compensation expenses and prevailing rates.

Payroll Taxes

Estimate based on projected compensation expenses and prevailing rates.

Medical Insurance

Estimate based on headcount and historic premium rates.

401K Contributions

The 401(k) Contribution cost codes represent HRI-funded contributions under the 401(k) – the retirement savings plan for HRI employees. The 401 (k) Contribution portion is made concurrent with each bi-weekly payroll period as a component of each eligible employee's total compensation.

Telephone/Telegraph

Estimated average costs of regular telephone service, cellular telephone service, and fax line service and internet line service at all CUP locations.

Postage/Freight

Estimated average cost of all types of mail service.

Copy Equipment

Estimate average cost for operation of all types of copy and fax equipment at all CUP locations:

Other Equipment & Rental

This covers the rental of equipment and miscellaneous equipment average costs. As applied in these estimates, it would include office machine rental, water machines for potable water, etc.

Office Supplies

Estimated average costs of office supplies such as paper, pens, etc.

Office Equipment Maintenance

Estimate average cost for maintenance for all types of office equipment at all CUP locations.

Data Processing

Estimated average cost for outside data processing.

Maps

Estimated average cost of plotting and reproducing maps for routine operations and reports.

Drafting & Printing

Estimated average for outside computer automated drawing services for report preparation.

Transportation - Air & Car

Estimated average for airplane tickets and auto rental.

Meals

Estimated average for travel related meals.

Misc. Travel Expense

Estimated average for travel related expenses such as hotels.

Env-Depreciable Equipment

Replacement equipment and calibration costs. This would include survey and sample equipment and routine calibration and service.

Env-Operational Analyses

This cost code is reserved for outside analysis

Environmental – Miscellaneous

As the name suggests, any environmental related item not specifically addressed in the other codes 090 through 098. Miscellaneous items may include sample bottles, filters, reagents, calibration, etc:

Safety

This is for costs associated with safety supplies for the employees. Items charged to this cost code would include safety boots, safety glasses, potable water, protective gloves, safety goggles etc.

Backhoe

All backhoe rental and maintenance such as oil changes, and repairs would be charged to this account

Misc. Chemicals

The major charge to this cost code during restoration is anti-scalent for the RO.

Utilities - Electric, Wellfield

Calculated electrical cost for operating the pumps and other equipment in the wellfield. The basis for these costs is shown in Attachment E-2-2.

Utilities - Electric, Brine Concentrator

Calculated electrical cost for operating the brine concentrator. The basis for these costs is shown in Attachment E-2-2.

Utilities - Electric, Plant and RO

Calculated electrical cost for operating the plant, reverse osmosis unit, and other office lighting and electrical needs. The basis for these costs is shown in Attachment E-2-2.

Submersible Pumps

Estimated average maintenance and replacement costs for submersible pumps that are used in extraction wells.

Submersible Motors

Estimated average maintenance and replacement costs for submersible pump electric motors that are used in extraction wells.

Field Piping & Valves

Estimated average maintenance and replacement costs for the various fittings, valves, glues etc. that is used in wellfield operations.

Meters

Estimated average maintenance and replacement costs for wellfield meters.

Misc. Field

The major charge to this cost code during restoration is PPE, rags, solvents and other miscellaneous field needs.

Handtools

Estimated average handtool replacement costs

Plant Piping & Valves

Estimated average maintenance and replacement costs for the various fittings, valves, glues etc. that is used in plant operations.

Plant Brine Concentrator Inst.

A cost code to charge anticipated brine concentrator instrument replacement.

Pumps

Estimated average maintenance and replacement costs for pumps that are used in the water treatment plant.

Plant Electrical

Estimated average electrical maintenance and replacement costs for water treatment plant operations.

Filters:

Estimated average filter and filter media replacement costs and maintenance costs for filtration equipment for water treatment plant operations.

Evaporation Ponds

A cost code to charge anticipated maintenance costs for pond liner repairs and maintenance

Roads

A cost code to charge anticipated maintenance costs for road maintenance.

Gas, Oil, and Grease

Equipment fuel costs and lubrication.

Disposal - BC Solids

Ongoing operational cost of disposing salt residue from brine concentrator. The basis for these costs is shown in Attachment E-2-2.

RO Unit

A cost code to charge anticipated reverse osmosis unit repair, maintenance and instrument replacement.

Lab Supplies

Estimated average costs of analytical laboratory supplies such as reagents, filters, glassware, etc.

RO Membrane

Average replacement costs of reverse osmosis unit membranes.

Field Equip. Repairs & Maint.

A cost code to charge anticipated maintenance costs for large field equipment such as the pump host equipment, generators, and trucks.

Vehicle Repairs & Maint.

A cost code to charge anticipated maintenance costs for road vehicles such as pick up trucks and company autos.

Vehicles – Pickups

The estimated average cost for the major repair of a company pickup truck.

Vehicles - Tractors & Trucks

The estimated average cost for the major repair of a large trucks or trailers.

Vehicles - Automobiles

The estimated average cost for the major repair of a company car.

Minus contingency/profit, the total cost for groundwater restoration and post restoration management is projected to be \$10,890,592.

November 19, 2001

ATTACHMENT E-2-1 GROUNDWATER RESTORATION BUDGET

CROWNPOINT SEC, 24 GR	ROUNDWATER	RESTORA	TION AND	DECOMMIS	SIONING C	osts					November 19, 200	1
COSTS ASSOCIATED WIT	H RO AND BRI	NE CONCI	ENTRATION	OPERATIO	N AND MA	NTENANCE						
Parlod	1 1/1 1	2/1	3/1	I	6/1	<u>eri 1</u>	7/1	8/1	9/1	19/1	11/1	12/1
Constitute Manager	· •	1	'n	1.	.1,	á	-1		1	.1	1	í
Environmental Manager	1	.1,	1	(1)	(1	1	1	1	1	1	1	1 2
Plant Personnel		i			.a	1	· •	-1	1		۰	۲.
Chemist	i,		i.		4	i .	i	1	1	1,	1	1
Electrician .	1	1	4	1	4		1		1		1	1
Wellind Personnel	2	•			•	•	•	·	•	·	•	
Foreman	- 1	11	1	1	-1	2	1.	1	1	1	1	1
Truck Oriver Wellieki Operatore	1.				1					1. 1.	1	1
Pump Hotst Operators	ĩ.	1	9	1	1	.1	1	1	1	. 1	ì	1;
Engineering & Geologic Personnel										4,		21
Santor Geologici	٩,	1.4	•.			•	,	•	•	•1	.,	•
Total Employees	i	11	31	<i>.</i> (11,	ţi.	-11	11.	11	-11	11	- 11	-11
Contraction Contraction												
Reverse Osmosis Trestment	1											
GPM RO Cepecity	580	680	580	- 680 -	580	580	560	580	.550	580	580	500
GPM RO Rigid	115	.118	116	110	116	118	.118	116	118	118	116	118
MM Gats, RO Processed - Month	25,691,200	24,220,800	25,691,290	25,058,000	25,891,200	25,058,000	25,891,200	25,691,200	: 25,658,000	25,891,200	25,053,000	25,691,200
Mill Gata, RO Reject - Month	5,178,240	4,844,160	6,178,240	5,011,200	5,178,240	5,011,200	5,178,240	5,178,240	5,011,200	5,178,240	5,011,200	6,178,240
Brine Concentration								-				
GPM BC Capitony GPM Distillate	113.5	113.5	113.5	118.5	118.5	113.5	113.5	113.5	113.5	113.5	113.5	112.5
GPM Brine	2.5	2.5	2.6	26	25	2.5	2.5	2.5	2.5	2.5	2.5	2.5
MAI Gata, EC Capacity - Month MM Gata, Distillata - Manth	5.060,640	4,739,760	5,065,640	4,903,200	5,065,640	4,003,200	5,065,640	5,065,640	4,603,200	5,058,640	4,903,200	5,065,640
MM Gela, Brine - Month	111,600	104,400	111,600	108,000	111,600	108,000	111,600	111,600	108,000	111,600	108,000	111,600
Regioning Galloon (9 PV En.)	2 102 609 694	2 076 829 494	2.052.713.094	2,028,933,494	2.001.985.494	1.978.205.694	1.951.257.894	1,925,478,294	1.629.695.694	1.874.750.694	1.848.971.094	1.824.023.004
Beginning PV	0	8.89	8,70	6.68	8.67	8.48	. 8.35	8.24	8,13	8.02	7.91	7.01
Gallons Processes Month PM Processed Month	25,779,600	24 115 400	25,779,600	24,948,000	25,779,600	24,948,000	25,779,600	29,779,600	24,948,000	25,779,600	24,948,000	25,770,600
Cumulative Gallons Processed	25,778,500	49,898,000	75,675,600	100,623,600	126,403,200	151,351,200	177, 130,800	202,910,400	227,858,400	253,638,000	278,588,000	304,385,600
Cumulative PV Processed	0.11	0.21	2 020 933 494	2 001 955 494	0.54	1 051 257 894	0.78	0.87	0.90	1.09	1.824.023.094	1.30
Remaining PV to Process	6.69	4.79	8.62	8.57	18.48	8.35	8.24	8.13	8.02	7,91	7.81	7,70
ESTIMATED COST DETAIL												
Description	GW Restoration Oper	ntions			<u>, 175 a</u>		· · · · · · · · · · · · · · · · · · ·	· · · · ·			W Restoration O	perations
	-						-		-			
Salaries-Direct Water-Cirect	\$32,250	\$32,200	\$32,250	\$10,487	\$10,487	\$10,487	\$10,487	\$10,487	810,467	\$10,487	\$10,467	\$10,487
Insurance Workmans Compensation	\$1,358	\$1,308	\$1,368	\$1,358	\$1,368	\$1,258	\$1,388	\$1,308	\$1,353	\$1,358	\$1,368	\$1,368
Madeni Insurance	\$4,274	\$4,274	\$4,274	84.274	84,274	\$4,274	\$4,274	\$4,274	\$4,274	84.274	\$4,274	\$2,882
401K Contributions	\$1,068	\$1,058	\$1,068	\$1,058	\$1,068	\$1,068	\$1,068	\$1,050	\$1,058	\$1,058	\$1,058	\$1,068
Telephone/Telegraph Dectame/Freihte	\$1,250	\$1,250	81,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250
Copy Equipment	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300
Other Equipment & Rentet	\$200	\$200	8290	\$200	\$200	\$200	\$200	\$200	\$200	\$290	\$200	\$200
Office Equipment Meintenance	\$50	\$50	1850	: \$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Data Processing	\$150	\$150	\$150	28150 ·	8150	-\$150	\$150	\$150	\$150	\$150	\$150	\$150
Drafting & Printing	\$50	\$50	.850	:\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50
Transportation - Air & Car	-\$850	\$850	\$850	8850	\$850	\$650	\$850	8850	\$850	\$850	\$850	\$850
Miss. Trevel Expense	\$200	\$300	\$300	\$300	\$300	\$300	8300.	8300	\$300	\$300	\$300	\$300
Ens-Depreciable Equipment	\$100	\$100	. \$100	\$100	\$100	\$100	\$100,	\$100	\$100	3100.	\$100	\$100
Environmental - Miscelleneous	\$200	\$200	\$2,000	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	\$200
Subly	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
Backhoe Maintenance	\$700	\$700	\$700 \$2,450	\$700	\$700	\$700	\$700	\$700	\$700 \$2450	\$700 \$2,450	\$700	\$700
Latifities - Electric, Wellfald	\$16,362	\$15,862	\$15,362	\$16,362	\$16,352	\$16,252	\$16,352	\$15,352	\$16,302	\$10,302	\$15,362	\$18,382
Utilities - Electric, Brine Concentrator	\$32,850	\$32,650. \$5 858.	\$32,650	\$32,850	\$32,850	\$32,850	\$32,850	832,850	\$32,850	832,850	\$32,850	\$32,650
Submersible Pumpe	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500.	\$500	\$500	\$500	8500
Submarzible Motors	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Natata Hand Highlig & Asints	- \$50	\$50	\$50	850:	\$50	150	\$50	850	850	150	\$50	\$50
Bilse. Field	\$100	\$100	-\$100	\$100	\$100	\$100	\$100	\$100	.\$100	\$100	\$100	\$100
Plant Plains & Valves	\$200	\$200	8200	\$200	\$200	\$200	\$290	\$200	-\$200	\$200	8200	\$200
Plant Brine Conc Inst.	\$50	\$50	\$50	\$50	\$50	\$50	850	\$50	\$50	. 850	\$50	550
Punos Plant Electrical	\$100	\$100	8100	\$100	\$100	\$100	\$100	.\$100	8100	\$100	\$100	\$100
Filtura	\$1,100	\$1,100	\$1,100	\$1,700	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	81,100	\$1,100
Evenoration Ponds ,	\$50	550 \$100	550	. \$50-	850	- \$50	\$50 \$100	\$50 \$100	\$50	\$30	550	\$50
Gen, Of, Grosso	\$1,150	\$1,150	\$1,150	81,150	\$1,150	\$1,150.	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150
Otaposal - B.C. Solida	\$8,291	\$8,291	\$8,291	\$8,291	\$8,291	\$8,291	\$8,291	: \$8,291	\$8,291	\$8,291	\$8,291	\$8,291
Ext Gran	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
RO Membrane	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Field Equip. Repairs & Maht. Vehicle Repairs & Maht.	\$150. \$550	\$150	8150 8550	\$150 \$560 [°]	8150 \$550	\$150 \$550	\$150	a150 \$550	- 515D - 665D	. \$150 \$550	*\$150 \$550	\$150 \$550
Versicias - Pictures	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Vehicles - Tractore & Trucka	\$1,000	81,000	\$1,000	\$1,000 £500	\$1,000 \$540	81,000	\$1,000	000,16 00 <u>82</u>	\$1,000 \$500	\$1,000 \$500	\$1,000	51,000 \$500
Adiates - Winningses	Brains,					:						
Monthly Total	\$135,287	\$136,287 \$779 674	\$136,287 \$408 8*1	\$138,267 \$545 1/#	\$138,287, \$451 418	\$138,287 \$817,772	\$136,257	\$138,267 \$1,000 205	\$120,287 \$1,228,587	\$136,257	(\$136,287) \$1,400 168	5138,287
Period Days	31	29	31	30	31	. 30	31	31	30	.31	20	31

CROWNPOINT SEC, 24 GRO	UNDWATE	RESTORA	TION AND	DECOMMIS	SIONING C	OSTS					Houses 19, 200)i
COSTS ASSOCIATED WITH	12 RO AND BR	UNE CONCI	ENTRATION 3/2	42	IN AND MAI	NTENANCE	7/2	8/2	9/2 4	10/2	11/2	12/2
lanagement and Accounting!												
Operations Manager Environmental Manager.	1	1			1	1' 1	.1 1	1.	1. 1.	11 1	1	
Decision Officer	•	i	•	ì	1	1	4	•		4	ſ	
Chemist	į	1	i	i	.1	i.		1	i		· • •	
Electricien Plant Constant	1.	1	1	1	1	1		1	1	4	1	
Cifeld Personnel	.•	•			•	•	•		•	•		
Forenen Yourk Driver	:	1	1	-1	1	1		1	1	-1	1	
Walfield Operators			i		1		i					
meeting & Geologic Personnel	.1	•	1	,	,	•	,	1	1.	1	1	
Senior Geologiet	-1	1	ì	-1	1	1	1	1	1	1	11.	
el Employees ;	11	11	31.	11	11	11	11	11	11:	11	11.	
rations Statistics												
GPM RO Capacity	580	580	580	680-	580	580	580	.580	560	580	. 580	5
GPM RC Product	484	484	484	464	404	484	404	-454	484	484	-484	4
MM Gats, RO Processed - Month	25,891,200	24,220,800	25,691,200	25,058,000	25,691,200	25,058,000	25,891,200	25,891,290	25,058,000	25,491,200	25,058,000	25,891,2
NDA Gaila, RO Permitte - Month NDA Gaila, RO Reject - Month	5,178,240	4,844,150	5,178,240	5,011,200	6,178,240	3.011,200	20,712,950	5,178,260	20,044,000	8,178,240	20,044,800 5,011,200	20,712,0
Concerbedan)			198						498.			
GPM Distillate	113.5	113.6	120	113.5	113.5	113.5	113.5	112.5	125	125	113.5	112
GPM Brine MM Gats BC Camerity - Month	2,5 5,580,000	2.5 5.220.000	2.5 6.580.000	5,400,000	2.5	5,400,000	2.5 5.580.000	2.5 5,550,000	2.5	2.5	2.5	18 680 F
NM Gais, Distillate - Month	5,008,640	4,719,760	5,006,640	4,003,200	6,006,640	4,903,200	6,008,640	5,053,840	4,903,200	5,058,640	4,903,200	6,086,8
ann sana, srifie - Nichtin Is Renuits	111,500	194,400	.111,600	108,000	111,600	103,000	111,600	111,600	108,000	111,600	108,000	1,11,0
Beginning Gallons (9 PV Eq.)	1,795,243,494	1,772,463,694	1,748,347,494	1,722,567,894	1,697,619,894	1,071,840,294	1,648,692,294	1,621,112,594	1,595,333,094	1,570,385,094	1,544,505,494	.1.519,657,4
Galons Processes Month	25,779,000	24,116,400	26,779,600	24,948,000	25,779,500	24,948,000	25,779,600	25,779,600	24,948,000	25,779,600	24,948,000	25,770.0
PV Processed Month	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
Cumulative PV Processed	1.41	1.52	1,63	1.73	1.84	1.05	2.00	2.17	2.28	2,39	2.50	2
Remaining Gallons to Process Remaining PV to Process	1,772,483,894	1,748,347,494	1,722,567,894	1,697,619,694	1,671,840,294	1,648,892,294	1,621,112,694	1,695,333,094	1,570,285,094	1,544,605,494	1,519,657,494	1,493,677,6
MATED COST DETAIL										0.01	0.00	6.4
Description -						· · · · · · · · · · · · · · · · · · ·	GW R	testoration Operat	005			
Saturies-Direct	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$12,2
Wages-Crect Insurance-Workmans Compensation	\$10,487	\$10,467	\$10,487. \$1,368	\$10,487	\$10,487 \$1,355	310,487 \$1,368	\$10,487	\$10,487 \$1,358	\$10,487	\$10,487	\$10,487	\$10,40
Payroll Taxas	82,992	\$2,092	\$2,992	\$2,992	\$2,992	\$2,992	\$2,992	\$2,692	\$2,992	\$2,692	\$2,892	\$2,8
401X Contributions	\$1,053	\$1,058	\$1,008	\$1,055	\$1,088	\$1,058	\$1,058	\$1,058	\$1,063	\$4,274	\$4,274 \$1,053-	\$4,2
Telephone/Telephone	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	-\$1,2
Copy Equipment	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	181
Other Equipment & Rental	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	\$200	152
Office Equipment Maintenance	\$50	.850	1650	\$50	\$50	\$50	\$50	\$50	:\$50	\$50	\$50	
Data Processing Manus	\$150	\$150	\$150	\$150	\$150	\$150	\$150 \$50	\$150 \$50	\$150.	\$150	8150	
Orafling & Printing	\$50	\$50	. \$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	- \$50	i
transportation - Air & Car Maste & Entertainment	\$200	\$200	\$200	\$200	\$200	\$200	\$200	8650 \$200	8850 8200	\$850	\$850 \$200	- 58
Miss. Travel Expense	\$300	\$300	\$300		\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$1
Env-Operational Analyses	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	:82,000	\$2,000	82,0
Environmental - Miscallaneous	\$200	-8200 -	\$200	\$200	\$200	\$200	\$200	\$200	- \$200	\$200	8200	
Bacthos Maintenance	\$700	\$700	\$700	\$700	\$700	\$700	\$700	\$700	\$700	\$700	\$700	5
Miss. Chemicals (Pilling - Electric Marilliots	\$2,450	\$2,450	\$2,450	\$2,450	82,450	\$2,450	\$2,450	\$2,450	\$2,450	\$2,450	\$2,450	- 82,4
Utilities - Electric, Brine Concentrator	\$32,850	832,850	\$32,850	\$32,850	\$37,850	\$32,650	\$32,650	\$32,850	\$32,850	\$32,850	\$32,850	\$32,1
Utitize - Electric, Plant and RO Bubmanible Pumpa	\$5,695	\$5,890	\$5,898	\$5,690	\$5,898 \$500	\$5,898 \$500	85,695	\$5,898	\$5,890 \$500	\$5,896	\$5,896	- \$5,0
Submersible Motors	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500.	\$500	\$500	
Field Piping & Velves Motors	\$50	18400	\$400	\$50	\$50	\$50	\$400 · \$60	\$50	- \$50	S400	\$400	*
Misc. Field	\$100	\$100	\$100	\$100	\$100	\$100	- \$100	\$100	\$100	\$100	\$100	
Plant Piping & Valves	\$200	(\$200)	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	5
Plant Brine Conc Inst. Purnos	\$50	\$50 £500	\$50	\$50	850	\$50	850	\$50	\$50	\$50		-
Plant Electrical	\$100	\$100	\$100	\$100	\$100	8100	\$100	8100	\$100	\$100	\$100	
Fines Eveneration Ponds	\$1,100	\$1,100	\$1,100	* \$1,100 \$50	\$1,100 \$50	\$1,100 \$50	\$1,100	\$1,100	\$1,100 550	\$1,100 \$50	\$1,100	. 81,
Roads	\$100	\$100	\$100	.\$100	\$100	\$100	\$100	\$100	8100	\$100	\$100	
Giposal - B.C. Solida	\$1,150	\$1,150 \$8,291	\$1,150 \$8,291	\$1,150 \$8,291	\$1,150 \$8,291	\$1,160 \$8,291	\$1,150 \$8,291	.\$1,150 \$8,291	\$1,150 \$8,291	\$1,150 \$8,291	81,150 <u>\$8,2</u> 91	.81, <u>s</u> a :
RO Unit	8250	8250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	
RO Membrane	5100 \$3,000	\$3,000	\$100	\$100 \$3,000	\$100	\$100	\$100 \$3,000	\$100 \$3,000	\$100 \$3,000	\$100 \$3,000	\$100 \$3,000	4'. 128
Field Equip. Repetra & Maint.	\$150	\$150	\$150	\$150	\$150	8150	\$150	\$150	\$150	\$150	\$150	\$
venicies - Pictupa	\$500	\$500	\$500	\$500	8500	\$500	\$500	\$500	8500 8500	8500	3650 \$500	·무 보
Vehicles - Tractors & Trucks	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,0
		- Gues	8000	530	3000	acido Acido	9006	8000	0006	5006	4500	- \$5
Monthly Total Comutative Total	\$138,287	\$135,257 \$1,908.017	\$135,257 \$2,044,304	\$130,287 \$2,180,591	\$136,287 \$2,318,679	\$130,287 \$2,453,165	\$136,287 \$2,689,452	\$130,287	8130,287	\$125,257 \$2,005,319	\$136,257- \$3,134 500	\$138,2
Period Days	31	29	31	30	31	\$0	31	31	30	31	30	

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CROWNPOINT SEC, 24 GRO	UNDWATE	R RESTOR/	TION AND	DECOMMIS	SIONING C	OSTS					November 18, 200	ñ
COSTS ASSOCIATED WITH	RO AND BE	UNE CONCI	ENTRATION	OPERATIO	N AND MA	NTENANCE						
inspement and Accounting			- 44	<u> </u>	. 543	era 1	161 1	- 8V8		yer3	11/2	
Operations Manager	1°	1	1	- 1	.1	1	1	1	1	1	1	
Environmental Managar	-1	1	1	1	1	1-	-1	1	Ŷ.	1.	4	
Rentation Officer	5:	1	1 :	· •	1	1	1.	,	1	•		
Chamlet	1	1	1		1	1	1	1	1	j.,	1	
Electrician , Blint Coastlar	1		1	:		1		1	:	1	1	
Inteld Personnel					•	•	•.	•	•	•	•;	
Foreman	12	1	1	1	1	1	:1	1	1	.1	15	
Truck Oriver Wellight Constant	1		1	1	-1	1	1	1	1	N. 1.	1	
Pump Holst Operators	1	્ય	i i		i	i	· i	i	5	1	i	
gineering & Geologic Personnel												
Senior Geologist	1	1	1	1	1	1	-1	1	1,	-1	1	
tel Employees	11/	11	i 1	11	11	11	11-	11	-11	11.	.11.	
and a second strategy												
wattons Statistics												
GPM RD Canadity	:580 -	580	580	580	580.	580	580	580	580	580	580	
GPM RO Product	484	484	.484	484	404	454	454 -	454	454	484	404	
GPM RO Reject	118	118	115	118	118	118	115	118	118	118	118	
MM Gats, RO Producto - Month	20,712,960	19,376,640	20,712,900	20.044,600	20,712,950	20,044,600	20,712,960	20,712,960	20,055,000	20,712,000	20,044,800	20,591,2
MM Gais, RO Reject - Month	5,178,240	4,044,150	5,178,240	5,011,200	5,178,240	5,011,200	5,178,240	5 178 240	5,011,200	5,178,240	5,011,200	5,178,2
GPM RC Cenerily	125	175	125	125	125	(25	125	125	125		125	
GPM Distillate	113.5	113.5	1125	112.5	113.5	-113.5	113.5	112.5	113.5	113.5	113.5	.11
GPM Britse	2.5	2.5	25	2.5	2.5	2.5	2.5	2.6	2,5	2.6	2.6	
MM GRIs, BC Capacity - Month MM Gate: Distillate - Month	5,550,000	4,739,760	5,580,000	5,400,000	5,000,000	5,400,000	5,580,000	5,580,000	5,400,000	5,550,000	5,400,000	5,580,0
MM Gaila, Brine - Month	111,600	104,400	111,600	105,000	111,600	108,000	111,600	111,600	108,000	111,600	108,000	111.6
ans Results											· · · · · · · · · · · · · · · · · · ·	
peganing Gallons (9 PV Eq.) Becincing PV	1,493,677,694 A 10	1,453,093,294 A 54	1,443,901,894	1,410,202,294	1,393,254,294	1,307,474,094	1,342,528,694	1,318,747,094 8.04	1,290,967,494	1,208,019,494	1,240,239,694	1,215,291,6
Gallons Processes Month	25,779,600	24,118,400	25,779,600	24,948,000	25,779,600	24,946,000	25,779,000	25,779,600	24,948,000	25,779,500	24,948,000	25,779,6
PV Processed Month	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0,11	0
Cumulative Gallons Processed	2 72	658,027,200	534,405,600	709,354,600	735,134,400	760,082,400	785,662,000	811,641,600	836,689,600	852,359,200	887,317,200	913,098,6
Remaining Gallons to Process	1,468,098,294	1,443,581,894	1,418,202,294	1,393,254,294	1,367,474,694	1342.625.694	1,310,747,094	1,290,907,494	1,205,019,494	1,240,239,694	1,215,291,694	1.189.512.2
Remaining PV to Process	6.28	0.18	8,07	5,96	5.65	5.75	5.04	6.63	5.42	6.31	6,20	5
THATED COST DETAIL						•						
Description					Operationa							
Salaria-Obaci	832,250	832,250 -	832 250	832,250	\$32,250	\$32,250	\$32,250	. \$32,250	\$32,250	\$32,250	\$32,750	\$32,2
hisurance Workmans Compensation	\$1,858	\$1,388	\$1,365	\$1,353	\$1,353	\$1,355	\$1,365	\$1,358	\$1,365	\$1,358	\$1,368	\$10,4
Peyroli Taxes	\$2,992	\$2,992	\$2,992	\$2,992	\$2,992	\$2,092	\$2,992	\$2,092	\$2,092	\$2,992	\$2,962	\$2,0
(Madical Insurance). 40336 Contributions	84,274	84,274	54,274	\$4,274	\$4,274	\$4,274	84,274	\$4,274	\$4,274	84,274	\$4,274	84,2
Telephone/Telegraph	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	81,250	\$1,250	81.2
Postaga/Freight	.\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	
Copy Equipment & Rentel	\$300	\$200	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	, s
Office Bupplies	\$250	\$250	\$250	\$250	8250	\$250	\$250	\$250	\$250	. \$250	\$250	
Office Equipment Maintenance	\$50	850	\$50	\$50	\$50	\$50	\$50	\$50	\$50	850	\$50	
Opta Processing	\$150.	\$150	\$150	\$150	\$150	\$150	\$150	.\$150	\$150	18150	3150	\$
Drafting & Printing	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	
Transportation - Air & Car	\$850	\$850	\$850	8850	\$850	\$850	\$850	\$850	\$850	\$850	\$850	\$
Marka & Entertainment	\$200	8200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	2
Env-Orgranistia Equipment	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	- \$100	\$100	
Env-Operational Analyses	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	82,
Environmental - Miscalianeous	\$200	\$200	\$200	\$200	\$290	\$200	\$200	\$200	\$200	8200	\$200	
Genty Rections Maintenance	\$250	\$250	\$250	\$250	\$250	8250	\$250	\$250	\$250	\$250	\$250	
Mino, Chemionis	\$2,450	\$2,450	12 450	47.450		er 20			er 450	\$2,450	\$2,450	
Utilities - Electric, Walifield			44,400		84,430	\$2,450	\$2,450	\$2,450	84.4.30			
Utuities - Electric, Brine Concentrator	\$10,302	\$16,302	\$18,362	\$10,302	\$10,302	\$2,450 \$16,352	\$2,450 \$16,302	\$2,450 \$10,352	\$16,302	\$15,382	\$10,302	\$10,
I Million - Electric Slight had Dr.	\$10,302 \$32,850	\$10,302 \$32,850	\$18,362	\$16,302 \$32,850	\$10,322 \$12,650	\$2,450 \$16,362 \$32,850	\$2,450 \$16,362 \$32,850	\$2,450 \$10,362 \$32,850	\$16,302 \$32,850	\$15,352 \$32,850	\$16,362 \$32,650	\$10, \$32,
Utilities - Electric, Plant and RO Submersible Puncts	\$10,302 \$32,850 \$5,698 \$500	\$16,302 \$32,850 \$5,890 \$5,890	\$18,362 \$32,850 \$5,695 \$500	\$10,302 \$32,850 \$5,698 \$500	\$10,352 \$10,352 \$32,650 \$3,698 \$3,698	\$2,450 \$16,362 \$32,850 \$5,695 \$5,695	\$2,450 \$16,362 \$32,850 \$5,895 \$5,895	\$2,450 \$16,352 \$32,650 \$5,096 \$5,096	\$16,302 \$32,650 \$5,690 \$5,000	\$15,802 \$32,850 \$5,698	\$10,302 \$32,650 \$5,696	\$10, \$32, \$5,
Utilities - Electric, Plant and RO Submersible Pumps Submersible Moture	\$10,362 \$32,850 \$5,698 \$500 \$500	\$16,382 \$32,650 \$5,820 \$500 \$500	\$16,362 \$32,650 \$5,696 \$500 \$500	\$10,302 \$32,850 \$5,638 \$500 \$500	\$2,450 \$10,302 \$32,650 \$5,696 \$500 \$500	\$2,450 \$10,362 \$32,850 \$5,695 \$500 \$500	\$2,450 \$16,362 \$32,550 \$5,836 \$500 \$500	\$2,450 \$16,362 \$32,650 \$5,696 \$500 \$500	\$16,302 \$32,850 \$5,696 \$500 \$500	\$15,852 \$32,850 \$5,858 \$500 \$500	\$10,302 \$12,850 \$5,636 \$500 \$500 \$500	\$10, \$32, \$5, \$5, \$5,
Utilities - Electric, Flant and RO Submersible Pumps Submersible Motors - Fladd Plaing & Valves	\$10,302 \$32,650 \$5,636 \$500 \$500 \$500	816,382 832,650 85,820 85,000 8500 8500 8400	\$16,362 \$32,850 \$5,695 \$500 \$500 \$500	\$16,362 \$12,850 \$5,698 \$500 \$500 \$500	\$2,450 \$18,352 \$32,650 \$5,658 \$500 \$500 \$400	\$2,450 \$16,362 \$32,850 \$5,655 \$5,655 \$500 \$500 \$400	\$2,450 \$16,302 \$32,850 \$5,896 \$500 \$500 \$500	\$2,450 \$16,352 \$32,650 \$500 \$500 \$500 \$400	\$16,362 \$32,650 \$5,695 \$5,695 \$500 \$500 \$400	\$15,202 \$32,850 \$5,658 \$500 \$500 \$500 \$500	\$10,362 \$32,650 \$5,656 \$500 \$500 \$500 \$600	\$10, \$32, \$5, \$
Utilities - Electrin, Plant and RO Bubmanible Poumps Submanible Motors - Platd Piping & Valves Maters Mise, Field -	\$16,362 \$32,850 \$5,698 \$500 \$500 \$400 \$500 \$100	\$10,302 \$32,050 \$5,820 \$500 \$500 \$400 \$500 \$400 \$500	\$18,302 \$12,650 \$5,695 \$500 \$500 \$500 \$400 \$500 \$100	\$10,302 \$10,302 \$12,850 \$5,030 \$500 \$500 \$500 \$500 \$500	82,450 \$18,302 \$32,650 \$5,638 \$500 \$500 \$400 \$400 \$100	\$2,450 \$18,352 \$32,850 \$5,655 \$500 \$500 \$400 \$500 \$100	\$2,450 \$16,902 \$32,850 \$500 \$500 \$500 \$500 \$500 \$500	\$2,450 \$10,352 \$32,850 \$500 \$500 \$500 \$500 \$500 \$500	\$16,302 \$32,650 \$5,690 \$500 \$500 \$500 \$400 \$400	\$15,852 \$32,850 \$5,655 \$500 \$500 \$500 \$500 \$500	\$10,302 \$32,650 \$5,695 \$500 \$500 \$500 \$600 \$600	\$10, \$32, \$5, \$
Utilities - Electric, Plant and KO Submersible Parnips Submersible Alorge Rate Piping & Valves Matern Maser Field Handtoola	\$10,302 \$32,650 \$5,656 \$500 \$500 \$500 \$500 \$500 \$100 \$100	\$10,302 \$32,850 \$5,830 \$500 \$500 \$405 \$50 \$100 \$100	\$10,302 \$32,650 \$5,695 \$500 \$500 \$400 \$500 \$100 \$100	\$10,302 \$10,302 \$12,850 \$500 \$500 \$500 \$400 \$500 \$100 \$100 \$100	\$2,450 \$10,202 \$32,650 \$500 \$500 \$400 \$500 \$100 \$100	\$2,450 \$16,362 \$32,850 \$5,655 \$500 \$500 \$400 \$100 \$100	\$2,450 \$16,302 \$32,850 \$5,838 \$500 \$500 \$500 \$500 \$100 \$100	\$2,450 \$10,862 \$32,550 \$5,656 \$500 \$500 \$500 \$500 \$100 \$100	\$16,302 \$12,650 \$5,690 \$500 \$500 \$500 \$400 \$500 \$100 \$100	\$15,852 \$32,850 \$5,658 \$500 \$500 \$500 \$500 \$500 \$100 \$100	\$10,302 \$12,650 \$5,636 \$500 \$500 \$500 \$500 \$100 \$100	\$10, \$32, \$5, \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Utilities - Electric, Plant and RO Submersible Pumps Submersible Moture Rad Poing & Valves Mise, Reid Handtoola Plant Plante & Valves Plant Plante & Valves	\$10,302 \$12,550 \$5,538 \$500 \$500 \$500 \$500 \$100 \$100 \$200	\$10,302 \$32,550 \$5,500 \$500 \$500 \$500 \$400 \$300 \$100 \$100	\$10,502 \$32,650 \$5,665 \$500 \$400 \$100 \$100 \$100 \$100	\$10,302 \$12,850 \$5,630 \$500 \$500 \$500 \$500 \$100 \$100 \$200	\$2,450 \$10,252 \$32,650 \$5,050 \$500 \$500 \$400 \$500 \$100 \$100 \$200	\$2,450 \$15,352 \$32,550 \$5,555 \$500 \$400 \$100 \$100 \$200	\$2,450 \$16,302 \$32,550 \$5,838 \$500 \$500 \$500 \$100 \$100 \$200	\$2,450 \$16,362 \$32,656 \$5,656 \$500 \$400 \$400 \$100 \$100 \$100 \$200	\$1,502 \$12,850 \$5,600 \$500 \$400 \$100 \$100 \$200	\$15,302 \$32,850 \$5,595 \$500 \$500 \$500 \$600 \$100 \$100 \$200	\$10,982 \$32,650 \$5,696 \$500 \$500 \$400 \$400 \$100 \$100 \$200	\$10, \$32, \$5, \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Utilities - Electric, Plant and RO Subcrentitie Namos Subcrentitie Motore Falde Poling & Volves Matern Miso, Field Mantfolota Plant Poling & Volves - Plant dirite Cono Inst Plantes	\$10,302 \$32,850 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$200 \$500 \$500	\$16,362 \$12,550 \$5,620 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$500 \$500	\$10,502 \$32,650 \$5,655 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$10,302 \$12,850 \$500 \$500 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$500 \$500 \$500	\$2,450 \$10,322 \$32,650 \$5,000 \$500 \$400 \$500 \$100 \$100 \$200 \$200 \$500	\$2,450 \$15,352 \$32,550 \$5,555 \$500 \$400 \$100 \$100 \$200 \$200 \$200 \$200 \$200	\$2,450 \$16,802 \$32,850 \$5,898 \$500 \$500 \$100 \$100 \$200 \$500 \$200 \$500	\$2,450 \$16,362 \$32,656 \$5,656 \$500 \$500 \$500 \$100 \$100 \$100 \$200 \$200 \$500	\$1,002 \$12,850 \$5,898 \$500 \$500 \$400 \$100 \$100 \$200 \$200 \$500	\$15,302 \$32,850 \$5,595 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$200 \$300 \$300 \$100	\$10,982 \$32,650 \$5,696 \$500 \$500 \$400 \$400 \$100 \$100 \$100 \$200 \$200 \$500	510, 512, 55, 55, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Utilities - Electrica, Plant and KO Submersible Pampa Submersible Varbes Matern Matern Mac, Field Manthoola Plant Physics - Plant Brille Cono Inst. Punta Physic Cono Inst. Punta Physics - Plant Physics Pant Brille Cono Inst.	\$10,302 \$32,850 \$5,636 \$500 \$500 \$500 \$100 \$200 \$500 \$500 \$500 \$500 \$500 \$500 \$5	\$10,362 \$12,550 \$5,820 \$500 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$500 \$500 \$500 \$500 \$500	\$10,502 \$32,850 \$5,639 \$500 \$500 \$400 \$100 \$100 \$100 \$500 \$500 \$500 \$500 \$5	\$1,500 \$12,850 \$5,638 \$500 \$500 \$500 \$100 \$100 \$500 \$500 \$500	\$2,530 \$10,322 \$32,550 \$3,500 \$500 \$500 \$100 \$100 \$100 \$500 \$500 \$	\$2,450 \$16,362 \$3,635 \$5,635 \$500 \$500 \$500 \$100 \$100 \$100 \$500 \$50	\$2,450 \$16,362 \$12,550 \$5,880 \$500 \$500 \$100 \$100 \$100 \$500 \$500 \$50	\$2,450 \$10,362 \$32,650 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$500 \$5	\$1,002 \$12,850 \$5,650 \$5,650 \$500 \$400 \$100 \$100 \$200 \$500 \$100 \$100 \$100 \$100	\$15,302 \$12,850 \$5,056 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$100	\$10,592 \$32,650 \$5,696 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$500 \$100 \$200 \$500 \$100 \$500 \$100	510, 532, 53, 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Utilities - Electric, Plant and KO Submersible Annos Submersible Aloras Rate Poling & Valves Mascra Mascra Mascra Plant Price Con Itas. Part Price Son Itas. Part Price Con Itas. Part School Itas.	\$10,302 \$32,535 \$3,538 \$500 \$500 \$500 \$500 \$100 \$200 \$100 \$100 \$100 \$100 \$100 \$1	\$16,322 \$12,250 \$5,500 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$10,302 \$32,650 \$5,682 \$500 \$500 \$400 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100	2,450 \$10,302 \$20,059 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$2,450 \$16,352 \$57,250 \$5,655 \$5,655 \$5,000 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$	\$2,450 \$16,352 \$22,850 \$5,855 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,252 \$25,650 \$500 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$1,100	\$1,202 \$12,850 \$5,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$15,802 \$32,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$10,352 \$32,650 \$500 \$500 \$400 \$100 \$100 \$100 \$200 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	510, 532, 53, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Utilise - Electric, Plant and KO Submentible Jumps Submentible Moture - Ratel Poling & Velves Maters Maters Maters Man Poling & Velves Plant Bohe Cono Inst. Plant Bohe Cono Inst. Plant Bohe Sono Ins	\$10,302 \$32,850 \$500 \$500 \$500 \$100 \$100 \$200 \$50 \$500 \$500 \$500 \$500 \$500 \$50	\$16,382 \$20,550 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	\$10,302 \$22,650 \$5,699 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$2,500 \$10,302 \$22,850 \$500 \$500 \$100 \$100 \$100 \$2000 \$500 \$100 \$500 \$100 \$500 \$100 \$500 \$100 \$500 \$100 \$500 \$5	\$2,450 \$10,302 \$22,659 \$3,609 \$300 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2,450 \$16,322 \$22,850 \$30,035 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$10	\$2,450 \$10,822 \$32,850 \$500 \$500 \$100 \$100 \$200 \$200 \$200 \$100 \$200 \$100 \$200 \$2	\$2,450 \$10,852 \$20,656 \$500 \$500 \$500 \$100 \$100 \$200 \$100 \$100 \$100 \$100 \$1	\$100 \$10,502 \$22,850 \$500 \$100 \$100 \$100 \$200 \$100 \$100 \$100 \$1	\$10,302 \$22,850 \$5,000 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$	\$10,902 \$12,450 \$4,036 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$10, \$32, \$5, \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Utilities - Electric, Plant and KO Submersible Pumps Submersible Noture Rate Poling & Valves Matern Misc, Field Hant Poling & Valves Plant Poling & Valves Plant Brite Cono Inst. Pumps Pump Bet Clock Faltern Elegoration Ponds Roads Gas, OB, Greese	\$10,302 \$22,850 \$500 \$500 \$500 \$500 \$100 \$200 \$100 \$100 \$100 \$100 \$100 \$1	\$10,252 \$22,550 \$52,650 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$10,322 \$20,650 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$2,530 \$10,362 \$22,850 \$500 \$500 \$500 \$100 \$200 \$100 \$200 \$100 \$200 \$500 \$100 \$200 \$100 \$200 \$100 \$100 \$200 \$100 \$200 \$2	2,450 \$10,302 \$20,609 \$200 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,322 \$22,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$2,450 \$16,802 \$20,850 \$5,895 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$500 \$100 \$1	\$2,450 \$10,852 \$20,656 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	\$10,302 \$11,302 \$23,695 \$500 \$500 \$500 \$100 \$200 \$200 \$100 \$100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,000\$1,000 \$1,000\$1,000 \$1,000 \$1,000\$1,000\$100\$1,000\$100\$100\$	\$11,322 \$22,450 \$34,036 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	\$10,392 \$12,450 \$5,00 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$10, \$32, \$5, \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
Utilities - Electric, Plant and KO Subcrestible Jamps Subcrestible Jamps Subcrestible Valves Maise: Natorna Maise: Plant Pichog & Views. Plant Birts Cone Inst. Parts Birts Cone Inst. Cone Cone Cone Cone Cone Cone Cone Cone	\$10.302 \$22.850 \$500 \$500 \$500 \$500 \$500 \$100 \$500 \$100 \$500 \$100 \$500 \$5	\$10,302 \$20,050 \$5,059 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	\$10,322 \$22,850 \$300 \$300 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2,500 \$10,302 \$22,850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	2,450 \$10,302 \$22,650 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,322 \$20,850 \$200 \$200 \$400 \$200 \$100 \$100 \$100 \$100 \$100 \$100 \$1	22,450 816,852 832,856 85,886 8500 8500 8500 8500 8500 8500 8500 8	\$2,450 \$10,302 \$20,656 \$5,656 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$12,502 \$12,450 \$22,450 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$10,802 \$22,850 \$500 \$500 \$100 \$100 \$100 \$200 \$200 \$100 \$100 \$1	\$10,392 \$12,450 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	510, 532, 532, 54, 54, 54, 54, 54, 55, 55, 55, 55, 55
Utilities - Electrica Plant and RO Submersible Numps Submersible Noture - Ratel Poling & Valves Maters Maters Maters Maters Plant Ring & Valves Plant Ring & Valves Pl	\$10.362 \$22,850 \$5,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$10,322 \$22,550 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	\$10,322 \$22,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$10,302 \$10,302 \$2,639 \$500 \$500 \$500 \$500 \$100 \$100 \$200 \$500 \$100 \$200 \$500 \$100 \$200 \$500 \$100 \$200 \$500 \$100 \$200 \$500 \$500 \$500 \$100 \$500 \$500 \$100 \$1	2,450 \$10,302 \$2,500 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	\$2,450 \$10,382 \$20,850 \$20,655 \$200 \$200 \$100 \$100 \$100 \$100 \$100 \$1,150 \$100 \$1,150 \$100 \$1,150 \$100 \$1,15	\$2,450 \$16,822 \$20,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,302 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$10,502 \$10,502 \$22,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$113,822 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$10,252 \$12,252 \$5,035 \$500 \$500 \$100 \$100 \$200 \$100 \$100 \$100 \$100 \$1	310, 322, 33, 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3
Utilize - Electric Asart and KO Submersible Namps Submersible Namps Submersible Varies Maiora Maiora Maiora Maiora Plant Piping & Varies Plant Piping & Varies Plant Bohe Cono Inst. Plant Piping & Varies Plant Bohe Cono Inst. Plant Bohe Cono Inst. Cono Inst. Col Unit	\$10.302 \$22,850 \$5,658 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$5	\$10,302 \$2,050 \$5,000 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$(16,22) \$22,850 \$22,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$10,302 \$10,302 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,550 \$10,500 \$20,600 \$20,600 \$200 \$200 \$200 \$100 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$2	22450 \$16,342 \$22,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$2,450 \$16,822 \$20,850 \$5,895 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$10	\$2,450 \$10,342 \$22,650 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	\$11,302 \$11,302 \$12,850 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$11,302 \$22,850 \$5,508 \$5,000 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$	511,50 511,55 550,55 5500 5500 5000 5000 5000 5000 5100	310, 322, 322, 33, 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Utilities - Electric, Plant and KO Subcrenzible Parnpa Subcrenzible Moture Rate Plante & Valves Matern Milac, Field Milac,	\$10.302 \$22.850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$10,202 \$20,050 \$5,059 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	\$10,322; \$10,322; \$22,850; \$300; \$300; \$10	\$10,202 \$10,202 \$20,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$2,550 \$10,500 \$23,699 \$300 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2,450 \$16,342 \$22,850 \$25,655 \$25,655 \$2500 \$2500 \$2500 \$10000 \$1000 \$1000 \$1000 \$10000 \$1000 \$1000 \$1000 \$1000 \$	\$2,450 \$16,862 \$22,850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$2,450 \$10,362 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$12,502 \$12,450 \$22,450 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$11,500 \$20,000 \$20,000 \$200 \$200 \$100 \$100 \$100 \$100 \$100 \$	\$10,322 \$12,535 \$4,535 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$10	310 812 81 81 81 81 81 81 81 81 81 81 81 81 81
Utilities - Electrica Plant and KO Submersible Numps Submersible Noture - Ratel Poling & Valves Maters Maters Maters Maters Plant Ring & Valves Plant Ring & Valves Row Row Row Row Row Row Row Row Row Row	\$10.362 \$22,850 \$5,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$10,222 \$22,850 \$2,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$10,322, \$20,829 \$20,829 \$2000 \$200	\$10,302 \$10,302 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	2,450 \$10,302 \$2,609 \$500 \$500 \$500 \$500 \$100	\$2,450 \$16,382 \$20,850 \$20,655 \$200 \$200 \$100 \$100 \$100 \$100 \$1,150 \$100 \$1,150	\$2,450 \$16,822 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,302 \$22,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$100 \$10,202 \$22,850 \$500 \$500 \$500 \$500 \$100 \$500 \$500 \$5	\$11,322 \$22,850 \$2,850 \$2,850 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	511,252 54,253 54,253 5500 5500 5100 5100 5100 5100 5100 51	100 310 322 352 35 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Utilities - Electrica Plant and KO Subcremible Pumps Subcremible Motors Rate Poing & Valves Maters Maters Maters Plant Bins Cono Inst. Plant Bins Cono Ins	\$10.362 \$22.850 \$5.000 \$500 \$500 \$500 \$500 \$500 \$500	\$10,202 \$22,050 \$5,209 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$1100 \$100 \$1100 \$100 \$1100 \$1100 \$100 \$1100 \$1100 \$100 \$1100 \$1500 \$1000\$1000 \$1000\$1000\$1000\$1000\$1000\$1000\$1000\$10000\$10000\$1000\$1000\$1000\$1000\$1000\$1000\$1000\$10	\$10,223 \$22,820 \$32,820 \$3000 \$3000 \$4000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1,150 \$1	\$10,302 \$10,302 \$20,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$2,550 \$10,550 \$2,500 \$200 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	22450 \$10,322 \$22,850 \$500 \$500 \$500 \$500 \$100	\$2,450 \$16,822 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,342 \$22,650 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	\$11,302 \$11,302 \$12,850 \$1500 \$100 \$100 \$100 \$100 \$100 \$100 \$	\$11,322 \$22,850 \$5,509 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$10,200 \$10,200 \$5,000 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	110, 310, 332, 352, 35, 35, 35, 35, 35, 35, 35, 35, 35, 35
Utilizes - Electric Arant and KO Submersible Namps Submersible Namps Submersible Varies Helson Helson Plant Poing & Varies Plant Arbing & Veries Plant Arbing & Veries Plant Brite Cano Inst. Punga Plant Brite Cano Inst. Plant Brite Cano Inst. Plant Brite Brite Brite Brite Plant Brite Brite Brite Brite Plant Equip. Repairs & Maint. Vehicles - Nature Vehicles - Tractors & Trucks.	\$10.302 \$22.850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$10,202 \$20,050 \$5,050 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$	\$10,322; \$10,322; \$22,850; \$300; \$300; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$100; \$1,50; \$1,	\$10,202 \$10,202 \$20,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	* 4,450 \$10,500 \$2,500 \$200 \$200 \$200 \$200 \$200 \$100	\$2,450 \$10,342 \$20,850 \$20,850 \$200 \$200 \$100 \$100 \$100 \$100 \$100 \$10	\$2,450 \$16,822 \$12,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,302 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$12,502 \$12,450 \$22,450 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$11,500 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	\$10,320 \$10,320 \$2,530 \$2,530 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$1	110, 310, 332, 352, 55, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5
Utilizes - Electrics Plant and RO Subcreatible Pumps Subcreatible Pumps Subcreatible Varies Maisers Maisers Maisers Maisers Plant Point & Varies Plant Point & Varies Plant Point & Varies Plant Point & Varies Plant Point Plant Point Plant Point Plant Point Plant Point Row Plant Point Row Plant Point Row Plant Point Row Row Row Row Row Row Row Row Row Row	\$10.362 \$22,850 \$5,050 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	\$10,382 \$2,850 \$5,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$10,322 \$22,850 \$3000 \$3000 \$4000 \$100 \$100 \$100 \$100 \$100 \$100	\$10,302 \$10,302 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,302 \$2,659 \$500 \$500 \$500 \$500 \$500 \$100 \$100 \$100	\$2,450 \$16,382 \$20,850 \$20,850 \$200 \$100 \$100 \$100 \$100 \$100 \$100 \$10	\$2,450 \$16,822 \$20,850 \$500 \$500 \$500 \$200 \$200 \$200 \$200 \$2	\$2,450 \$10,302 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$100 \$10,202 \$22,850 \$3,400 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$11,322 \$22,850 \$2,850 \$2,850 \$2,000 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$	\$10,302 \$10,20,550 \$4,550 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$	110, 310, 35, 35, 5, 5, 5, 5, 5, 1, 5, 1, 5, 1, 5, 1, 5, 1, 5, 1, 5, 1, 5, 1, 5, 1, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,
Utilities - Electrics Plants and RO Submartities Namps Submartities Namps Submartities Namps Mathematities Natures Helder Plants Plants Plants & Valves Plant Plants & Valves Plants Plants & Valves Plants Plants Encouncies Plants Encouncies Plants Plants Encouncies Plants Pla	\$10.362 \$22.850 \$5.000 \$500 \$500 \$500 \$500 \$500 \$500	\$10,202 \$22,050 \$5,209 \$500 \$500 \$100 \$100 \$100 \$100 \$110 \$110	\$10,223 \$22,820 \$22,820 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$10	\$10,302 \$10,302 \$20,850 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	4,450 4,11,302 4,12,250 4,25,059 4,500 4,500 5,100	22450 \$10,342 \$22,850 \$500 \$500 \$500 \$500 \$100	\$2,450 \$16,822 \$20,850 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$1	\$2,450 \$10,342 \$22,650 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	\$113,922 \$122,850 \$3000 \$10000 \$1000 \$1000 \$1000 \$10000 \$1000 \$1000 \$1000 \$100	\$11,202 \$22,850 \$5,696 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$100	\$10,200 \$10,200 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	310 322 322 32 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Utilizes - Electrics Rists and RO Subcreatible Formps Subcreatible Formps Subcreatible Status Heisten Main, Field Hand Poing & Velves Heisten Partal Brite Cano Inst. - Partal Brite Cano Inst. - Partal Brite Cano Inst. - Parta Brite Status - Parta Brite Status - Narthy Total Cumulative Total - Parta Brite Cano	\$10.302, \$22,850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$10,202 \$20,050 \$1,000 \$500 \$500 \$500 \$500 \$100 \$100 \$100 \$	\$10,322, \$22,850 \$300 \$300 \$400 \$100 \$100 \$100 \$500 \$500 \$500 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,000 \$3,0000 \$3,000 \$3,0000 \$3,000 \$3,0000 \$3,000 \$3,000\$	\$10,302 \$10,302 \$20,850 \$300 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	*11302 \$11,302 \$12,2550 \$2000 \$500 \$500 \$500 \$100 \$500 \$100 \$200 \$1	\$2,450 \$16,3472 \$27,850 \$26,855 \$4000. \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$2,450 \$10,362 \$20,850 \$20,850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$2,450 \$10,302 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$113.02 \$113.02 \$127.855 \$1300 \$100 \$100 \$100 \$100 \$100 \$100 \$10	\$11,500 \$200 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$10,200 \$10,200 \$20,000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$2,000 \$1,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000\$1,000\$1,000\$1,000\$1,000\$1,000\$1,0	310, 32, 35, 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Utilities - Electrics Plants and RO Submartities Namps Submartities Namps Submartities Namps Maisers Maisers Maisers Maisers Plant Pointy & Valves Plant Brinty & Valves Plant Brinty & Valves Plant Brinty & Valves Plant Bouthout Roman Ro	\$10.362 \$22,850 \$5,000 \$500 \$500 \$500 \$500 \$500 \$500	\$10,202 \$2,250 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$500 \$100 \$1	\$10,302 \$22,850 \$300 \$300 \$4000 \$100 \$100 \$100 \$100 \$100 \$100 \$	\$10,202 \$10,202 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$100	41,502 \$10,500 \$10,500 \$100	\$2,450 \$16,3472 \$22,850 \$20,850 \$200 \$200 \$100 \$100 \$100 \$100 \$100 \$10	\$2,450 \$16,852 \$20,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$2,450 \$10,302 \$22,850 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$11,202 \$12,450 \$32,450 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$113,822 \$22,850 \$2,850 \$2,850 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$10,800 \$40,800 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	310, 322, 322, 32, 32, 32, 33, 34, 34, 34, 34, 34, 34, 34, 34, 34
Utilizes - Electrics Plants and RO Subcreatible Pumps Subcreatible Pumps Subcreatible Varies Halder Hand Poling & Varies Halder Plant Poling & Varies Plant Brock & Cook Plant Brock Rowch Cook Rowch Cook Rowch Cook Rowch Rowc	\$10.362 \$22.850 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$10,202 \$22,050 \$5000 \$5000 \$5000 \$5000 \$1000 \$1000 \$1000 \$1000 \$1150 \$1000 \$1,150 \$1000 \$1,150 \$100 \$1,150 \$100 \$1,150 \$100 \$1,500 \$100,207 \$150,000 \$150,207 \$150,2	\$10,225 \$22,850 \$3500 \$4000 \$100 \$100 \$100 \$100 \$200 \$100 \$100 \$	\$10,302 \$20,850 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$1	410.502 \$10.502 \$10.502 \$100 \$10	22450 \$10,342 \$22,850 \$500 \$500 \$500 \$500 \$100	\$2,450 \$16,852 \$20,850 \$500 \$500 \$500 \$500 \$500 \$100 \$100 \$1	\$2,450 \$10,342 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$50	\$113,922 \$122,850 \$3000 \$10000 \$1000 \$1000 \$10000 \$1000 \$1000 \$1000 \$1000 \$100	\$11,202 \$22,850 \$5,695 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$10	\$10,200 \$10,20,500 \$500 \$500 \$500 \$500 \$500 \$500 \$500	9700 8322, 85, 8 9 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8



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GPM RO Cepecity	580	680	680	580	680	~ 580	580	680	580	580	580	
GPM RO Product GPM RO Relact	484	484	484	484	484	484	484	484	454	484	404	
NGA Gats, RO Processed - Month	25,691,200	24,220,500	25,891,200	25,058,000	25,691,200	25,056,000	25,891,200	25,691,200	25,058,000	25,691,200	25,056,000	25.8
MM Gels, RO Permists - Month MM Cats: RO Relact - Month	20,712,900	19,376,640	20,712,950	20,044,600	20,712,000	20,044,800	20,712,960	20,712,950	20,044,800	20,712,960	20,044,800	20,7
the Concentration						0,011,200	0,110,210	0,110,240	5,011,200	0,178,240	0,011,200	. 0, 1
GPM BC Capacity GPM Distillate	125	125	125	125	125	-125	125	125	125	125	125	
GPM Brine	2.6	2.5	2.5	,2.5	2.5	2.5	2.5	2.5	25	2.5	2.5	
NM Gata, BC Capacity - Month MM Gata, Distillate - Month	5,550,000	6,220,000	5,550,000	5,400,000	5,580,000	5,400,000	5,680,000	5,580,000	5,400,000	5,580,000	5,400,000	6,5
MM Gais, Brine - Month	111,600	104,400	111,600	108,000	111,600	108,000	111,600	111,600	168,000	111,600	108,000	8,0 †
Beginning Gallons (9 PV Eq.)	1.169.512.294	1,163,732,694	1.139.010.294	1,113,838,694	1,085,885,694	1.053 109 094	1.035 161 094	1 012 381 494	830 601 894	001 053 004	015 874 304	.010.0
Beginning PV	5.09	4.88	4,68	4,77	4.00	4.55	4.44	4.33	4.22	4.12	4.01	
PV Processed Month	0.11	24,110,400	25,770,600	24,943,000	25,770,600	24,948,000	25,779,600	25,779,600	24,948,000	25,770,800	24,948,000	25,7
Cumulative Gallons Processed	938,878,400	962,992,800	\$88,772,400	1,013,720,400	1,039,500,000	1,054,448,000	1,090,227,600	1,118,007,200	1,140,955,200	1,100,734,800	1,191,682,600	1,217,4
Cumpletove PV Processed Remeining Gallans to Process	4.92	4,12 1,139,618,294	4.23	4.34	4.45	4.55	4.87	4.78	4.88	4.99	5.10	
Remaining PV to Process	4.68	4.60	4.77	4.05	4.55	4,44	4.33	4.22	4,12	4.01	3.90	1063,1
STIMATED COST DETAIL												
Description	GW Re	storistion Operation	14					GW Resto	ration Operations-			
Ratadas Direct	692.250	. 812 250		(12) (12)								
Wages-Direct	\$10,487	\$10,487	\$10,487	\$10,407	\$10,487	\$10,487	\$10,487	\$10,487	\$10,487	\$10,487	812,250	5
Insurance-Workmans Compensation	81,363	\$1,568	\$1,368	\$1,358	\$1,355	\$1,358	\$1,358	\$1,368	\$1,368	\$1,368	\$1,353	Ĩ
Medical Insurance	84,274	\$4,274	\$4,274	84,274	84,274	84,274	\$4,274	\$2,892 \$4,274	\$4,274	\$2,992	\$2,992	
401K Contributions	\$1,053	\$1,058	\$1,068	51,053	\$1,058	\$1,058	\$1,058	\$1,058	\$1,085	\$1,058	\$1,058	
Pestace/Fosiciti	\$1,250	\$1,250	\$1,250	\$1,200	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	81,250	\$1,250	:
Copy Equipment	8300	\$300	\$300	\$300	8300	\$300	\$300	\$300	8300	\$300	\$300	
Other Equipment & Kentel Office Supplies	\$250	\$250	\$250	\$200. \$250	\$250	8200	8200	8200	8200	\$200	\$200	
Office Equipment Maintenance	\$50	\$50	\$50	850	\$50	\$50	\$50	\$50	\$50	\$50	\$50	
Calls Processing Maps	\$150	\$150	\$150 \$50	\$150	- \$150 \$50	\$150 1\$50	\$150	\$150	-\$150	\$150	\$150	
Orating & Printing	\$50	\$50	\$50	850	\$50	\$50	\$50	\$50	\$50	\$50	-\$50	
Instance and Area Car Manis & Entertainment	8200	8200	\$200	\$850 \$700	\$850	\$850 \$200	\$850	\$850	8850	\$850	\$850	
Misc. Travel Expense	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	
Env-Orgendianal Analyses	\$100	\$100	\$100	\$100 \$2,000	312,000	\$100 \$2,000	\$100	\$100 \$2,000	S100	\$100	\$100	
Environmental - Miscellaneous	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	
Safety Bachter Maintenace	8250	\$250	\$250	\$250	\$250	\$250	8250	8250	8250	\$250	8250	
Mise. Chemicals	\$2,450	\$2,450	\$2,450	\$2,450	\$2,450	\$2,450	87.450	\$700	\$700	\$700 \$2,450	\$700 \$7.450 /	
Utilities - Electric, Welflets	\$10,362	\$15,302	\$10,302	\$10,302	\$18,302	\$16,362	\$10,302	\$16,302	\$16,382	\$18,302	\$15,302	
Utilities - Electric, Plant and RO	\$5,690	#32,850 \$5,695	\$5,690	\$5,695	\$32,850 \$5,690	\$32,850	\$32,850 \$5,850	\$32,650	\$\$2,650 \$5,60P	\$32,850	\$32,850	4
Submarsible Pumpa	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
Field Piping & Verves	\$500	\$500	\$500	\$500	\$500	\$500 MOD		8500	\$500	- \$500	\$500	
Metars	\$50	\$50	\$50	\$50	\$50	\$50	\$50	-\$50	\$50	\$50	\$50	
struc, Fisto Handtoola	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	-\$100	\$100	\$100	
Plant Piping & Valves	\$200	-\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$100- \$200-	
Plant Brine Contribut.	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	
Plant Electrical	\$100	\$100	\$100	\$100	\$100	\$100	\$100, \$100	5500 5100	\$100	\$300 \$100	\$500 \$100	
Filters	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	
Roads	\$100	\$100	8100	500 \$100	530 \$100	· 650 \$100	800° 8100	\$50 \$100	550 5100	\$50 \$100	\$50	
Gas, OL, Gresse	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	.\$1,150	\$1,150	
RO Unit	8250	\$0,201 \$250	80,291	80,291 8250	\$1,291 \$250	\$8,291 \$250	\$3,291 \$250	\$5,291	\$8,291 \$250	· \$8,291 £751	\$8,291	
Leb Supplies	8100	\$100	\$100	\$100	\$100	\$100	8100	\$100	\$100	\$100	\$100	
Field Ecolo, Receive & Maint.	\$3,000 \$150	\$3,000 \$150	\$1,000	\$3,000 \$150	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	
Veticia Repairs & Matrit.	\$550	\$550	\$550	\$550	\$550	\$550	\$350	\$550	\$550	- \$550	\$550	
Vehicles - Pickups Vehicles - Tractors & Tractor	\$500	\$500	8500	8500 81.000	18500	6500	.8500	8500	8500	- 8500	\$500	
Vehicles - Astomobiles	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	81,000	
Advertisian Textual			- 23.00									_
	A 1.33.43	a 130.20/	a 130,207	a130,207	a130,207	a130,207	8130.287	\$136,287	3133,257	3130,287	3130,267	
Cumulative Total	\$5,042,615	\$5,178,903	\$5,315,190	\$5,451,477	\$5,587,704	85,724 051	\$1 860 334 ·	\$5,000,024	88 132 012	\$5,289 105	SE 405 485	6A #

CROWNPOINT SEC, 24 G	ROUNDWATE	R RESTOR	TION AND	DECOMMIS	SIONING CO	OSTS					Novacabar 18, 200	n
COSTS ASSOCIATED WIT	TH RO AND BR	UNE CONCI	ENTRATION	OPERATIC	N AND MAI	NTENANCE						
Period	1/5	2/5	2/5	445	8/5	6/5	7/1	<u>8/5</u>	9/5	10/5	11/5	12/6
Operations Manager	1:	1	•	1	1	1	,			1	1	
Environmental Manager	1	1	1.	1	1	45	1	1	1	1	1	
Cant Personnel								•	•	•		
Chemist	i .	i.	i	i	i	i	i	i	i	· · · ·	i	
Electrician Marie Committee	:	1	1	I'		1	:	1	:	1	1	
Nutrield Personnel	•	•	•		•	•	•	•	•	•	•	
Foreman		1	1.	1'	1	\$	1	1	ť	1	1	
Truck Orver	2	-1	1.	1	1	1	:	1	T t	1	:	
Pump Holst Operators	i	1	i	÷	i		i	i	i .	i	i	
ngineering & Geologio Personnel												
Senior Geologist	1	1	1.	.1.	1	1	1	1	1	1	1	
tal Employees	8 11	11	-11	11	- 11	11,	11	11	-11:	11	-11	
erations Statistics												
Agree Ostmosts Treatment	SAA -	680	680	540	680	640	580	580	680	680	680	
GPM RO Product	484	604	404	484	404	404	454	464	484	404 *	484	4
GPM RO Reject	116	110	110	118	110	118	118	,118	118	118	118	
MM Gata, RO Processed - Month MM Gata, RO Permisia - Month	20,661,200	19,376,640	20,712,000	20,044,800	20,044,600	20,044,800	20,044,800	20,056,000	20,056,000	23,038,000	25,056,000	25,055,0
MM Gala; RO Reject - Month	5,178,240	4,844,180	5,178,240	5,011,200	5,011,200	5,011,200	6,011,200	5,011,200	5,011,200	5,011,200	5,011,200	5,011,2
te Concentration			-			-			10¢		404	
GPM Distiliate	113.6	113,5	113.6	112.5	112.6	113.5	113.5	112.5	125	113.5	113.6	915 - 1915
GPM Brine	2.5	2.6	26	25	2.6	2.5	2.5	2.5	2.5	2.5	25	
MM Gets, BC Capacity - Month. MM Gets, Distillate - Month	5,580,000	6,220,000 4 739 760	5,580,000	6,400,000	5,400,000	5,400,000	5,400,000 4 903 200	6,400,000	5,400,000	5,400,000 4,903,200	6,400,000	6,400,0
MM Gels, Brine - Month	111,600	194,400	111,600	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,0
Cess Results;					784 677 004	750 675 004	704 007 004	700 070 004	ania 734 601		-	
Beginning Gellons (9 PV Eq.) Beginning PV	3.70	3.68	3.55	3.48	230	-3.25	3.14	3.04	2.93	2.82	2,72	2/
Gallons Processes Month	25,779,600	24,110,400	25,779,600	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,0
PV Processed Month	0.11	0.10	0.11	0.11	1.343 (74 000	0.11	0,11	0.11	0.11	.0.11	0.11	0
Cumulative PV Processed	5,32	5.42	5.54	5.64	5.75	6.85	5.98	6.07	0.18	8.28	0.39	-1,017,070,0 8.
Remetaing Galloos to Process	859,357,094	635,250,694	609,471,094	784,623,094	769,575,094	734,627,094	709,079,094	684,731,094	659,783,094	634,635,094	609,687,094	584,939,0
Remaining PV to Process	3.55	3.68	3.45	3.35	3.25	3,14	3,04	2.60	2.62	2,72	2.61	2.
a series a field of the series												
Description .	-				GW Resturation O	perctions						
Satarias-Direct	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,250	\$32,2
Wages-Direct	\$10,487	\$10,487	\$10,487	\$10,487	\$10,487	\$10,487	810,487	\$10,487	\$10,487	\$10,487	\$10,487	810,4
- Pavroli Taxes	81,355	81,308 82,902	81,300 82,992	81,308 87,907	81,300 82,000	81,858 82 822	81,358 \$2,892	\$1,300 \$2,000	81,300 <u>82,00</u> 2	\$1,808 (12,002	\$1,308 \$2,907	\$1,3 \$2 0
Medical Insurance	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4.2
401% Contributions	\$1,058	\$1,068	\$1,068	\$1,058	\$1,058	\$1,058	\$1,068	\$1,058	\$1,068	\$1,058	\$1,058	\$1,0
i exeptionar Tetegreph Postaon/Freidit	\$1,250 \$150	\$1,200	\$1,250, \$150	\$1,250 \$150	\$1,250	\$1,250 \$150	\$1,250 .\$150	\$1,250 \$150	\$1,250 £150	\$1,250*	\$1,250 £150	51,2 Ar
Copy Equipment	\$300	\$300	\$300	\$300.	\$300	\$300	8300	\$300	\$300	\$300	\$300	
Other Equipment & Rentel	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	\$200	\$200	\$200	
Office Eculoment Metatenence	8/30	#200 \$50	\$50 \$50	\$250 \$50	\$230 \$50	800 80	850	8200 850	800.4 622	3250 	8250 250	112
Data Processing	\$150	\$150	\$150	\$130	\$150	\$150	8150	\$150	\$150	\$150:	\$150	81
Maps	\$50.	\$50	\$50	\$50	\$50	\$50	- \$50	\$50	\$50	\$50	\$50	1
Drating & Printing Transportation - Air & Car	\$50	\$50	\$50	\$850	\$50 \$550	100. 2850	\$30	\$50	\$850 \$850	830	550	
Ments & Entertainment	\$200	\$200	8200	\$200	8200	\$200	8200	\$200	\$200	8200	\$200	
Miso. Travel Expense	-\$300	\$300	\$300	.\$300.	\$300	\$300	\$300	\$300	\$300	8300	\$300	\$
Env-Operational Analysian	81.00 82.000	82.000	\$100 \$2,000	\$2.000.	82.000	100 12,000	00160	5100 52,000	\$100 \$2,000	\$2,000	2014 2000 52	51 101
Environmental - Miscellananua	\$200	8200	\$200	\$200	\$200	\$200	\$200.	8200	\$200	. \$200	\$200	
Bataty	\$250	\$250	\$250	8250	\$250	8250	8250	\$250	\$250	\$250	\$250	\$7
micanoe Manananoe Mise, Chemicata	\$2,450	\$700	\$700 \$2,450	\$2,450	\$700 \$2,450	8700 82,450	8700	\$700	\$700 \$2,450	8700 62.456	\$700 \$2,450	ະ ເ
Utilias - Electric, Weltield	\$15,382	\$16,382	\$10,382	\$15,382	\$10,302	\$10,302	\$16,302	\$10,302	\$10,382	\$18,302	\$10,302	\$10,
Utilities - Electric, Brine Concentrator	\$32,650	\$32,650	\$32,850	\$32,850	\$32,450	\$32,850	\$32,850	\$12,850	\$32,850	\$32,630	\$32,850	832.0
Submersible Pumpe	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	1500	\$500	- a0,0 - <u>8</u> .1
Submersible Motors	. \$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
Field Piping & Valves	\$400.	8400	8400	\$400	\$400	\$400	\$400 ·	\$400	\$400	\$400	\$400	. 5
Mino, Field	8100	\$100	\$100	\$100	\$100	,830 \$100	\$100 -	\$100	8100	\$100	\$100	5
Handtoola	\$100	\$100	\$100	\$100	8100	\$100	8100	\$100	\$100	\$100	\$100	i
Plant Piping & Valves	\$200	-\$200	8200	\$200	\$200	\$200	6200 (esc)	\$200	8200	\$200	\$200	
Pueses	\$500	8500	8500	8500	8500	8500	8500	8500	8500	\$500	\$500	2
Plant Electrical	\$100	\$100	8100	\$100	\$100	\$100	\$100	8100	\$100	8100	\$100	
Filters	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,100	\$1,
Randa	\$100	400 .\$100	\$100 \$100	8100	\$100	\$100	\$100	\$100	\$100	\$190	\$100	
Gas, Cil, Greene	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	\$1,150	. \$1,150	\$1,150	\$1 ,
Disposal - B.C. Solids	\$8,291	\$8,291	\$8,291	\$8,291	. \$8,291	\$8,291	88,291	\$8,291	\$5,291	\$8,291,	\$8,291	54
Leb Supplies	\$250	\$100	\$100	\$100 ·	8100	\$100	\$100	84250 \$100	\$100	\$100	8250 \$100	1
RO Membrana	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	
Field Equip. Repeirs & Maint.	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	1
Vatecie Repairs & Maint. Vaticies - Ficture	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	8550	\$550	5
Valicies - Tractors & Trucks	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1.000	\$1,000	81
Vahicles - Automobiles	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
Marcallaha Tantad					9400 00-			e	e			
nearuity, I con Cumulative Totel	\$130,207 \$5,675,059	a130,207 \$5,614,344	#130,257 \$8,050,633	87,055,020	#130,267 \$7,223,207	8130,207 87,350,604	8120,287 87,495,781	#130,287 \$7,632.068	0130,207 \$7,764,155	\$135,257 \$7,904,643	8130,257 \$8,040,929	\$130,2 (88,177)
Period Days	-31	29	-31	30	30	30	30	30	30	30	30	
•									•			

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2	Operations Manager	1	1										
.3 	Environmental Manager	1.	1										
5	Radiation Officer	1	۲										
6 1	Chemist	1	· • •										
1	Electrician.		1										
	Uffeld Personnel		•										
10	Foreman		- 1										
11	Truck Driver	1	1										
12	Pumo Hoist Operators	i i	1										
14 En	gineering & Geologic Personnel												
15	Senior Geologist	1	1										
15,	(12)												
17 70	tel Employees Fill Statta	11.	11										
10 00	Antipes Statistics & Parking and												
20 Rm	rerse Osmosis Trestmant												
21	GPM RO Capacity	580	580	880	580	680	680	580	560	580	580	580	680
22	GPM RO Product	454	404	404	404	454	464	484	454	454	484	454	484
24	NM Gata, RO Processed - Month	25,055,000	25,058,000	25,050,000	25,058,000	25,058,000	25,056,000	25,058,000	25,055,000	25,058,000	25,058,000	25,038,000	26.058.000
.26	NH Gais, RO Permiste - Month	20,044,800	20,044,800	20,044,800	20,044,000	20,044,600	20,044,800	20,044,600	20,044,600	20,044,000	20,044,600	20,044,600	20,044,800
20	NON Gala, KD Kenet - Month	5,011,200	3,011,200	5,011,200	5,011,200	5,011,200	5,011,200	5,011,200	6,011,200	5,011,200	5,011,200	5,011,200	6,011,200
28	GPM BC Capacity	125	125	125	125	125	125	125	125	125	125	.125	125
29	GPM Distillate	113.6	113.5	113,8	113.6	111.6	118.5	113.6;	113.5	113.6	113.5	113.5	113.5
30	GPM Bine MAGes RC Canadia Month	5 400 000	5 400 000	5 400 000	2.5	5,400,000	5.400.000	5,400,000	2.5	5 400 000	5.400.000	2.5	5.400 000
32	Mild Gala, Distillate - Month	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200	4,903,200
33	Mod Gate, Brine - Month	108,000	108,000	108,000	103,000	108,000	108,000	108,000	108,000	108,000	168,000	108,000	108,000
34 (P10 35	Becknike Gellons (9 PV Eq.)	584,939,094	559,991.094	535.043.094	510,085,094	485,147.094	400,109.094	435,251,094	410,303.094	385,355,094	360,407.094	335 450 004	310.511 094
36	Beglaning PV	2.50	2,40	2,29	2,18	2.05	1.07	1.68	1.78	1.65	1.54	1.44	1,23
37	Gallons Processes Manth DV Docessed Month	24,948,000	24,948,000	24,648,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000
39	Cumulative Gallons Processed	1,542,618,000	1,667,588,000	1,592,514,000	1,617,482,000	1,642,410,000	1,687,358,000	1,692,308,000	1,717,254,000	1,742,202,000	1,787,150,000	1,792,098,000	1,817,048,000
40	Cumutative PV Processed	0.60	6.71	6.62	0.92	7.03	7.14	7.24	7.35	7,48	7.58	7.87	7.78
41	Remaining Galions to Process Remaining DV in Process	009,991,094	535,043,094	510,095,094	485,147,094	460,189,094	435,251,094	410,303,094	365,355,094	360,407,094	335,459,094	310.511,094	285,563,094
43 ES	TIMATED COST DETAIL												1.44
44	and the second												
45	Description			W Restoration Op	erationa							GW	Castoration Oper
47	Salarica-Direct	\$32,250	\$32,250	\$8,750	\$8,750	\$8,750	88,750	\$8,750	\$8,750	\$8,750	\$5,750	\$8,750	\$8,750
48	Wegas-Cirect	\$10,487	\$10,487	80	\$0	\$0	.\$0	60		50	. 80)	:80	80
49	Insurance-Workmans Compensation	\$1,363	\$1,305	\$280	8280	\$250	\$250	\$250	\$280	\$250	\$250	\$280	\$280
51	Medical Insurance	\$4,274	\$4,274	\$875	\$875	\$875	\$875	\$875	\$875	\$575	\$875	\$875	\$875
52	401K Contributions	\$1,008	\$1,055	\$219	\$219	\$219	\$8219	8210	\$219	\$219	\$219	. \$219	\$219
53. 54	Telephone/Telegraph Postage/Fedicity	(\$1,250)	\$1,250	. \$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250
56	Copy Equipment	\$300	\$300	\$300	\$300	\$300	\$200	:\$300	\$300	\$300	\$300	\$300	\$300
50	Other Equipment & Rental	\$200	\$200	\$200	\$200	\$200:	\$200	\$200	\$200	\$200	\$200	\$200	\$200
57	Office Supplies	\$250	\$250	\$250	8250	\$250	8250	\$250	\$250	\$250	\$250	\$250	\$250
59	Data Processing	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150
.50	Maps	\$50	\$50	\$50	\$50	\$50	-\$50	\$50	\$\$50	\$50	\$50	\$50	\$50
61	Dratting & Printing Transportation - Air & Car	:\$850	\$30	\$850 \$850	8850	\$50 \$850	8850	\$30	.550	- \$50	\$50	\$50	\$50
63	Mesia & Entertainment	\$200	\$200	\$200	\$200	\$200	\$200.	\$200	\$200	\$200	\$200	\$200	8200
84	Misc. Travel Expense	\$300	\$300	8300	\$300	\$300	8300	8300	\$300	8300	\$300	\$300	\$300
65	Env-Operational Analysis	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$100 \$2,000	S100 \$2,000
87	Environmental - Miscellandous	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	.\$200
68	Basaty .	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
C9	Backhoe Maktenance	\$700	\$700	\$700	\$700	\$700	\$700	, 8700 82,450	\$700	\$700	\$700	\$700	.\$700
.71	Utilities - Electric, Wellfield	\$16,362	\$16,302	\$18,382	\$10,382	\$18,382	\$15,362	\$18,362	\$10,382	\$18,382	\$10,362	\$16,302	\$16,362
72	Utilities - Electric, Brine Concentrator.	\$32,650	\$32,850	\$32,850	\$32,850	\$32,850	\$32,650	\$32,850	\$32,850	\$32,850	\$32,850	\$32,850	\$32,850
74	Submenible Pumps	\$500	\$500	\$500	\$500	\$500	\$500	8500	\$500	\$500	5500	30,690	30,000
75	Submersible Motors	\$500	\$500	\$500	8500	\$500	\$500	-8500	\$500	\$500	\$500	\$500	\$500
78	Field Piping & Velves	\$400	\$400	\$400	\$400	8400	\$400	\$400	\$400	\$400	\$400	8400	\$400
78	Nilso. Field	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	(ang) \$100
79 -	Hendlocts	\$100	\$100	\$100	8100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
-60	Plant Piping & Velves Blast Prine Cong last	\$200	\$200	(\$200)	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	8200;
62	Pumps	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
-83	Plant Electrical	\$100	-\$100	8100	\$100	\$100	\$100:	\$100	\$100	. \$100	8100	\$100	\$100
85	Franciation Ponds	\$1,100	81,100	\$1,100	37,100	\$1,100	\$50	\$1,100	31,100	31,100	. \$1,100	. \$1,100	81,100
68	Rosts	\$100	\$100	\$100	\$100	\$100	-\$100	\$100	8100	\$100	\$100	\$100	\$100
67	Gas, Oli, Gress	\$1,150	\$1,150	\$1,150	\$1,150	81;150	81,150	81,150	\$1,150	\$1,150	\$1,160	\$1,160	\$1,350
89	RO Unit	\$250	8250	\$250	\$250	aq,20/1, 8250	8250	8250	8250	30,231 <u>\$25</u> 0	\$0,011 \$250	36,291 <u>82</u> 50	35,291
90	Leb Supplies	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	8100	\$100
91	RO Membrane Elist Forda Densira & Maint	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	.\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
93	Vehicle Repairs & Maint	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	- 3150
64	Vahicias - Pickups	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
95	Vehicles - Tractors & Trucks	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	,\$1,000	\$1,000	\$1,000
97	A STITTER - VIENLINGTIER	9006	\$300	(\$300	8006	2000	-200	2000	2000	\$600	3000	\$200	8500
98	Monthly Total	\$120,287.	\$138,287	\$94,685	\$94,585	\$94,585	\$94,585	\$94,585	\$94,585	\$94,585	\$94,685	\$94,585	\$04,585
99 100	Cumulative Total Period Dava	. \$5,313,502.	\$8,449,789 \$0	\$8,544,374	\$8,638,059	\$8,733,544 90	\$5,628,129	\$8,622,714	\$9,017,298	59,111,683	59,208,488	\$9,301,053	\$9,395,638
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1.1.1.1.1.1.1.1				•									
1.2.2.2	ROWNER ENG ACCOUNTING												
.2	Operations Manager												
3 	Envourmentel seanager,												
4 (*)	IN PRIMINAL												
5	Radiation Officer												
6	Chemist												
7	Electricien												
9. Carlos	Mant Operator												
-9 Min	meld Personnel Augustanting												
10	Foruman												
ť	Truck Driver												
2	Weilfield Operators -												
3.	Pump Holst Operators												
4 Eno	Insering & Geologic Personnel												
	Dening Classicalet												
19	Senior Geologia												
10 17. Tan	el Principalities												
18													
9 Opt	wathous Statistics												
D Revi	area Campata Trectment						,						
1	GPM RO Capacity	560	560	660	580	680	580	560	580	580	660	560.	680
2	GPM RO Product	404	404	464	464,	464	464.	-404	- 404	484	464	-454	464
3	GPM RO Reject	. 110	118	116	- 116	116	115	118	116	116	118	110	118
4	MM Gets, RO Processed - Month	25,058,000	25,056,000	25,056,000	25.055.000	25.058.000	25,058,000	25,058,000	23,058,000	25,058,000	25 055 000	25,058,000	25,056,000
5	MM Gada, RO Panniata - Month	20.044.800	20.044,800	20,044,800	20.044.800	20.044.000	20.044.800	20 044 600	20.044.800	20 044 000	20 044 600	20 044 800	20.044.800
8	MM Gets, RO Rejuct - Month	6,011,200	6,011,200	5,011,200	6,011,200	6,011,200	5,011,200	6.011.200	5.011.200	5.011.200	6,011 200	6011 200	6.011 200
7 Brin	Concentration									0000		w,W11,400.	0,011,400
	GPM BC Cenerity	125	125	125	125	195	125	194	434				. خدر و
	GPM Ofstillats	412.6-	113.6	113.6	411.4	.412 4.	445.6	449 #	444 		140	140,	125
5	GPM Artna		24	24		10.0	114.0	-110.0	112.0	114.0	112.5	113,5	113,5
a.	MM Gets BC Capacity - Month	540000	6 400.000	5400.000	- 5 4MD 000	5,000,000	6 400 000	- 6 4 MA	E / m	£.0		2.5	2.5
	MM Cals - Distillate - Month	4 000 000	4 003 000	4 000 000	4 000 000	4 (100 000	4,000,000	4,000,000	0,400,000	5,400,000	1,400,000	5,400,000	0,400,000
	MM Cale Drive Month	1000,000	400 000	400.000		7,903,200	-,003,200	4,803,200	9,003,200	4,803,200	4,603,200	4,903,200	4,903,200
- 	man salat, print + month	100,000	108,000	. 199,000	103,000	.108,000	108,000	108,000	:108,000	105,000	108,000	108,000	106,000
- 1100		and such sizes	الاشترامية معتم			in a second second				14.10			
• ·	segunting Gallons (9 PV Eq.)	285,663,094	260,615,094	235,667,094	210,719,094	185,771,094	150,823,004	135,675,094	110,927,094	85,979,094	61,031,094	38,083,094	11,135,094
5	Beginning PV	1.22	1,12	1.01	0.90	0.80	0,69	0.58	0.47	0.37	0.26	0.15	0.05
7	Gallons Processes Month	24,948,000	24,948,000	24,048,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948,000	24,948.000	24,948 000
8	PV Processed Month	0.11.	0.11	0.11	0,11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	£ 11
9	Cumulative Galions Processed	1,841,994,000	1,808,942.000	1,891,690.000	1,916,838,000	1,941,788.000	1,968,734.000	1,991,882,000	2,016,630,000	2.041.578.000	2 008 626 000	2.001 474 000	2 118 499 000
0	Cumulative PV Processed	7.88	7.69	6.10	8.20	8.31	8.43	8.53	8.61	£ 74	8.54	8.05	
1	Remaining Gallons to Process	200.015.094	235.657.094	210,719,004	185 771 094	150 (23 004	125 875 004	110.977 004	85 070 004	61 001 004	30.001.004	C8.0	10.00
2	Remeining PV to Process	1 42	101	000	0.80	0.000	100,070,080		A 47	-01,031,044	40,044,044	11,163,004	·10,012,900
	MATED COST DETAIL	1. H.	j. u i		.0,40	0.08	0.00	-0.47	0.37	0.25	0.15	0.05	-0.00
्रद्यु	HEAT CU LUG I DETAIL												
4	· · · · · · · · · · · · · · · · · · ·												
5	Description to	008							GW Restoratio	n Operations			
6	·						•						
7	Satarias-Direct	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	\$8,750	13,750	\$8 760
a	Wagas-Direct	80	80	80	80	\$0	50	\$0	80	50	: 20	TT	
9	Insurance Workmans Companiation	\$280	12280	\$280	1000	19280	\$760	8780	2384	-	6360		
ñ	Permit Teves	58/1	5845	. 6843	6446	6610		ec	0030	8450	\$c00	8200	8200
	Fugener Filler	8013	- 90.19	3018	3013	3013	1013	\$013	8013	:\$013	8813	\$613	\$613
1			\$010	80/5	30/6	8010	\$876	\$075	\$875	\$875	\$675	\$875	\$875
ad in	AUTA CONTINUONS	5219	3210	8219	\$219	\$3/0	\$219	\$210	\$219	\$219	8219	\$219)	8219;
	rembinguer reduitou	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250	\$1,250
4	Postaga Freight	\$150	.\$150	\$150	\$150	\$150	;\$150.	\$150	\$150	\$150	\$150	\$150	\$150
5	Copy Equipment	\$300	\$200	- \$200	\$200	\$300	\$300	\$300	\$300	\$300	\$300	\$300	
8	Other Equipment & Rental	\$200	\$200	\$200	\$200	\$200	\$200	8200	\$200	\$200	\$200	\$200	\$200
7.	Office Supplies	\$250	\$250	\$250	3250	8250	\$250	\$250	\$250	\$250	\$250	8250	2360
á	Office Equipment Maintenance	-850	\$50	\$50	150	250	100	250	100	204	254	1450	0000
ē.	Osta Processing	\$150	\$150	\$150	\$150	\$150	\$160	2157	1185	2164	- 4424	400	
6	Marca	1850	250	250	100	200	200	0100	0100	9130	9120	3100	.\$150
ſ	firefline & Edular		906	006	800 Jaco	006	600	045	. 680	550	\$50	88A	\$50
	Tennengenteting Air & Con		000	906	906	; 600		(ap0	330	350			***
4	Instagonadon - Alf & Gar	and the second se				60 mm		A			\$50	\$50	
3	MARIE & ENTEREDITION		9000	\$250	\$150	\$850	\$850	\$850	\$850	\$850	\$50 \$850	, \$50 \$850.	\$850
	San a Canada Canada a	\$200	\$200	\$250	\$850 \$200	\$850 \$200	\$850 \$200	\$850 \$200	\$850 \$200	\$850, \$200	\$850 \$850 \$200	, \$50 \$850. \$200	\$850 \$200
5	MINU HINTER CAPACIDA	\$200 \$300	\$200 \$300	\$200 \$200	\$850. \$200 \$300	\$250 \$200 \$300	\$850 \$200 \$300	\$850 \$200 \$300	\$850 \$200 \$300	\$850 \$200 \$300	\$50 \$850 \$200 \$200	, \$50 \$850. \$200 \$300	\$850 \$200 \$300
	Env-Depreciable Equipment	\$200 \$300 \$100	\$300 \$300 \$100	\$200 \$300 \$100	\$850 \$200 \$300 \$100	\$250 \$200 \$300 \$100	\$850 \$200 \$300 \$100	\$850 \$200 \$300 \$100	\$850 \$200 \$300 \$100	\$850, \$200 \$300 \$100	\$50 \$850 \$200 \$200 \$200 \$100	, \$50 \$850 \$200 \$300 \$100	\$850 \$200 \$300 \$100
6	Env-Depreciable Equipment Env-Operational Analyses	\$200 \$300 \$100 \$2,000	\$200 \$300 \$100 \$2,000	\$250 \$200 \$300 \$100 \$7,000	\$850 \$200 \$300 \$100 \$2,000	\$250 \$200 \$300 \$100 \$2,000	\$450 \$200 \$300 \$100 \$2,000	\$850 \$200 \$300 \$100 \$2,000	\$850 \$200 \$300 \$100 \$2,000	\$850, \$200 \$300 \$100 \$2,000	\$50 \$850 \$200 \$200 \$100 \$2,000	, \$50 \$\$50 \$200 \$300 \$100 \$2 000	\$100 \$100 \$100 \$100
6 7	Env-Operational Analyses Env-Operational Analyses	\$200 \$300 \$100 \$2,000 \$200	\$150 \$200 \$300 \$100 \$2,000 \$2,000	\$250 \$200 \$300 \$100 \$7,000 \$200	\$450 \$200 \$100 \$100 \$2,000 \$200	\$250 \$200 \$300 \$100 \$2,000 \$200	\$450 \$200 \$100 \$2,000 \$2,000	\$850 \$200 \$300 \$100 \$100 \$2,000 \$200	\$850 \$200 \$300 \$100 \$2,000 \$200	\$850 \$200 \$300 \$100 \$2,000 \$2,000	\$50 \$850 \$200 \$100 \$100 \$200 \$200	\$50 \$850 \$200 \$300 \$100 \$2000	\$200 \$200 \$100 \$100 \$2,000
6 7 8	Env-Cepreciable Equipment Env-Cepreciable Equipment Environmental - Miscellaneous	\$200 \$300 \$100 \$2,000 \$2,000 \$2,000	\$150 \$200 \$100 \$2,000 \$2,000 \$2,000	\$250 \$200 \$100 \$2,000 \$2,000 \$200	\$450 \$200 \$100 \$100 \$2,000 \$2200	\$250 \$200 \$300 \$200 \$200 \$200	\$850 \$200 \$100 \$200 \$100 \$200 \$200	\$850 \$200 \$100 \$2,000 \$2,000 \$2200	\$850 \$200 \$300 \$100 \$2,000 \$2200	\$850 \$200 \$100 \$2,000 \$2,000	\$50 \$450 \$300 \$100 \$2,000 \$2200	\$50 \$550 \$200 \$300 \$100 \$2,000 \$2,000	- 5850 - 5850 - 58200 - 5100 - 5100 - 5100 - 52,000 - 52,000
6 7 8	Env-Cenvectable Equipment Env-Cenvectable Equipment Env-Coperational Analyses Environmental - Miscellaneous Seriety	\$200 \$300 \$100 \$2,000 \$200 \$250 \$250	8250 8200 8100 82,000 82,000 8250	\$250 \$200 \$100 \$2,000 \$2,000 \$200 \$250	\$250 \$200 \$100 \$2,000 \$200 \$200 \$250	\$250 \$200 \$100 \$2,000 \$2,000 \$200 \$200	\$850 \$200 \$300 \$100 \$2,000 \$200 \$250	\$850 \$200 \$100 \$2,000 \$2,000 \$2,000 \$250	\$850 \$200 \$300 \$100 \$2,000 \$2,000 \$200 \$250	\$850 \$200 \$300 \$100 \$2,000 \$2,000 \$250	\$50 \$450 \$200 \$100 \$2,000 \$2,000 \$2200 \$2250	\$50 \$50 \$200 \$300 \$100 \$2,000 \$2,000 \$200 \$200	\$200 \$200 \$100 \$2,000 \$2,000 \$200 \$200 \$200
6 7 8 9	Env-Deprecisive Equipment Env-Opientional Analyses Environmental - Miscellaneous Safety Bachos Maintenance	\$200 \$300 \$100 \$2,000 \$2,000 \$200 \$250 \$700	\$250 \$200 \$100 \$2,000 \$2,000 \$250 \$700	\$250 \$200 \$100 \$2,000 \$200 \$250 \$700	\$850. \$200 \$100 \$2,000 \$200 \$200 \$250 \$700	\$850 \$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$1,000 \$2,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000 \$2,000 \$1,000 \$2,0000 \$2,0000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000	\$200 \$200 \$100 \$200 \$200 \$200 \$200 \$200	\$850 \$200 \$100 \$2,000 \$2,000 \$200 \$200 \$250 \$700	\$850 \$200 \$100 \$2,000 \$2,000 \$200 \$250 \$250 \$700	\$850 \$200 \$100 \$2,000 \$2,000 \$2,000 \$200 \$250 \$700	\$50 \$450 \$200 \$100 \$2,000 \$2,000 \$250 \$250 \$700	\$50 \$50 \$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$200 \$200	\$200 \$200 \$300 \$200 \$200 \$200 \$2200 \$2200 \$2200 \$250 \$700
6 7 8 9	Env-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Environments - Miscellsmous Seiny Seiny Bibloc Chemicals	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450	\$200 \$300 \$100 \$2,000 \$2250 \$700 \$2,450	\$250 \$200 \$300 \$2,000 \$2,000 \$200 \$250 \$700 \$2,450	\$150 \$200 \$100 \$2,000 \$200 \$200 \$250 \$700 \$2,450	\$250 \$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000\$3,000 \$3	\$200 \$200 \$100 \$2,000 \$2,000 \$200 \$200 \$200 \$250 \$700 \$2,450	\$850 \$200 \$100 \$2,060 \$2,060 \$250 \$250 \$750 \$2,450	\$850 \$200 \$100 \$200 \$200 \$200 \$250 \$700 \$2450	\$850 \$200 \$100 \$2,000 \$2,000 \$2200 \$250 \$700 \$2,450	\$50 \$200 \$300 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$50 \$850 \$200 \$100 \$2,000 \$200 \$200 \$200 \$200 \$200 \$200	\$850 \$200 \$100 \$200 \$200 \$200 \$250 \$250 \$250 \$250 \$2
B 7 9 0	Enix-Depresentative Equipment Enix-Depresentatives Enixonnestati - Missellanoious Seitty Bachtoe Maintensoon Miso, Chemidoat Uzitae - Electric, Weitfreid	\$200 \$300 \$100 \$2,000 \$2200 \$255 \$700 \$2,450 \$16,352	\$200 \$300 \$100 \$2,000 \$2200 \$2200 \$2200 \$2200 \$700 \$22,450 \$10,382	\$250 \$200 \$300 \$2,000 \$200 \$250 \$250 \$700 \$2,450 \$16,382	\$150 \$200 \$100 \$2,000 \$200 \$250 \$700 \$2,450 \$16,352	\$250 \$200 \$100 \$2,000 \$2,000 \$250 \$250 \$700 \$2,450 \$16,362	\$250 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$850 \$200 \$100 \$2,000 \$2,000 \$2500 \$7500 \$2,450 \$16,362	\$850 \$200 \$100 \$2,000 \$22,000 \$22,000 \$22,000 \$2,000 \$2,450 \$18,382	\$850, \$200 \$300 \$100 \$2,000 \$220, \$250 \$700 \$2,450 \$16,852	\$50 \$850 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$20	\$50 \$850 \$200 \$100 \$2,000 \$2,000 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$20	\$200 \$300 \$100 \$200 \$200 \$200 \$200 \$250 \$250 \$250 \$2
5 7 5 9 1 2	International Analysis Env-Depreside Equipment Env-Depreside Equipment Environments - Miscellaneous Seiny Backhoe Mathemanica Salko, Chemicala Utilitia - Electric, Welfred Utilitia - Electric, United	\$200 \$100 \$2,000 \$200 \$250 \$700 \$2,450 \$16,352 \$32,850	\$200 \$300 \$100 \$2,000 \$250 \$700 \$2,450 \$16,822 \$32,850	\$250 \$200 \$100 \$2,000 \$2200 \$250 \$250 \$250 \$10,352 \$700 \$2,450 \$16,352 \$32,855	\$150 \$200 \$100 \$200 \$200 \$250 \$250 \$700 \$2,450 \$16,352 \$32,850	\$250 \$200 \$100 \$2,000 \$2,000 \$220 \$250 \$700 \$2,450 \$16,362 \$32,850	\$200 \$300 \$200 \$200 \$200 \$200 \$200 \$200	\$850 \$200 \$100 \$2,000 \$2200 \$250 \$700 \$2,450 \$16,362 \$32,850	\$850 \$200 \$100 \$2,000 \$250 \$250 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$255 \$700 \$250 \$200 \$100 \$200 \$100 \$200 \$200 \$100 \$200 \$100 \$200 \$2	\$850, \$200 \$300 \$2,000 \$2200 \$250 \$700 \$2,450 \$16,852 \$32,850	\$50 \$200 \$200 \$100 \$200 \$200 \$200 \$200 \$20	\$50 \$850 \$200 \$100 \$2,000 \$200 \$200 \$200 \$200 \$200 \$200	\$200 \$300 \$300 \$200 \$200 \$220 \$220 \$220
B 5 5 1 2 3	Em-Depresiziole Equipment Em-Depresiziole Equipment Em-Committee Association Environmenta - Miscellanoius Behroe Meintensence Milles - Chemitota USIBles - Electric, Watthesh USIBles - Electric, Nettresh USIBles - Electric, Plant en RO	\$200 \$100 \$2,000 \$220 \$220 \$700 \$2,450 \$16,352 \$32,650 \$3,658	\$200 \$200 \$100 \$200 \$200 \$200 \$220 \$220	\$250 \$200 \$300 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$16,362 \$22,450 \$16,362 \$22,850 \$15,688	\$150 \$200 \$100 \$200 \$200 \$250 \$250 \$250 \$2,450 \$16,362 \$16,362 \$32,450 \$32,450 \$33,456	\$250 \$200 \$100 \$2,000 \$2,000 \$250 \$700 \$2,450 \$16,362 \$32,650 \$35,680	\$250 \$200 \$300 \$200 \$200 \$200 \$200 \$250 \$2700 \$2,450 \$10,302 \$32,650 \$32,650 \$32,650 \$32,850 \$32,850	\$850 \$200 \$100 \$2,000 \$200 \$200 \$250 \$700 \$2,450 \$16,362 \$16,362 \$15,856	\$850 \$200 \$300 \$100 \$2,000 \$250 \$250 \$250 \$250 \$250 \$18,362 \$32,850 \$332,850	\$850, \$200 \$100 \$200 \$220 \$250 \$700 \$2,450 \$16,852 \$32,850 \$35,856	\$50 \$850 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$20	\$50 \$850, \$200 \$300 \$200 \$200 \$200 \$200 \$200 \$200	\$200 \$300 \$200 \$200 \$200 \$200 \$2200 \$2200 \$2200 \$2250 \$2450 \$10,202 \$32,450 \$12,450 \$12,450 \$32,450 \$32,450
	Entro Terror Expension Equipment Env-Deprecision Equipment Env-Deprecision Equipment Environmental - Miscellansous Seriety Backhoe Mathemance Salac, Chemboals Utilities - Electric, Welfred Utilities - Electric, Vent end RO Submanuble - Pumpe	\$200 \$300 \$100 \$2,000 \$2200 \$2250 \$700 \$2,450 \$16,852 \$32,850 \$5,638	\$200 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$16,382 \$32,850 \$35,896 \$5,896	\$150 \$200 \$100 \$2,000 \$220 \$250 \$250 \$2450 \$16,362 \$32,650 \$5,688 \$5,688	\$150 \$200 \$100 \$2,000 \$250 \$250 \$16,362 \$16,362 \$32,850 \$5,896 \$5,896	\$250 \$200 \$300 \$2,0000 \$2,0000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000	\$200 \$300 \$300 \$200 \$200 \$200 \$250 \$22,500 \$22,550 \$32,550 \$32,550 \$32,550 \$32,550 \$32,550	\$850 \$200 \$100 \$2,000 \$2,000 \$2,000 \$250 \$700 \$2,450 \$16,362 \$32,850 \$5,890 \$5,890	\$850 \$200 \$300 \$100 \$2,000 \$250 \$250 \$700 \$2,450 \$32,850 \$32,850 \$35,850	\$850, \$200 \$300 \$2,000 \$2,000 \$250 \$700 \$2,450 \$16,852 \$32,850 \$5,890 \$5,890	\$50 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	\$50 \$850 \$200 \$300 \$200 \$200 \$200 \$200 \$200 \$20	\$200 \$200 \$200 \$200 \$200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$200
B 7 B 9 0 1 2 3 4 5	Env-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Environmental - Miscellanoious Senty Backhoe Mantensance Misc. Chemiosis Utilities - Electric, Welfreid Utilities - Electric, Welfreid Utilities - Electric, Welfreid Utilities - Electric, Picert en RO Submensible Pumps Submensible Motors	\$200 \$300 \$2,000 \$2,000 \$220 \$700 \$2,450 \$16,382 \$32,650 \$5,658 \$5,658 \$5,658 \$5,658	\$200 \$200 \$100 \$200 \$200 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$22,450 \$22,450 \$22,450 \$22,450 \$22,450 \$22,450 \$25,896 \$35,896 \$35,896 \$3500 \$3500 \$25000 \$2500 \$2500 \$25000 \$2500 \$2500 \$2500 \$20	\$150 \$200 \$300 \$200 \$200 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$250 \$	\$150 \$200 \$100 \$200 \$250 \$250 \$250 \$250 \$16,822 \$32,450 \$16,825 \$5,896 \$5,896 \$5,896 \$5,896	\$250 \$200 \$300 \$200 \$200 \$220 \$220 \$220 \$22	\$200 \$200 \$200 \$200 \$200 \$200 \$250 \$250	\$850 \$200 \$100 \$2,000 \$220 \$220 \$220 \$2250 \$700 \$2,450 \$16,362 \$32,650 \$35,690 \$500 \$500	\$850 \$200 \$300 \$100 \$2,000 \$250 \$700 \$2,450 \$18,362 \$32,850 \$5,600 \$5,600 \$5,600	\$850, \$200 \$100 \$2,000 \$220 \$700 \$2,450 \$16,862 \$32,850 \$3,880 \$500	\$50 \$200 \$200 \$100 \$200	\$00 \$200 \$	\$200 \$200 \$200 \$200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$200
	Enc. Trave Expension Equipment Env-Deprecision Equipment Env-Deprecision Equipment Environmental - Miscellansous Seinty Backhoe Mathemance Seinty Utilities - Electric, Welfreid Utilities - Electric, Venifield Utilities - Electric, Nen Concentrator - Utilities - Electric, Nen Concentrator - Submarable - Pumpe Submarable Autoria	\$200 \$300 \$100 \$2,000 \$220 \$250 \$2450 \$16,382 \$32,850 \$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$5,858\$\$\$5,858\$\$\$5,858\$\$\$5,858\$\$\$5,858\$\$\$5,858\$\$\$5,858\$\$\$\$5,858\$\$\$\$\$\$\$5,858\$\$\$\$\$\$\$\$	\$350 \$300 \$100 \$2,000 \$22,000 \$22,000 \$22,50 \$700 \$22,450 \$16,822 \$32,850 \$35,856 \$3500 \$3500 \$2500	\$150 \$200 \$100 \$2,000 \$200 \$200 \$2250 \$10,352 \$700 \$22,450 \$10,352 \$22,850 \$3,559 \$3,559 \$5,559 \$5,559 \$5,559	\$150 \$200 \$100 \$200 \$200 \$250 \$700 \$2,450 \$16,362 \$32,850 \$5,898 \$5,898 \$5,00 \$2,450 \$2,450 \$3,450 \$2,500 \$2,500\$2,500 \$2	\$250 \$200 \$300 \$200 \$200 \$200 \$200 \$250 \$700 \$2,450 \$16,362 \$32,850 \$5,880 \$5,880 \$500 \$500 \$500 \$500	\$250 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$20	\$830 \$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$16,352 \$16,352 \$5,696 \$5,696 \$5,000 \$2,450 \$5,600 \$5,000 \$2,0000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,0000 \$2,0	\$850 \$200 \$300 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$850 \$200 \$100 \$2,000 \$2,000 \$2,000 \$16,882 \$3,880 \$3,880 \$5,880 \$5,880 \$5,880 \$5,880 \$2,850 \$3,880 \$2,850 \$3,880 \$2,850 \$2,850 \$2,850 \$2,850 \$2,000 \$3,000 \$2,000 \$2,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,0000 \$3,000 \$3,000 \$3,000 \$3,0000 \$3,0000\$3,0000\$3,0000\$3,00	\$50 \$200 \$200 \$100 \$2000 \$2000 \$2200 \$100 \$2200 \$100 \$2200 \$100 \$2200 \$100 \$2200 \$2000 \$100 \$2000 \$2000 \$2000 \$30,800 \$2000 \$30,800 \$2000 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30,800 \$30000 \$3000 \$3000 \$3000 \$3000 \$3000 \$3000 \$3000 \$30000 \$3	500 5200 5200 5200 5200 5200 5200 5200	\$350 \$200 \$300 \$200 \$200 \$220 \$220 \$220 \$22
8 7 8 9 0 1 2 3 4 5 5 7	Env-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Environmental - Miscellanoius Senty Backhoe Matrisnishon Miso, Chemidosi Utilities - Electria, Watthest Utilities - Electria, Watthest Utilities - Electria, Watthest Utilities - Electria, Watthest Utilities - Electria, Pixer and RO Submarshible Michael Field Pixer & Verves Halam	\$200 \$100 \$2,000 \$2200 \$220 \$2250 \$2450 \$16,352 \$16,352 \$32,656 \$5500 \$5500 \$4000 \$2,0000 \$2,0000 \$2,0000 \$2,0000 \$2,000	\$2200 \$3000 \$1000 \$2,000 \$2250 \$2250 \$16,362 \$3,686 \$5,686\$5,686 \$5,686 \$5,686\$5,686 \$5,686 \$5,686\$5,686 \$5,686 \$5,686\$5,686\$5,686 \$5,686	\$250 \$200 \$200 \$200 \$250 \$10,92 \$2,450 \$10,952 \$2,450 \$10,952 \$2,850 \$5,889 \$500 \$500 \$500 \$200 \$500 \$200 \$200 \$2,850 \$2,	\$150. \$200 \$200 \$200 \$200 \$220 \$700 \$2,450 \$16,362 \$16,362 \$24,50 \$24,50 \$25,656 \$500 \$500 \$500 \$500 \$500 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,5000 \$2,500 \$2,5000 \$2,500 \$2,500 \$2,500 \$2,500 \$2,500	\$150 \$200 \$100 \$200 \$200 \$220 \$250 \$10,202 \$2450 \$10,202 \$32,450 \$10,202 \$32,450 \$10,202 \$32,450 \$10,202 \$32,650 \$5,606 \$5,606 \$5,000 \$2,500 \$2,500 \$2,500 \$2,500 \$2,000\$2,000 \$2	\$455) \$2000 \$2000 \$2000 \$2000 \$2500 \$2500 \$2500 \$2500 \$4250 \$1500 \$2600 \$2500 \$2	\$100 \$200 \$100 \$2,000 \$2,000 \$2200 \$2200 \$22,00 \$22,00 \$22,00 \$22,450 \$16,302 \$14,50 \$16,302 \$5,896 \$500 \$500 \$500 \$200 \$200 \$200 \$200 \$200	\$850 \$200 \$100 \$200 \$200 \$250 \$750 \$2,450 \$33,855 \$33,855 \$34,855 \$3500 \$500 \$400	\$850, \$2000 \$2000 \$2,000 \$2,000 \$23,500 \$25,50 \$2	\$50 \$800 \$300 \$300 \$200 \$200 \$200 \$200 \$200 \$2	4000 , 550 \$20000 \$20000 \$20000 \$2000 \$2000 \$2000 \$2000 \$2000	
	Enc. Trave Expension Equipment Env-Deprecision Equipment Env-Deprecision Equipment Environmental - Miscellansous Seinty Backhoe Mathemania Utilities - Electric, Constant Utilities - Electric, Seins Concentrator - Utilities - Electric, Seins Concentrator - Utilities - Electric, Seins Concentrator - Utilities - Electric, Seins Concentrator - Submanible Nations - Fried Physic & Velves Mediano	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$16,352 \$32,850 \$5,659 \$5,000 \$500 \$500 \$500 \$500 \$500 \$500 \$5	\$100 \$300 \$100 \$2,000 \$2250 \$700 \$2,450 \$16,322 \$32,850 \$500 \$500 \$500 \$500 \$400 \$400 \$400 \$4	\$250 \$200 \$2,000 \$2,000 \$2,000 \$250 \$10,352 \$2,550 \$10,352 \$10,352 \$2,850 \$3,808 \$500 \$500 \$500 \$500 \$500 \$500 \$2,500 \$2,809 \$2,809 \$2,800 \$2,	\$850 \$200 \$300 \$200 \$200 \$200 \$300 \$200 \$200 \$300 \$200 \$300 \$200 \$300	\$150 \$200 \$100 \$200 \$200 \$250 \$13,225 \$255 \$14,322 \$32,850 \$5,896 \$5,896 \$5,990 \$	\$200 \$200 \$200 \$200 \$200 \$220 \$220 \$225 \$100 \$250 \$10,800 \$24,800 \$10,800 \$3,800 \$2500 \$10,800 \$500 \$4,800 \$500 \$2500 \$2500 \$2500 \$1000 \$24,800 \$1000 \$2,800 \$1000 \$2,800\$	48300 4200 3100 42000 42000 8250 8700 82450 816,362 835,896 85000 8500 8500 8500 8500 8	\$850 \$200 \$300 \$200 \$200 \$220 \$700 \$2450 \$16,822 \$332,850 \$5,835 \$5,835 \$5,835 \$5,935 \$5,00 \$4,00 \$500 \$500	\$850 \$2000 \$100 \$2,000 \$22,000 \$2250 \$100 \$24,500 \$16,822 \$32,850 \$33,850 \$530 \$400 \$400 \$500	\$50 \$200 \$100 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$10,900\$1000\$1000\$1000\$1000\$1000\$1000\$10		.4350 \$200 \$100 \$2200 \$2200 \$2200 \$16,002 \$16,002 \$16,002 \$16,002 \$5,500 \$5,500 \$5,500 \$400 \$400
B 7 B 9 0 1 2 3 4 5 5 7 8 0	Enc. Travit Expension Equipment Enry-Deprecision Equipment Enry-Deprecision Equipment Enry-tomental - Miscellanoous Sentyo Backhoe Matrismanna Mise, Chemiosai Utilities - Electria, Watfreid Utilities - Electria, Watfreid Utilities - Electria, Watfreid Utilities - Electria, Water Hillities - Electria, Ventrei Submarshibe Matorn Freid Pphag & Velves Matorn Mise, Fried	\$2000 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$10,382 \$32,550 \$500 \$400 \$400 \$400 \$400 \$400 \$400 \$	\$250 \$300 \$100 \$2,000 \$	\$250 \$300 \$2,000 \$2,000 \$2,200 \$2,250 \$10,362 \$2,850 \$10,362 \$2,850 \$5,080 \$500 \$500 \$500 \$500 \$2,000 \$3,000 \$2,000 \$3,0000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,0000 \$3,0000 \$3,000 \$3,0000 \$	\$850 \$200 \$30,800 \$30,800 \$30,800 \$20	\$150 \$200 \$100 \$200 \$200 \$200 \$250 \$250 \$250 \$16,922 \$16,925 \$2,580 \$50,95 \$50 \$500 \$500 \$20	\$300 \$200 \$300 \$200 \$200 \$200 \$200 \$2400 \$10,302 \$40,00 \$500 \$500 \$400 \$500 \$400 \$200 \$10,302 \$10,302 \$10,302 \$10,302 \$10,302 \$10,000\$100 \$10,000\$ \$10,000\$ \$1	\$4500 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$2	\$450 \$100 \$100 \$200 \$200 \$200 \$200 \$200 \$20	\$850 \$200 \$100 \$2,000 \$22,000 \$22,00 \$22,00 \$22,00 \$22,450 \$18,822 \$18,822 \$55,898 \$550 \$550 \$100	\$50 \$450 \$300 \$300 \$200 \$200 \$200 \$200 \$200 \$20		.400 \$200 \$200 \$200 \$2200 \$2200 \$2200 \$2450 \$16,302 \$24,500 \$16,302 \$5500 \$5500 \$5500 \$3500\$3500
3 7 3 3 1 2 2 3 1 5 7 3	Entro Tarvia Color Equipment Env-Depreciation Equipment Env-Depreciation Ananyses Environmental - Miscellansous Seinty Backhoe Mathemania Utilities - Electric, Color Concentrator - Utilities - Electric, Brins Concentrator - Bachae - Electric, Brins Concentrator - Bachae - Bachae - Bachae Submaniatio - Burupe - Submaniatio - Bachae - Ba	\$200 \$300 \$100 \$2,000 \$2200 \$2,450 \$10,382 \$32,550 \$50,382 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$50	\$100 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$10,302 \$10,302 \$5,885 \$5,885 \$5,000 \$400 \$500 \$100 \$100 \$100	\$250 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,200 \$2,450 \$2,450 \$2,450 \$3,880 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$	\$850 \$200 \$100 \$200	\$150 \$200 \$100 \$200	\$250 \$200 \$100 \$200 \$200 \$220 \$200 \$220 \$200 \$20	\$100 \$200 \$200 \$200 \$200 \$250 \$700 \$2450 \$16,392 \$700 \$16,392 \$5,896 \$500 \$500 \$500 \$500 \$500 \$100 \$100	\$450 \$300 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$300 \$3	**************************************	\$50 \$200 \$100 \$2000 \$2000 \$2000 \$2000 \$10,900 \$10,900 \$10,900 \$10,900 \$10,900 \$10,900 \$10,900 \$100 \$100 \$100		. 4550 \$2500 \$2000 \$2000 \$2000 \$2200 \$2200 \$2200 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$25508 \$5508 \$5508 \$5000 \$300 \$3100
	Enix Interfactulations Equipment Eniv-Depresides Equipment Eniv-Depresides Equipment Enivorumental - Miscellanoous Senty Backhoe Matriansance Misc. Chemiodas Utilities - Electria, Watthed Utilities - Electria, Watthed Utilities - Electria, Pitra and RO Submershibs Futings Submershibs Mataria Faid Pipting & Velves Malaria Mislar, Field Handhoots Paint Dipting & Velves	2200 \$100 \$100 \$2,000 \$250 \$7,00 \$2,450 \$16,382 \$32,850 \$55,858 \$5500 \$400 \$400 \$400 \$400 \$100 \$100 \$200	\$250 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,250 \$2,450 \$10,322 \$52,855 \$500 \$500 \$500 \$500 \$400 \$100 \$100 \$100 \$100	\$250 \$300 \$2,000 \$2,000 \$2,200 \$2,250 \$10,362 \$3,500 \$3,500 \$5,500 \$5,500 \$5,500 \$5,000 \$100 \$100 \$100 \$100 \$2,200	\$850 \$2000 \$2000 \$2200 \$2250 \$700 \$2,450 \$10,822 \$3,436 \$3,436 \$3,436 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,00	\$150 \$200 \$200 \$200 \$200 \$200 \$250 \$250 \$250 \$10,322 \$16,322 \$16,322 \$25,88 \$2,580 \$500 \$500 \$200	\$300 \$200 \$200 \$200 \$200 \$200 \$200 \$2460 \$16,302 \$40,302 \$500 \$500 \$500 \$500 \$500 \$500 \$500 \$250 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$20	\$4500 \$200 \$100 \$200 \$200 \$200 \$250 \$700 \$2450 \$700 \$700 \$2450 \$10,352 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	\$450 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$20	\$850 \$200 \$100 \$2,000 \$2,000 \$22,000 \$22,00 \$22,650 \$16,852 \$35,898 \$550 \$550 \$100 \$500 \$500 \$100 \$100 \$200	\$50 \$200 \$200 \$100 \$200 \$200 \$200 \$200 \$20	2000 2850 2850 2000 2000 2000 2000 2000	.400 .400 .500 .500 .5200 .5200 .5200 .5700 .52,606 .55000 .5500 .5500 .5500 .5500 .5500 .55000 .55000
5 5 5 5 5 5 7 5 5 7 5 5 7 5	International Analyses Environmentalise Equipment Environmental Analyses Environmental - Miscellansous Seinty Backhoe Mathemania Utilities - Electric, Consentrator - Utilities - Electric, Brins Concentrator - Utilities - Electric, Brins Concentrator - Utilities - Electric, Brins Concentrator - Utilities - Electric, Brins Submanible Mathema Submanible Mathema Submanible Mathema Matema Matema Matema Matema Matema Plant Brins Cons Inst.	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$4,450 \$50,505 \$4,000 \$500 \$400 \$100 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2,455 \$2,450 \$2,500 \$2,450 \$2,500 \$2,450 \$2,500\$2,500 \$2	\$250 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$10,302 \$10,302 \$10,302 \$5,005\$5,005\$\$5,005	\$250 \$300 \$100 \$2,000 \$2200 \$250 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$200 \$300 \$3	\$850 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$10,822 \$22,850 \$10,822 \$22,850 \$10,822 \$22,850 \$300 \$400 \$100 \$20 \$2	\$150 \$200	\$250 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$200 \$2200 \$2200 \$2200 \$2250 \$700 \$2450 \$700 \$2450 \$700 \$2450 \$700 \$250 \$500 \$400 \$500 \$100 \$100 \$100 \$200 \$200 \$200 \$200 \$2	\$4550 \$3000 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3700 \$2,450 \$3700 \$10,325 \$37,850 \$37,850 \$37,850 \$3,850 \$400 \$100 \$100 \$200 \$100 \$200 \$200 \$200 \$2	*850) *8200 *8000 *8000 *8100 *800 *81	\$50 \$200 \$300 \$300 \$200 \$200 \$200 \$200 \$10 \$200 \$10 \$22 \$310 \$22 \$30 \$300 \$400 \$300 \$400 \$300 \$300 \$300	***** \$500 \$200 \$100 \$2,00 \$2,00 \$2,00 \$2,00 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$3,4,362 \$2,500 \$500 \$500 \$100 \$100 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,500 \$2,450 \$2,450 \$2,500 \$2,500 \$2,500 \$2,450 \$2,500 \$. 4550 \$200 \$200 \$200 \$200 \$220 \$220 \$220 \$
57 590 1234 5576 901 2	Envi-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Environment-I Missellaneous Environment-I Missellaneous Estive Exective Matriansace Miss. Chemiodes Utilities - Electria, Watrield Utilities - Electria, Watrield Utilities - Electria, Minne Concentrator: Misse, Field Magnetized Mane Field Mane Field Plant Plante Prince Plant Brine Corto Inst. -	2000 \$100 \$2,000 \$2,000 \$2,500 \$2,450 \$16,382 \$32,850 \$55,858 \$500 \$450 \$4500\$\$4000\$	\$100 \$200 \$100 \$2,000 \$2,000 \$2,500 \$2,450 \$161,382 \$22,850 \$31,685 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2300 \$300 \$2,000 \$2,000 \$2,450 \$16,852 \$24,550 \$16,852 \$24,850 \$16,852 \$200 \$16,852 \$200 \$100 \$100 \$100 \$100 \$100 \$100 \$10	\$850 \$200 \$100 \$200 \$250 \$250 \$250 \$10,222 \$250 \$10,222 \$10,222 \$10,222 \$10,222 \$10,222 \$10,222 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$100 \$200 \$200 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$100 \$200 \$10	\$1500 \$2000 \$2	\$200 \$200 \$200 \$200 \$220 \$200 \$225 \$200 \$226 \$200 \$2450 \$2450 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4550 \$300 \$100 \$2,000 \$200 \$200 \$200 \$2,450 \$10,850 \$300 \$10,05 \$100 \$100 \$100 \$100 \$2,550 \$100 \$100 \$100 \$100 \$200 \$100 \$200 \$100 \$1	*8500 *5000 *5000 *22000 *22000 *22000 *22000 *22450 *2700 *24500 *2500 *3500 *500	\$500 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$2	500 5450 5200 5200 5100 5200 5200 5200 5200 516,302 53,525 54,525,525 54,5255 54,5255 54,5255 54,52555 54,52555555	*350 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2
	Enix-Depreside Equipment Enix-Depreside Equipment Enix-Demresides Equipment Enix-Demresides Equipment Bible. Chemitots Utilities - Electrin, Weitfreid Utilities - Electrin, Weitfreid Utilities - Electrin, Sinte Concentrator : Utilities - Electrin, Sinte Concentrator : Utilities - Electrin, Sinte Concentrator : Utilities - Electrin, Sinte Concentrator : Submarshible Rumps Submarshible Rumps Field Piphog & Velves Matern Misc. Field Plant Bince Conc (Inst.) Plant Bince Conc (Inst.)	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,500 \$2,450 \$10,502 \$32,850 \$400 \$500 \$100 \$100 \$100 \$200 \$100 \$100 \$200 \$100 \$1	\$100 \$200 \$100 \$2,0	\$250 \$300 \$2,000 \$2,000 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,000 \$2,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$2,000 \$3,000 \$3,000 \$2,000 \$3,0000 \$3,0000 \$3,0000\$3,0000\$3,0000\$3,0000\$3,0000\$3,0000\$3,0000\$3,0	\$850 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$10,822 \$22,850 \$10,822 \$22,850 \$10,822 \$22,850 \$300 \$400 \$100 \$200 \$100 \$200	\$150 \$200 \$100 \$100 \$200 \$200 \$200 \$100 \$200	\$350 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4500 \$100 \$200 \$2200 \$2200 \$2200 \$2200 \$2450 \$700 \$2450 \$700 \$2450 \$700 \$200 \$200 \$200 \$200 \$200 \$200 \$20	\$450 \$300 \$100 \$200 \$200 \$200 \$200 \$200 \$100 \$2,450 \$10,855 \$37,850 \$37,850 \$500 \$500 \$100 \$100 \$100 \$200 \$100 \$100 \$100 \$200 \$100 \$1	*850) *8200 *800	\$50 \$200 \$300 \$300 \$200 \$200 \$200 \$200 \$20	***** \$500 \$200 \$100 \$100 \$200	*450 \$200 \$300 \$200 \$220 \$220 \$225 \$16,252 \$16,252 \$16,252 \$3500 \$500 \$300 \$300 \$300 \$200 \$200 \$200 \$200 \$2
	Linkov Buckster Equipment Env-Doprecision Equipment Env-Doprecision Equipment Env-Doprecision Equipment Environment-Instances Seriey Backtoe Matriansace Utilities - Electria, Watrietel Utilities - Electria, Vestrietel Utilities - Electria, Plant and RO Submentatie Matrians Submentatie Matrians Submentatie Matrians Materians Materia	2000 \$100 \$100 \$2,000 \$2,500 \$2,450 \$4,600 \$5,568 \$5,568 \$5,568 \$5,568 \$5,568 \$5,568 \$500 \$400 \$500 \$100 \$100 \$200 \$100 \$200 \$100 \$100 \$1	\$100 \$200 \$100 \$2200 \$2250 \$2250 \$2250 \$22,500 \$22,500 \$200 \$200 \$400 \$200 \$400 \$100 \$100 \$250 \$400 \$400 \$500 \$400 \$250 \$500 \$400 \$250 \$500 \$250 \$500 \$500 \$500 \$500 \$5	\$2300 \$200 \$200 \$2,000 \$2,000 \$2,450 \$16,852 \$2,450 \$16,852 \$3,890 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$10	\$850 \$200 \$100 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$24,55 \$100 \$200 \$400 \$400 \$100 \$20	\$1500 \$2000 \$1000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$10,922 \$22,450 \$10,922 \$22,450 \$24,500 \$25,000 \$200	\$500 \$200 \$200 \$200 \$2257 \$700 \$2257 \$25777 \$2577 \$2577 \$2577 \$2577 \$2577 \$2577 \$2577 \$2577 \$2577 \$2577	\$4500 \$1200 \$1200 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2450 \$10,922 \$10,922 \$10,925 \$10000 \$1000 \$1000 \$10000 \$10000 \$1000 \$10000 \$100000 \$100000 \$10000 \$10000 \$10000 \$	\$4550 \$300 \$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2450 \$332 \$332 \$332 \$332 \$3500 \$500 \$100 \$200 \$500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	*8500 *5000 *5000 *52000 *82000 *82000 *82000 *82000 *82000 *82000 *82000 *8500 *5500 *	\$500 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$2		*850 \$200 \$300 \$200 \$200 \$220 \$225 \$225 \$225 \$225 \$2
	Enix-Depreside Equipment Enix-Depreside Equipment Enix-Depreside Equipment Enix-Demreside Equipment Bible. Chemiotal Utilitae - Electric, Wattheat Utilitae - Electric, Netrines Utilitae - Electric, Netrines Utilitae - Electric, Netrines Utilitae - Electric, Netrines Submarstatis Motoria Field Pylong & Velves Matern Mila: Field Heardbools Plant Brine Const Inst. - Parts Electrical Field Plants Brine Const Inst.	2200 \$100 \$200 \$2250 \$2450 \$2,450 \$2,450 \$3400 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$4230 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$5,000 \$5,000 \$5,000 \$4000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$2,000 \$1000 \$1000 \$2,000 \$1000 \$2,000 \$2,000 \$1000 \$2,000\$2,000 \$2,	8250 8200 8300 82,000 82,000 82,450 82,450 83,680 83,680 85,08 85,000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,00000 85,0000000 85,000000000000000000000000000000000000	\$450 \$200 \$100 \$200 \$220 \$250 \$250 \$250 \$250 \$250 \$10,822 \$10,822 \$10,822 \$300 \$500 \$400 \$100 \$200 \$200 \$10,822 \$300 \$300 \$200 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$100 \$2,650 \$300 \$2,650 \$300 \$2,650 \$300 \$3	\$150 \$200 \$100 \$100 \$100 \$200 \$200 \$100 \$200 \$200 \$200 \$200 \$100 \$200	\$330 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$100 \$200 \$2200 \$2200 \$2200 \$2200 \$2450 \$700 \$2450 \$700 \$2450 \$700 \$200 \$200 \$200 \$200 \$200 \$200 \$20	\$450 \$300 \$100 \$200 \$200 \$200 \$200 \$100 \$2,450 \$100 \$33,850 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1	*850) *8200 *8000 *8	\$50 \$200 \$300 \$300 \$200 \$200 \$200 \$200 \$20	2000 3500 3500 3100 3100 3200 3200 3200 3200 3200 32	*450 \$200 \$300 \$200 \$220 \$220 \$225 \$16,262 \$16,262 \$500 \$5,568 \$500 \$300 \$300 \$100 \$200 \$100 \$200 \$100 \$100 \$100 \$1
	Linking Constant	2000 \$100 \$100 \$2,000 \$255 \$700 \$2,450 \$16,382 \$500 \$500 \$500 \$100 \$100 \$100 \$200 \$100 \$100 \$100 \$1	\$100 \$200 \$100 \$220 \$250 \$255 \$2450 \$160 \$255 \$5,885 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2300 \$2000 \$2000 \$2000 \$2200 \$2200 \$10,200 \$11,202 \$24,500 \$11,202 \$22,850 \$10,202 \$3000 \$2000 \$2000 \$2000 \$1000 \$2000 \$10000 \$1000 \$10000 \$1000 \$1000 \$10000 \$10000 \$10000 \$10000 \$1000	\$850 \$200 \$100 \$200 \$250 \$250 \$250 \$255 \$15,822 \$15,825 \$15,825 \$15,825 \$15,825 \$100 \$100 \$100 \$200 \$100 \$200 \$10	\$1500 \$2000 \$1000 \$2,000 \$	\$500 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$1000 \$5000 \$5000 \$5000 \$1000\$10	\$4550 \$300 \$100 \$2000 \$2000 \$200 \$200 \$200 \$200	*8500 \$2000 \$1000 \$2000 \$22,000 \$22,000 \$22,000 \$22,620 \$10,002 \$1	\$500 \$20000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000		*850 \$200 \$300 \$200 \$200 \$200 \$225 \$225 \$225 \$225 \$2
	Enc. Travis Expension Enri-Depreside Equipment Enri-Depreside Equipment Enri-Depreside Equipment Biology (Comparison of Comparison Biology (Comparison of Comparison Biology (Comparison of Comparison Utilities - Electric, Wettifest Utilities - Electric, Vettifest Utilities - Electric, Vettifest Utilities - Electric Submarshibs (Motors Field Pyblic) & Vetves Million - Field Handhools Plant Binon Como Inst. - Pumps Plant Binon Como Inst. - Pumps	2200 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$5,00 \$5,00 \$400 \$100 \$100 \$100 \$100 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$1,000 \$2,000 \$2,000 \$2,000 \$4,000\$\$4,0	\$4230 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$1,000\$1,000 \$1,000\$\$1,	. 8250 . 8200 . 8300 . 8300 . 8200 . 8250 . 8250 . 8250 . 8250 . 8250 . 810, . 82450 . 8500 . 8100 . 8500 . 8100 . 8100 . 8500 . 8100 . 81000 . 8100 . 81000 . 81000 . 81000 . 8100	\$850 \$200 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$10,322 \$250 \$10,322 \$10,322 \$200 \$20	\$1500 \$2000 \$1000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$100 \$3,000 \$000 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$2,000 \$100 \$2,000 \$1,000 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$2,000 \$10,000 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$100 \$2,000 \$2,000 \$2,000 \$100 \$2,0000 \$2,	\$300 \$200 \$200 \$200 \$200 \$200 \$200 \$200	84500 81200 81200 82000 82500 82500 82500 82500 8100 8500 8500 8500 8500 8500 8500 8	\$4550 \$3000 \$1000 \$2,000 \$2500 \$2560 \$300 \$300 \$300 \$300 \$400 \$400 \$400 \$100 \$100 \$100 \$100 \$1	*850 *8200 *8200 *8200 *8200 *8200 *8250 *8250 *8250 *8200 *8250 *8200 *82	\$500 \$2000 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$2000 \$100 \$1	**************************************	*450 \$200 \$200 \$200 \$200 \$220 \$225 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2250 \$2500 \$200 \$2
	Envi-Depreside Equipment Env-Depreside Equipment Env-Depreside Equipment Env-Depreside Equipment Environment-I Missellansous Senvo Senvo Senvo Sectore Methemance Utilities - Electore, Wenthesi Submersible Notors Submersible Notors Field Physic & Valves Materia Miss. Field Mand, Field Mand, Electore, Server Parst Binne Cons (nst. - Parst Plans Plans Plans Plans Plans Plans Submersible Subm	2000 \$300 \$2,000 \$2,200 \$2,500 \$2,450 \$32,850 \$32,850 \$32,850 \$500 \$400 \$400 \$400 \$400 \$500 \$100 \$100 \$100 \$100 \$1,00 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,000 \$1,	\$100 \$200 \$100 \$200 \$250 \$2450 \$107 \$2450 \$107 \$2450 \$500 \$400 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2300 \$2000 \$2000 \$2000 \$2200 \$2200 \$2200 \$2250 \$24,550 \$24,550 \$24,550 \$24,550 \$24,550 \$2000 \$5000 \$1000 \$1000 \$1000 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1000\$1000 \$10	\$850 \$200 \$100 \$200 \$250 \$250 \$250 \$250 \$2450 \$10,822 \$10,822 \$3,850 \$400 \$500 \$100 \$100 \$500 \$100 \$100 \$100 \$100 \$500 \$100 \$100 \$100 \$200 \$2,000 \$3,0000 \$3,000 \$3,0000 \$3,0000 \$3,0000 \$3,00	\$1500 \$2000 \$1000 \$2,0000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,200 \$2,200 \$2,200 \$2,200 \$2,200 \$2,500 \$2,500 \$2,500 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$2,000	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$10000 \$10000 \$1000 \$10000 \$10000 \$100000 \$10000 \$10000 \$10000 \$10000 \$1	\$4550 \$300 \$100 \$2200 \$2200 \$200 \$200 \$200 \$2200 \$2200 \$320 \$32	*8500 *8200 *8200 *8200 *8200 *8200 *8250 *8250 *8250 *8250 *8250 *8250 *8260 *8500 *8	\$50 \$200 \$300 \$200 \$200 \$200; \$200; \$200; \$200; \$200; \$200; \$200; \$200; \$200; \$200; \$200; \$100; \$200; \$10; \$1		
	Ein-Deprecision Equipment Enn-Deprecision Equipment Enn-Deprecision Equipment Enn-Deprecision Equipment Enn-Demrecision Education Existing Existi	5200 5100 \$100 \$2,000 \$2,000 \$2,500 \$2,450 \$3,6,382 \$3,2,850 \$5,00 \$5,00 \$400 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$2,450 \$5,00 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$2,50 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$100 \$2,50 \$100 \$	\$100 \$200 \$100 \$200 \$250 \$250 \$2450 \$2450 \$2450 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$250 \$300 \$200 \$2500 \$2500 \$2500 \$2500 \$2500 \$2500 \$2450 \$300 \$300 \$300 \$300 \$300 \$300 \$100 \$31000\$ \$31000\$ \$31000\$ \$31000\$ \$31000\$ \$31000\$ \$310\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$ \$3100\$	\$850 \$200 \$200 \$2200 \$2200 \$22,450 \$10,822 \$10,822 \$10,822 \$3,895 \$3,895 \$3,995 \$200 \$200 \$200 \$10,822 \$3,995 \$200 \$200 \$10,825 \$3,995 \$200 \$200 \$10,825 \$3,995 \$200 \$200 \$10,825 \$3,995 \$200 \$200 \$10,825 \$3,995 \$200 \$200 \$200 \$10,825 \$3,995 \$200 \$200 \$200 \$200 \$10,825 \$3,995 \$200 \$3100 \$30	\$1500 \$2000 \$2	\$350 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4500 \$1200 \$1200 \$2,000 \$2500 \$700 \$25450 \$16,382 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$100	24850 2500 2500 2500 2500 2500 2500 2515 2515	\$8500 \$2000 \$100 \$2000 \$22000 \$22000 \$2200 \$2200 \$2200 \$2200 \$10,022 \$23,850 \$10,022 \$3400 \$100 \$100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$2,000 \$100 \$100 \$100 \$100 \$100 \$100 \$200 \$100 \$1	\$50 \$200 \$100 \$200 \$200 \$200 \$2259 \$10,325 \$24,550 \$31,569 \$500 \$500 \$100 \$200 \$100 \$200 \$100 \$100 \$100 \$1	**************************************	**** **** **** **** **** **** **** **** **** **** **** **** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ***** ******
	Envi-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Env-Depresible Equipment Environment-I Missellaneous Senviv Backhoe Methemance Misse. Chemitods Utilities - Electric, Watthed Watthed Submanible Numps Submanible Notors Flaid Pitning & Valves Materia Miss. Field Mand, Fold Mandbools Plant Pitning Plant Electrical Plant P	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$2,450 \$32,850 \$34,00 \$400 \$400 \$11,00 \$11,00 \$11,00 \$1,150 \$3,00 \$1,150 \$2,250 \$100 \$1,150 \$2,250 \$100 \$1,150 \$2,250 \$100 \$1,150 \$2,250 \$100 \$1,150 \$2,250 \$100 \$1,150 \$2,250 \$100 \$1,150\$1,150 \$1	\$1530 \$2000 \$1000 \$2200 \$2550 \$161322 \$24550 \$161322 \$24550 \$5000 \$5000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000\$10000\$10000\$10000\$10000\$	\$250 \$300 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,000 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$850 \$200 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$2,450 \$2,500	\$1500 \$2000 \$1000 \$2,0000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$10,000 \$10,000 \$10,000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$1	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$10000 \$10000 \$1000 \$10000 \$10000 \$100000 \$100000 \$10000 \$100000000	\$4550 \$300 \$100 \$2200 \$2200 \$2200 \$2200 \$2200 \$2200 \$3700 \$400 \$400 \$100 \$100 \$100 \$100 \$100 \$1	\$100 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$50 \$200 \$300 \$200 \$200 \$200 \$200 \$200 \$20	**************************************	
8789012345578901234557890	Envi-Depressive Equipment Envi-Depressive Equipment Envi-Depressive Equipment Envi-Depressive Equipment Environment- Missellaneous Senty Backhoe Mantensance Miss. Chemiosis Utilities - Electrin, Watthesi Vatthesi Field Plabig & Valves Field Plabig & Valves Plant Brine Corro Inst. Plant Plant Electricul Fizars Eveptoration Ponds Cass, OL Greese Disponsi - E., C. Soluto RO Unit Lab Bupples	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,450 \$10,382 \$3,2,850 \$5,00 \$400 \$400 \$400 \$100 \$1100 \$1100 \$11,100 \$11,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,100 \$1,00	\$100 \$200 \$200 \$2250 \$2250 \$2450 \$2450 \$2450 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$1	\$250 \$300 \$200 \$2500 \$2500 \$2500 \$2500 \$2500 \$2500 \$2450 \$300 \$2450 \$500 \$500 \$500 \$300 \$500 \$31000 \$31000 \$31000\$3100 \$31000\$3100\$3000\$30	\$850 \$200 \$200 \$220 \$250 \$2500 \$250 \$250 \$250 \$250 \$250 \$2450 \$300 \$20,650 \$300 \$20,650 \$300 \$20,650 \$300 \$20,650 \$300 \$20,650 \$300	\$1500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$100000 \$1	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$100 \$2000 \$2000 \$2500 \$2500 \$2500 \$2500 \$24,550 \$10,322 \$5000 \$4000 \$4000 \$1000 \$1000 \$1000 \$1100 \$1000 \$1,150 \$1000 \$1,150 \$1000 \$1,150 \$1000 \$1,150 \$1000 \$1,150 \$1000 \$1,150 \$1000 \$1,150 \$1,1	\$4550 \$1000 \$1000 \$2,000 \$2000 \$2000 \$2000 \$2000 \$2000 \$15,000 \$10,000\$10,000\$10,0000\$10,0000\$10,000\$10,000\$10,000\$10,000\$10,000\$10,00	\$100 \$2000 \$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$10,800 \$10,800 \$100 \$100 \$100 \$1000 \$100 \$10000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$	\$50 \$200 \$100 \$200 \$200 \$200 \$2259 \$10,225 \$11,322 \$24,550 \$31,559 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$11,100 \$1,100 \$1,100 \$2,201 \$1,100 \$2,201 \$1,100 \$2,201 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$2,500 \$1,100 \$1,100 \$1,100 \$1,0		***** ********************************
37 8 9 0 1 2 8 1 5 5 7 3 9 0 1 2 8 1 5 7 3 9 0 1 2 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Envi-Depreside Equipment Envi-Depreside Equipment Envi-Depreside Equipment Envi-Depreside Equipment Environment- Mitsellanous Seinty Backhoe Maintensnos Biles, Chernhoats Utilities - Electrin, Weitfield Utilities - Electrin, Writfield Wardmools Submarchitie Matoria Field Piphog & Velves Missin Missin Plant Erind Const Inst. Purnpts Plant Erind Const Inst. Purnpts Plant Erind Const Inst. Purnpt Plant Plant Plant Const Const Plant Plant Const Plant Plant Const Plant Plan	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$3,5,555 \$5,500 \$400 \$400 \$1100 \$1000\$100 \$1000\$100 \$1000\$100\$1	\$4230 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$	\$200 \$300 \$2,000 \$2,000 \$2,000 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,450 \$2,000 \$2,450 \$2,450 \$2,000 \$2,450 \$2,000	\$850 \$200 \$3100 \$300 \$	\$1500 \$2000 \$2	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4550 \$1000 \$2000 \$22000 \$22000 \$22000 \$22000 \$22000 \$2450 \$3700 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1100 \$1000\$1000 \$10000\$1000 \$10000\$1000 \$10000\$10000\$1	**************************************	\$50 \$200 \$300 \$200 \$200 \$200 \$200 \$200 \$20		
5753901233455578900125545557.330012	Envi-Depreciable Equipment Env-Depreciable Equipment Env-Depreciable Equipment Environment- Miscellaneous Senty Backhoe Matrissisnos Misc. Chemiosis Utilities - Electric, Weiffeld Handbook Fladt Ploting & Valvies Handbook Handbook Handbook Plant Ploting & Valvies Plant Ploting & Valvies Plant Ploting & Valvies Plant Ploting & Valvies Plant Electrical Filder Plant Electrical Filder Discourdian Ponds Routes Posposi - A.c. Coubts Routes Robesia Ro Mandmanna Electrica Routes Robesia	2000 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$100 \$200 \$200 \$2250 \$770 \$2450 \$2450 \$2450 \$2450 \$2450 \$2450 \$200 \$200 \$200 \$250 \$200 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2500 \$2000 \$2000 \$2500 \$2500 \$2550 \$16,362 \$24,550 \$500 \$500 \$500 \$100 \$100 \$100 \$100 \$	\$850 \$200 \$200 \$250 \$2500 \$2500 \$2500 \$2505	\$1500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$10000 \$10000 \$10000 \$10000 \$10000 \$100000 \$100000 \$100000	\$500 \$200 \$200 \$200 \$225 \$700 \$226 \$200 \$226 \$200 \$200 \$200 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	\$4500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4550 \$300 \$100, \$2000 \$2000 \$2000 \$2000 \$100, \$	**************************************	\$500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$10000 \$10000 \$1000 \$10000 \$10000 \$100000 \$10000 \$10000 \$10000 \$100		\$450 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2
8789012234557890122345507.8901223	Envi-Depreside Equipment Envi-Depreside Equipment Envi-Depreside Equipment Envi-Depreside Equipment Environment- Missellanous Senty Backhoe Maintensnos Plant Brine Conso Isst Plant Brine C	\$2000 \$100 \$2200 \$2250 \$2450 \$2,450 \$2,450 \$30,565 \$30,565 \$400 \$100 \$100 \$100 \$100 \$1000 \$10000 \$1000 \$1000 \$1000 \$1000 \$10000 \$10000 \$10000 \$100000 \$1000	\$4250 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$4000 \$4000 \$4000 \$100 \$100 \$100 \$10	\$250 \$200 \$200 \$200 \$200 \$250 \$2,500 \$2,500 \$2,450 \$10,352 \$2,450 \$500 \$500 \$500 \$500 \$500 \$500 \$100 \$	\$850 \$200	\$1500 \$2000 \$2	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$100 \$1	\$4550 \$1000 \$2000 \$2000 \$2000 \$2000 \$2000 \$100 \$2450 \$3732 \$373255 \$373255 \$373255 \$373255 \$373255 \$373255 \$37305 \$100 \$100 \$100 \$100 \$1000 \$1000\$1000 \$10000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$1000 \$100	**************************************	\$50 \$200 \$100 \$200 \$100 \$200 \$100 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$1,500 \$200 \$1,500 \$1,500 \$1,500 \$200 \$1,500 \$1,500 \$1,500 \$2,500 \$1,500 \$1,500 \$2,500 \$1,500 \$1,500 \$2,500 \$1,500 \$1,500 \$2,500 \$1,500 \$1,500 \$2,500 \$1,500 \$2,500 \$2,500 \$1,500 \$2,500 \$2,500 \$1,500 \$2,500 \$2,500 \$1,500 \$2,500 \$2,500 \$1,500 \$2,500	**************************************	*4550 \$2000 \$2000 \$2000 \$2200 \$2200 \$2200 \$2200 \$2450 \$5,656 \$5,656 \$5,656 \$5,650 \$500 \$100 \$200 \$100 \$200 \$100 \$100 \$100 \$1
	Envi-Depresión Equipment Env-Depresión Equipment Env-Depresión Equipment Envi-Demresión Equipment Envi-Demresión Equipment Environmental - Miscellanoius Señvio Backhoe Matriansnon Miso. Chemiodai Utilities - Electria, Watfrield Handboots Plant Plant; & Valves Metam Plant Plant; & Valves Plant; Electrical Fitters Eveporation Ponds Rob demotrans Rob Mambrans Rob Mambrans Rob Mambrans Rob Mambrans Rob Mambrans Plant; Electrical Fitters Rob Mambrans Rob Mambran	2000 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$4230 \$2000 \$1000 \$2250 \$7700 \$2250 \$2450 \$2450 \$2450 \$2500 \$2500 \$400 \$1000 \$1000 \$1000 \$1000 \$1100 \$1000 \$1100 \$100 \$1000 \$1	\$200 \$200 \$200 \$200 \$200 \$2450 \$16,802 \$2450 \$16,802 \$2450 \$16,802 \$200 \$16,802 \$200 \$100 \$100 \$100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1100 \$1000\$100\$1	\$850 \$200 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$10,22 \$250 \$10,22 \$25,855 \$5,855 \$5,855 \$100 \$100 \$200 \$100 \$200 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$200 \$100 \$100 \$200 \$100 \$100 \$200 \$100 \$100 \$200 \$100 \$200 \$100 \$	\$1500 \$2000 \$2	\$500 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$1200 \$1200 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$10000 \$10000 \$10000 \$10000 \$100000 \$100000 \$10000 \$10000000 \$100000000	\$4550 \$300 \$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$300 \$3	**************************************	\$500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3000 \$3000 \$10000 \$1000 \$10000 \$1000 \$1000 \$10000 \$1000 \$1000 \$1000 \$1000 \$100	**************************************	*850 \$200 \$200 \$200 \$200 \$220 \$200 \$200 \$2
	Envi-Depreside Equipment Envi-Depreside Equipment Envi-Depreside Equipment Envi-Derretides Equipment Environment- Missellanous Seinty Backtoe Maintensance Milles - Electrin, Weithest Utilities - Electrin, Weithest Utilities - Electrin, Weithest Utilities - Electrin, Sinne Concentrator: Stummentaties Kotors Field Cipling, & Velves Miles, Fried Plant, Brinc Conc Inst. Person Electrical Plants Plante Sinder Conc Inst. Person Electrical Plants Plante Electrical Plants Plante Concenter Statister Statister Statister Plante, Rappiles Romes Plante, Rappiles Romes Plante, Rappiles Romes Plante, Rappiles Romes Plante, Bracktore Plant	2200 \$100 \$200 \$2250 \$2250 \$2450 \$2450 \$2450 \$2450 \$3400 \$4500 \$400 \$400 \$4100 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$4000 \$40000 \$40000 \$40000 \$400000 \$40000000000	\$4230 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$	8250 8200 8200 8200 82,000 82,450 84,450 85,080 85,080 85,080 85,080 85,080 85,080 85,080 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,0000 85,00000 85,0000000 85,000000000 85,00000000000000000000000000000000000	\$250 \$200 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$10,822 \$24,50 \$10,822 \$24,50 \$500 \$500 \$500 \$10,822 \$250 \$10,822 \$250 \$10,822 \$200 \$10,822 \$10,822 \$200 \$200 \$2	\$1500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$30,800 \$000 \$100 \$100 \$100 \$2000 \$000 \$000 \$100 \$100 \$2000 \$000 \$000 \$000 \$100 \$000 \$000 \$100 \$100 \$000 \$000 \$000 \$100 \$00	\$300 \$200 \$200 \$200 \$200 \$200 \$200 \$200	84500 81200 81200 82500 82500 82500 82500 82500 8103,502 8500 8500 8500 8500 8500 8500 8500 8	\$4550 \$100 \$100 \$2200 \$2200 \$2200 \$100 \$2450 \$310 \$100 \$100 \$100 \$100 \$100 \$100 \$10	\$100 \$20000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000	\$50 \$200 \$300 \$300 \$200 \$200 \$200 \$200 \$20		
	Ein-Degrindlich Equipment Env-Degrindlich Equipment Env-Degrindlich Equipment Env-Degrindlich Equipment Environment-I - Miscellanoous Sentry Backhoe Matriansnon Miso. Chemiodai Utilities - Electrin, Wetfrield Hand Departs Hater Hand Rybring Vetwes Metarn Hater Hand Rybring Vetwes Metarn Plant Plong & Vetwes Plant Rybring Vetwes Plant P	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$4230 \$200 \$3100 \$2200 \$2250 \$2250 \$2450 \$22,450 \$22,850 \$22,850 \$3100 \$3000\$300\$00\$00\$00\$00\$00\$00\$00\$00\$00\$00\$	\$200 \$200 \$200 \$200 \$200 \$250 \$16,82 \$2450 \$16,82 \$2450 \$16,82 \$200 \$16,82 \$200 \$16,82 \$200 \$100 \$100 \$1,000 \$1,00	\$500 \$200 \$200 \$200 \$250	\$1500 \$2000 \$2	\$500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3000 \$4000 \$500 \$1000 \$11,000 \$31,0000\$31,000 \$31,000\$31,000\$300\$300\$300\$300\$300\$3	\$4500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4550 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000\$10000 \$10000\$	*8500 *5000 *5000 *52000 *82000 *82000 *82000 *82000 *82000 *82000 *82000 *82000 *5500	\$500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$300 \$3	**************************************	*850 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2
	Enk-Depreside Equipment Enk-Depreside Equipment Enk-Depreside Equipment Enk-Demiside Equipment Bible. Chemiotal Utilities - Electric, Wetthest Utilities - Electric, Wetthest Utilities - Electric, Wetthest Utilities - Electric, Wetthest Utilities - Electric, Wetthest Obtamentalis Pumps Submarshibs Robust Field Ciphing & Velves Millow, Field Handbools Plant Bince Cono Inst. - Pumps Plant Bince Cono Inst. - Pumps - Plant Bince Cono	2200 \$100 \$200 \$2253 \$700 \$2253 \$700 \$2253 \$2450 \$2450 \$3400 \$4500 \$4500 \$4500 \$4500 \$400 \$100 \$100 \$100 \$1100 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,150 \$1,150 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,150 \$1,500 \$1,500 \$1,150 \$1,500 \$1,500 \$1,500 \$1,500 \$1,150 \$1,500 \$1,0000 \$1,000 \$1,000 \$1,0000 \$1,0000 \$1,0000 \$1,0000 \$1,000	\$4230 \$300 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$1,000\$1,000 \$1,000\$\$1,	8250 8200 8200 8200 8200 8200 8250 82450 8400 8500 80000 8000 8000 8000 8000 8000 8000 80000 8000 8000 800	\$850 \$200 \$200 \$220 \$250 \$250 \$250 \$250 \$250 \$250 \$10,822 \$250 \$10,822 \$250 \$10,822 \$200 \$20	\$1500 \$2000 \$2	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$200 \$200 \$2500 \$2500 \$2500 \$2500 \$2500 \$2500 \$200 \$2	\$4550 \$200 \$100 \$200 \$200 \$200 \$200 \$200 \$20	*8500 *5000 *5100 *82000 *82000 *82000 *8200 *8200 *8200 *8200 *8200 *8200 *8200 *8300 *8300 *8300 *8300 *8300 *8300 *81	\$50 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	**************************************	
	Ein-Degrandische Explorment Enri-Doprindische Explorment Enrichtensenden - Mässellannouss Sentry Backtoe Matriansnon Misse. Chernkonts Utilities - Electrin, Weitfreid Utilities - Electrin, Brinn and RO Submarnithte Pumps Submarnithte Nature Mala. Field Pipting & Velves Melann Mala. Field Hart Floring & Velves Melann Mala. Field Hart Floring & Velves Melann Plant Finging & Velves Plant	\$2000 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$3,000 \$100 \$100 \$100 \$100\$100	\$250 \$300 \$100 \$2,000 \$2,000 \$2,450 \$100 \$2,450 \$100 \$2,450 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$200 \$200 \$200 \$200 \$200 \$2450 \$16,822 \$2,850 \$16,822 \$2,850 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$850 \$200 \$200 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$250 \$24,53 \$500 \$400 \$400 \$400 \$200 \$100 \$200 \$24,53 \$300 \$400 \$24,53 \$300 \$200 \$24,53 \$300 \$200	\$100 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$500 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$4000 \$500 \$500 \$1000 \$1100 \$1100 \$1100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$3100 \$2000 \$3000 \$3000 \$3000 \$31000 \$31000 \$31000 \$31000 \$31000 \$31000 \$3500 \$31000 \$3500 \$3	\$4500 \$100 \$200 \$200 \$200 \$200 \$200 \$200 \$2	\$4850 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3000 \$3000 \$3000 \$1000 \$1000 \$1000 \$1000 \$11000 \$1000 \$11000 \$1000\$1000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$10000 \$100000 \$10000 \$10000 \$10000 \$100000 \$100000 \$100000 \$100000000	*8500 *5000 *5000 *52000 *82000 *82000 *8200 *8200 *8200 *8200 *8200 *8200 *5300 *5300 *5300 *5300 *5300 *5300 *1100 *1000 *1000 *1000 *1000 *1000 *1000 *10	\$50 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$		*850 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$2
\$ 7 \$ 9 \$ 1 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Enk-Depreside Equipment Enk-Depreside Equipment Enk-Depreside Equipment Enk-Demiside Equipment Senty Bibles - Deschin, Vestfreid Utilities - Electrin, Vestfreid Utilities - Electrin, Vestfreid Utilities - Electrin, Vestfreid Utilities - Electrin, Vestfreid Submarstübs Pumps Submarstübs Kotors Field Ophogi & Velves Milan, Field Handbools Plans Bince Corto Inst. - Pumps Plans Dince Corto Inst. - Pumps Vestickes - Tractors & Maint. - Vestickes - Tractors & Maint. - Vestickes - Tractors & Tractos Monthy, Total	2200 \$100 \$200 \$2253 \$700 \$2240 \$2450 \$2450 \$2450 \$500 \$400 \$400 \$100 \$100 \$100 \$100 \$1100 \$1100 \$1,150 \$1,500 \$1,150 \$1,150 \$1,500 \$1,500 \$1,150 \$1,500 \$1,500 \$1,500 \$1,150 \$1,500 \$1,0000 \$1,000 \$1,000 \$1,0000 \$1,0000 \$1,0000 \$1,00000 \$1,00	\$100 \$200 \$200 \$200 \$2250 \$2450 \$2450 \$2450 \$2450 \$500 \$500 \$100 \$100 \$100 \$100 \$100 \$1	8250 8200 8200 8200 8200 8200 8250 82450 8400 8500 8500 8500 8500 8500 8500 8500 8500 8500 8500 8500 8500 8500 8100 8100 8500 8100 8500 8100 8500 8100 8500 8100 8500 8100 8500 8100 8500 8100 8500 8100 8500 80000 8000 8000 8000 8000 8000 8000 80000 8000 8000 800	\$250 \$200 \$200 \$220 \$220 \$220 \$220 \$220 \$220 \$220 \$200	\$150 \$200	\$300 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	\$4550 \$100, \$100, \$2,000 \$2,200 \$2,500 \$10, 22,200 \$2,500 \$3,100 \$100, \$100 \$100 \$100 \$100 \$100 \$100	\$100 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3000 \$10000 \$1000 \$1000 \$1000 \$1000 \$10000\$1000 \$10000\$1000\$1000\$1000\$10	\$50 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	**************************************	
6789012345678901234567890123456789	Ein-Degrindlich Equipment Env-Degrindlich Equipment Env-Degrindlich Equipment Env-Degrindlich Equipment Environment-I - Miscellanoous Senty Extra Martinisana Extra Martinisanaa Extra Martinisanaa Extra	\$200 \$100 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$2,000 \$3,000 \$100 \$100 \$100 \$100 \$100 \$100 \$100	\$250 \$200 \$100 \$200 \$255 \$770 \$2,450 \$2,450 \$2,450 \$500 \$400 \$100 \$100 \$100 \$100 \$100 \$100 \$1	\$2300 \$2000 \$2100 \$2200 \$2200 \$2200 \$2200 \$2200 \$22450 \$22,450 \$22,450 \$200 \$200 \$20000 \$2	\$850 \$200 \$200 \$250	\$100 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$200 \$200 \$200 \$200 \$200 \$200 \$200 \$200	\$4500 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	\$4550 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$2000 \$3000 \$3000 \$4000 \$4000 \$1000 \$1000 \$1000 \$1000 \$11000 \$1000 \$11000 \$1000 \$11000 \$1000 \$11000 \$1000\$100	*8500 *5200 *5100 *52000 *82000 *82000 *8200 *8200 *8200 *8200 *8200 *8200 *8200 *8500 *8500 *8500 *81	\$50 \$200 \$200 \$200 \$200 \$200 \$200 \$200 \$	**************************************	*850 \$200 \$200 \$200 \$200 \$220 \$225 \$225 \$2

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	IN NU AND BE	UNE CONCI	TRATION	UPERATIO	N AND MAL	TENANCE		
Management and Accounting 2019	161 <u>1</u>				: 6/6	64	7/6	848
Operations Manager	1	١	4	.i	.9	.1	i	.1
Environmental Manager	1	1	· 1,	18	1	З я ,	1	1
Radiation Officer	1'	1	1	.1	•	••	ì	,
Chemist	1	1	1	1	, i	t.	,i	j
Electricien Plant Coemitor								
Wellfleld Personnel	Ϋ́,							
Foreman	11	1	1		1;	:1	1	1
Walifield Operators								
Pump Hoist Operators								
Engineering & Geologia Personnel (
Contract Contractory is a								
Total Employees F	<u>.</u> ⊈ 6	۲ ۵ ۰	5.	6	6	,6	5,	8
Operations Statistics	.F.							
Revense Osmosis Trestment								
GPM RO Capacity								
GPM RO Reject								
MM Gais, RO Processed - Month								
MM Gais, RO Reject - Month								
Brine Concentration								
GPM Otatiliste								
GPM Brine								
MM Geis, BC Cepeony - Month MM Geis, Distillate - Month								
MM Gata, Brine - Month								
Process Results Millions (9 DV Co.)	ê te							
Beginning PV								
Gettons Processes Month								
Cumulative Galions Processed								
Cumulative PV Processed								
Remaining Gallons to Process Remaining BV to Diverses								
ESTIMATED COST, DETAIL								
n n n n n n n n n n n n n n n n n n n			-					
					a, Decemationing	and recommedon-		
Satarias-Direct	\$27,417	\$27,417.	\$27,417	\$27,417	\$27,417	\$27,417	- 827,417	\$27,417
Insurance-Workmans Compensation	900	909	900	300	80	80	80	. \$0 900
Payroli Taxas	4200	4200	4200	4200	4200	4200	4200	4200
401X Contributions	4000	4000	4000	4000	4000	4000	4000	4000
Telephone/Telegraph	\$950	\$950	\$950	8950	\$950	\$250		
							\$950	\$950
Copy Environment	8300	\$175	\$175	\$175	\$175	\$175	\$950 \$175 \$300	\$950 \$175
Copy Equipment Other Equipment & Rentei	\$300 \$200	\$175 \$300 \$200	\$175 \$300 \$200	\$175 \$300 \$200	\$175 \$300 \$200	\$175 \$300 \$200	8950 8175 - \$300 - \$200	\$950 \$175 \$300 \$200
Copy Equipment Other Equipment & Rentai Office Supplies	\$300 \$200 \$160	\$175 \$300 \$200 \$150	\$175 \$300 \$200 \$150	\$175 \$300 \$290 \$150	\$175 \$300 \$200 \$150	\$175 \$300 \$200 \$150	\$950 \$175 \$300 \$200 \$150	\$950 \$175 \$300 \$200 \$150
Copy Equipment Other Equipment & Rental Office Bupples Office Equipment Maintanance Data Processing	\$100 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$950 \$175 \$300 \$150 \$150 \$50	\$950 \$175 \$300 \$200 \$150 \$50
Copy Equipment Other Equipment & Rentai Office Equipment & Rentai Office Equipment Maintenance Data Processing Maps	\$175 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50 \$1,000	\$175 \$300 \$200 \$150 \$50 \$1,000	\$950 \$175 \$300 \$200 \$150 \$50 \$50 \$1,000	\$950 \$175 \$300 \$200 \$150 \$50 \$50 \$1,000
Cory Endoment Char Equipment & Rentsi Office Equipment & Rentsi Office Equipment Maintenance Data Processing Mape Drafting & Printing Transportation - Ark & Car	\$175 \$200 \$160 \$50	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$60	\$175 \$300 \$200 \$150 \$50	\$175 \$300 \$200 \$150 \$50 \$2,600 \$2,600	\$175 \$300 \$150 \$50 \$50 \$50 \$50 \$50	\$950 \$175 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$2,600	\$950 \$175 \$300 \$200 \$150 \$150 \$1,000 \$2,500 \$2,500
Copy Exdpment Other Endpment & Rentasi Othes Endpment Maintenance Data Processing Mape Draffing & Printing Transportation - Art & Car Measa & Ensattaviment	\$100 \$200 \$160 \$50 \$50 \$300	\$175 \$200 \$150 \$50 \$300 \$300	\$175 \$300 \$200 \$150 \$50 \$50	\$175 \$320 \$200 \$150 \$50 \$300 \$300	\$175 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$300 \$300	\$175 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$300 \$300	8950 8176 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$300 \$300	\$950 \$175 \$300 \$200 \$150 \$50 \$2,500 \$300 \$300 \$300
Copy Equipment Other Equipment & Rentai Other Equipment & Rentai Other Equipment Maintenance Data Processing Mape Datafing & Printing Transportation - Art & Cast Transportation - Art & Cast Mesta & Extantibutinent Mesta & Estantibutinent Mesta & Estantibutinent	\$100 \$200 \$150 \$50 \$50 \$50 \$50 \$500 \$500	\$175 \$100 \$220 \$150 \$50 \$300 \$300 \$300	\$175 \$300 \$120 \$150 \$50 \$50 \$300 \$300 \$300	\$175 \$300 \$150 \$50 \$300 \$300 \$300 \$300	\$175 \$300 \$150 \$150 \$150 \$1,000 \$2,600 \$300 \$300 \$300	\$175 \$300 \$150 \$150 \$50 \$1,000 \$2,600 \$300 \$300 \$300	8950 8176 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$300 \$300 \$300 \$300	\$950 \$176 \$300 \$200 \$150 \$50 \$1,000 \$2,500 \$300 \$300 \$300
Copy Equipment Other Equipment & Rentai Other Equipment & Rentai Othes Equipment Maintenance Data Processing Mape Drafting & Printing Transportation - Air & Car Meab & Ententainment Miss. Travel Expense Env-Depreciatele Equipment Env-Depreciatele Equipment	\$100 \$200 \$150 \$50 \$50 \$300 \$300	\$175 \$300 \$220 \$150 \$50 \$300 \$300 \$300	\$175 \$300 \$150 \$150 \$50 \$300 \$300 \$300	\$175 \$300 \$150 \$50 \$300 \$300 \$300 \$300	\$175 \$300 \$150 \$150 \$50 \$1,000 \$2,500 \$300 \$300 \$300	\$175 \$300 \$200 \$150 \$50 \$1,000 \$2,600 \$300 \$300 \$300	8950 8178 8300 8200 8150 850 81,000 82,600 8300 8300 8300 8300	\$950 \$175 \$300 \$200 \$150 \$50 \$1,000 \$2,500 \$300 \$300 \$300
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November 19, 2001

ATTACHMENT E-2-2 BUDGET CALCUALTION AND BACKUP

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Labor Rates Electrical Usage Solid Production

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12	Salaried	Accountant		•	\$65,000	\$65,000	65/17
13	Er an an	Plant Personnel	· · · · ·	•	-	and the second	Frent
14	Salaried	Plant Superintendent		-	\$85,000	\$1\$85,000	874083
15	Salaried	Plant Engineer			\$45,000	\$45,000	53,750
16	Salaried	Radiation Officer	1		\$30,000	\$30,000	\$2,500
17	Salaried	Chemist	1	-	\$46,000	\$46,000	663,666
18	Salaried	Plant Foreman		-	\$28,000	\$28,000	52,333
19	Salaried	Maintenance Foreman		-	\$28,000	\$28,000	22,363
20	wage			\$9.62	-	\$20,010	51,557
21	lvvage		.	\$9.62 644.40	-	\$20,010	51607
22		Elecincian Approprias Electricas	1	014.43 642.04	,	1300014	82,501
23		Apprentice Electrican Plant Onerator	4	012:01 \$11:57	-	924;90j).	020022
24	Wage	Assistance Plant Operator	I	\$11.54 \$11.54	-	524 003	60000 60000000000000000000000000000000
28	Wage	Drver Operator		\$11.54	-	\$24.003	(27-0000) (27-0000)
27	Wage	Maintenance		\$11.54	-	\$24.003	52,000
28	1	Wellfield Personnel				م ماد موجود به المعالم (مرجوع من	AD DE TA
29	Salaried	Wellfield Superintendent		-	\$41 200	\$41 200	କରାଥରେ
30	Salaried	Drilling Engineer		-	\$40.500	\$40.500	63373
.31	Salaried	Foreman	1	•	\$28,000	\$28,000	\$2,363
32	Wage	Truck Driver	a a	\$11.54	•	\$24,003	\$2,000
33	Wage	Electrician		\$14.43	` ••	\$30.014	62,501
34	Salaried	Data Entry Clerk		-	\$20,000	\$20,000	SI CI
35	Wage	Secretary			\$20,000	(\$20)000)	St.C37
36	Wage	Logger	-	\$12.01	-	\$24,981	\$2,082
37		weilfield Operators	1 [°]	\$11.50	•	\$23,920	51,993
38	Ivvage	Assistant vveilneid Operator Balancer		917.50 644.50	•	A 23 920	01,556
39		Dalahuti Environmental Sampler		00.110 011.50	•	S	01000
40	Jwaye Ware	Pump Hoist Operators	4:	\$11.50	•, 	\$23,520	00,000
42	Wage	Backhoe Operator	r	\$10.49	-	\$21 R10	01000
43	Wage	Maintenance		\$11.50	-	\$23,920	Cil Con
	Wace	Casing Crew		\$11.50	ء: • ههر	\$23,920	Calcona Calcona
	1	Engineering & Geologic Dereonne	SI	411.44 4		Sector Service	
1	Solonia -		ç∙r		¢ėe 000		(OEVECO)
48				÷.	900,000		000000
47	Isalaried	REDERVUIK ENGINEEK Seniar Goologist	·	-	400,000	10001000	00000
48	Salaried	Geologist	1	•	000,000 648 800	(000;000) (\$100;000)	630550 (Maar
49	Salaried	Logging Supervisor		-	\$35,000	\$35,000	001000 (70)(77)
51	Wane	Secretary		-	\$20,000	\$20,000	CH1237
52	Wage	Surveyor		\$12.02	-	\$25002	100,000
53	Wage	Assistant Surveyor		\$12.02	-	\$25.002	\$2,033
54	Wage	Logger		\$10.49	•.	\$21 819	511818
55]					an a	
56		Total #	11				

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	COST SUMMARY TABLE										
	KW	Hrs/month	\$/KW	Cost/month		Cost/year					
WELL FIELD Submersible pumps	10.1										
30 extractors	303	720	0.075	1.\$	16,362	\$	196,344.00				
PLANT											
Sand Filter Pump	17	720	0.075	\$	918	1					
RO Feed Pump	51	720	0.075	\$	2,754						
Injection Pump	33	720	0.075	\$	1,782	1					
RO Heater Pump	3,5	72	0.075	\$	19	1					
RO Wash pump	10	24	0.075	\$	18						
RO Heater	75		0.075	\$	405						
				\$	5,896	\$	70,750.80				
		TOTAL			22,258	5	267,094.80				

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P. 06

10/30/2001

Churchrock electricalestimate.xis
		Churchrock WF/RO ELECTRIC REQUIREMENTS/COST		
	ASSUMPTIONS			
	1 Well depth	660 ft		
	2 Pump depth	500 ft		
	3 Static water level	400 ft.		
	4 Pipe line length	3600 ft.		
	5 Number of extraction wells	20		
	6 number of injection wells	30		
	7 Flow rate per extraction well	30 gpm		
	8 Flow rate per injection well.	30 gpm		
	9 Electrical cost.	\$:075/KWH		
1	0 Tank elevation	20 ft.		
WELL FI	ELD			
A .	Total head requirements			
	Friction loss			
	1 Pipe line friction loss.		psi	TOOL
	600 gpm in 6" SDR 17 polyet	tene pipe.	4D	92.4
	2 Elevation change between plan	t and WF	Q	0.
	3 Tank elevation		8.7	20
	4 Well lift to surface		173	400
	5 VVeil tubing loss	7		<u> </u>
	Total submersible head require	mente.	226.1	324
B .	Submersible pump requirements			
	Grundfos model 258100-52DS	10 hp		
	(see attachment)			Amps
	Run amps for this pump @ 30 gpm @ 820) ft. of head is;		8.58
	Full load current:			14,8
	Amperage used for electrical useage:			15
	Total Wellfield amperage is 30@ 11 amps.			330
	KW =	1.73 * 1 * E * PF	-	
		1000		
	KW =	(1.73*15*460*.85)/1000		
	KW =	19.1		
	Cost per well per	year = 10.1 kw*8840hrs*\$.075/kw	,	
	Cost per well per	yeer = \$5,544.80		
	Total cost(30 ext)	per year \$ 186,344.00		

10/30/2001

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PLANT A.

B.

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Injection Pump			
1 Injection rate	j.	435 gpm	
2 Injection pre	2 Injection pressure WHP =Q * TDH * SG 3960		
WHP =			
WHP =	435 * 100*2.31*1		
• • • •	3960	-	
WHP =	25		
BHP =	WHP JEE		
BHP =	25175		
BHP =	33		
Amps =		•	
	179*5*2# 975	•	
Amos=	33*746		
	1.73*480* 75* 85	•	
Amps=	48		
KV4 = ```	. 1. Annie au P		
	1000		
KW =	48*460		
	1000	•	
KVA =	22		
Condition Early Dump			
	25		
DATIF"	Ģ		
.Amps =	BHP 1746	_	
•	1.73*E*Eft *PF		

Amps=	25*748			
-	1.73*460*.75*.85			
Amps=	38			
KMV≑				
KW =	1000 38°460			
KW =	1000 17			

10/30/2001

Churchrock electricalestimate xis

Fax:1-361-595-0403

C. RO Feed Pump BHP

BHP	75
Amps = '.	- 8 BHP - 748
Amps=	1.73 E*EK *PF 75*748
Алтря=	1.73°460°.75°.85 110
KW =	Print Perfettion
KW =	1900
KW =	1000 51

10/30/2001

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D. RO Heater Feed pump BHP

BHP	5		
Amps =	BHP * 748		
	1.73*E*E# *PF		
Amps=	5-746		
• •	1.73*480*.75*.85		
Amps=	7.5		
KVY H			
	1009		
KW =	7.5 460		
• •	1000		
KW =	3.5		

E. RO Wash Pump

BHP Amps≑	15 BHP::746		
Amps=	1.73°E*En PF. 15°746		
Amps=	1.73*460*.75*.85 22		
KW =			
KW =	1000 22*460		
KW =	1000		

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URI. INC.

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POS. 1. 1 - 238/3-3908 F MII	Pos. 1.1	-	25S75	-39DS	F	Mtr
------------------------------	----------	---	-------	-------	---	-----

\$ 3106.00 x 1

Total \$ 3106.00

25S75-39DS F Mtr/7.5hp/31.8gpm@562.1 ft. of head/8.58 amps/ 53% eff. 25S75-39DS G Mtr/7.5hp/31.8 gpm@562.1 ft. of head/8.58 amps/53% eff 40S75-21 F Mtr/7.5hp/30.8 gpm@508.7 ft. of head/? amps/? eff



1

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Calculation of BC Solids Produced

Flow (g/min)	.580
Flow (I/min)	2,195
Flow (I/d)	3,161,232
Solids (g/l)	4
Solids (g/d)	12,644,928
Solids (g/mo)	384,616,560
Solids (kg/mo)	384,617
Solids (lb/mo)	174,429
Solids (yd3/mo)*	87
Solids (ft3/mo)	2,355
Unit disposal cost (\$/ft3)	\$3.52
Monthly disposal cost (\$)	\$8,291

*1 yd3 ~ 1 ton

Nrcrpcp Chemicals \$ Calculations

ATTACHMENT E-2-4 QUOTES AND PRICES BC vendor specs Electrical rates

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RCC Conservation

3006 Northup Way Bollevue, WA 98004-1407 Phone: 425 828-2400 x 1306 Fax: 425 828-0526

> September 13, 2000 RCC No. 00-3218

Mark S. Pelizza HRI, Inc. 12750 Merit Drive Suite 720, LB 12 Dallas TX 75251 VIA FAX 972-387-7779

Subject: Brine Concentrator for Uranium Recovery Project, McKinley County, NM

Dear Mr. Pelizza,

RCC has reviewed your request for a Brine Concentrator System for the above project and as discussed with RCC's Process Director, Bob Solomon. RCC would recommend a vertical tube, falling film vapor compression (MVR) evaporator (BC) followed by a steam driven rotary drum dryer to achieve zero liquid discharge (dry solids).

A chemistry of approximately 4800 mg/l TDS was provided as feed to the evaporator/drum dryer system. RCC has assumed a concentration factor of 40 can be achieved in the evaporator thereby reducing the feed stream of 125 gpm to 3.2 gpm. The 3.2 gpm concentrated evaporator blowdown will be sent to a rotary drum dryer for solids generation and zero liquid discharge.







The offer includes all necessary vessels, pumps, ducts, valves, controls, instrumentation and motors. It is designed to process 100 gpm of the specified wastewater and recovers about 97 percent of that volume as high purity distillate for recycle/reuse. The recovered distillate would contain less than 10 mg/l of total solids, excluding volatile species. The remaining 3.2 gpm concentrate will be sent to the drum dryer.

The proposed evaporator is a vertical tube, falling film, vapor compression unit similar in design to about 80 other RCC systems operating in this country and around the world. The first installations were put on-line in 1974 and continue today to perform as originally required and designed. Many of those units are treating wastewater, which are essentially identical to your requirement.

The composition of the wastewater to be processed is such that sparingly soluble species (e.g., calcium sulfate and silica) will precipitate as it is concentrated. This situation is typical in almost all cases where RCC units are employed and necessitates employing RCC's proprietary seed slurry process to avoid scaling and fouling of heat transfer surfaces. This design feature is incorporated into the proposed system

The feed is pumped to the agitated feed tank where the pH is adjusted to 5-6 using sulfuric acid. The feed tank provides sufficient residence time for complete mixing before the feed is pumped through the heat exchanger. The feed is heated in the heat exchanger to near boiling by recovering the distillate's sensible heat. The hot feed then passes through the deaerator where carbon dioxide (CO_2) and other non-condensibles are stripped before the feed enters the evaporator sump.

The brine from the sump is continuously recirculated to the top of the vertical heat-transfer tubes where it flows through an RCC patented distributor inserted into the top of each heat transfer tube and falls as a thin film inside the tubes. A portion of the thin film is vaporized. In a vapor compression thermodynamic cycle the vapor is compressed and introduced into the shell side of the vertical tube bundle. The temperature difference between the vapor and the brine film causes the vapor to release its heat of condensation to the falling brine and to condense on the outside of the tubes as distilled water. This distillate is collected at the bottom of the condenser and flows to the distillate tank through a pipe handling both liquid and steam. The steam phase is vented to the deaerator and to the atmosphere to remove non-condensibles and maintain proper system operating pressure. The hot distillate is pumped through the heat exchanger where it gives up its sensible heat to the feed. From this point, the distillate is available for use.

A portion of the concentrated brine is continuously withdrawn from the sump for discharge to the dryer feed tank. The rate of discharge is controlled to maintain proper solids composition in the sump brine.

The concentrated waste blowdown is collected in the dryer feed tank (by others) and is transferred to the rotary drum dryer. A Bufflovak atmospheric double drum dryer is used to crystallizer the shary being discharged from the Brine Concentrator. This drum dryer crystallizer is most versatile and widely applied to dry many food, chemical and pharmaceutical materials of widely varying densities and viscosity's: dilute solutions, heavy liquids, or pasty



Mark Pelizza HRI, Inc. Page 4

Seed/Waste Tank Mixer	1	6% Mo SS
Seed/Waste Tank Pump & Motor	1	Cd4MCu
Distillate Pump & Motor	1	316 SS
Distillate Tank	1	316L SS
Acid Pump & Motor	2	Alloy 20
AND		•
Rotary Drum Dryer	1	Cr. Plated CI
Feed Pump & Motor	1	Cd4MCu
Condensate Tank	1	316 SS
Condensate Fump & Motor	1	316 SS
Control System (PLC type)	1	AB
Field Instruments	1 lot	Various
Control Valves	1 lot	Various

Provide Operations & Maintenance Manuals.

Scope of Work by Others:

- Design and provide foundations, process and utility interfaces, waste disposal system, electrical equipment (including MCC and medium voltage switchgear), and insulation,
- Erect the system and provide interconnecting piping, manual valves and pipe supports,
- Perform checkout, startup and operation,

A price for equipment design and supply of the proposed system is as follows, FOB site. Delivery can be made in 48 weeks following notification to proceed.

125 gpm Brine Concentrator System with a 3.2 gpm rotary drum dryer to achieve zero liquid discharge: \$1,700,000

Installation is estimated to be \$800,000 including foundations and building Installation based on components installed on site although some components can be skid mounted at additional costs.

The operation of the proposed system will require approximately four (4) hours per shift, General duties will involve routine monitoring with plant walk-through and simple bench chemical (e.g., pH) tests.

RCC estimates approximately one man-month of supervision, construction support, training, startup and acceptance is required to support this project. RCC offers this on a time and material basis for \$85.00 ger hour plus travel and per diem expenses.





RCC appreciates your inquiry and would be pleased to provide additional information and answer any questions you may have. Please feel free to contact me at (425) 828-2400, x1306 or by fax at (425) 828-0526 or by email at joeb@ionicsrcc.com.

> Very truly yours, RESOURCES CONSERVATION COMPANY

Joe Bostjancic Sales Manager

EFFECTIVE ON ALL BILLS RENDERED ON OR AFTER

DECEMBER 30, 1999

PUBLIC SERVICE COMPANY OF NEW MEXICO ELECTRIC SERVICES

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<u>BCHEDULE 5B:</u> INDUSTRIAL POWER SERVICE-TIME-OF-USE LARGE SERVICE FOR MINING CUSTOMERS ≥ 10,000 KW MINIMUM AT 115 KV AND 69KV

<u>APPLICABILITY:</u> The rates on this schedule are available to a retail mining customer who contracts for a definite capacity commensurate with the customer's normal requirements but in no case less than 10,000 kW of capacity and who takes service directly from PNM's transmission system at 115 kV and the Company's primary distribution voltage of 69kV.

Service shall be furnished at the Company's available transmission voltage of 115 kV and at the Company's distribution voltage of 69kV. Service will be furnished subject to the Company's Rules and Regulations and any subsequent revisions. These Rules and Regulations are evailable at the Company's office and are on file with the New Mexico Public Regulation Commission. These Rules and Regulations are a part of this Schedule as if fully written herein.

TERRITORY: All territory served by the Company in New Mexico.

<u>TYPE OF SERVICE</u>: The service available under this schedule shall be three-phase service delivered at the Company's available transmission voltage of 115 kV and distribution voltage of 69kV.

SERVICE WITH A CONTRACT DEMAND OF 10,000 KW OR MORE:

- 1. The Company will provide service under this rate schedule to retail customers who contract for a demand of 10,000 kW or more and who take service from PNM's transmission system at 115 kV and distribution system at 69kV only if the customer agrees to a specified period of service under this rate schedule of not less than one year but in no event to extend past the initiation of customer choice for generation service as provided for in the Electric Utility Industry Restructuring Act of 1999. The customer must sign a facilities contract or appropriate line extension agreement for any transmission or distribution cost incurred by the Company for the customer not covered through rates on this tariff. Liquidated damages provisions will be included in the contract or line extension agreement unless otherwise agreed to by the Company.
- 2. All contract modifications must be in writing and executed as a supplement to the Contract.

<u>SUBSTATION EQUIPMENT</u>: All substation and distribution transformers, the necessary structures, voltage regulating devices, lightning arrestors, and accessory equipment required by the customer in order to utilize the Company's service at 115 kV and 69kV shall be installed, paid for, owned, operated, and maintained by the customer.

EFFECTIVE ON ALL BILLS RENDERED ON OR AFTER

DECEMBER 30, 1999

PUBLIC SERVICE COMPANY OF NEW MEXICO ELECTRIC SERVICES

SCHEDULE 5B: INDUSTRIAL POWER SERVICE-TIME-OF-USE LARGE SERVICE FOR MINING CUSTOMERS ≥ 10,000 KW MINIMUM AT 115 KV AND 69KV

The customer shall also provide at customer's expense suitable protective equipment and devices so as to protect Company's system and service, and other electric users, from disturbances or faults that may occur on the customer's system or equipment.

The customer shall at all times keep each of the three phases balanced as far as practicable so as not to affect service and voltage to other customers served by the Company. The customer shall not operate any equipment in a manner which will cause voltage disturbances elsewhere on the Company's system.

NET RATE PER MONTH OR PART THEREOF FOR EACH SERVICE LOCATION: The rate for electric service provided shall be the sum of A, B, C, D, and E below. On-Peak period is from 8:00am to 8:00pm Monday through Friday (60 hours per week). Off Peak period is all times other than On-Peak period (108 hours per week).

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- (A) <u>CUSTOMER CHARGE</u>: (Par Metered Account) (Includes 1st 10,000 kW of Billed Demand)
- (B) <u>ON-PEAK DEMAND</u> <u>CHARGE</u> (For Billing Demand Above 10,000 kW 4 During On-Peak Period)
- (C) ENERGY CHARGE:

For Energy Consumed During On-Peak Period:

For Energy Consumed During Off-Peak : Periods: \$75,100.00/Bill

\$7.51/kW

4.4905¢/kWh

3.1000¢/kWh

PUBLIC SERVICE COMPANY OF NEW MEXICO. ELECTRIC SERVICES

<u>SCHEDULE 5B:</u> INDUSTRIAL POWER SERVICE-TIME-OF-USE LARGE SERVICE FOR MINING CUSTOMERS ≥ 10,000 KW MINIMUM AT 115 KV AND 69KV

- EFFECTIVE ON ALL BILLS RENDERED ON OR AFTER DECEMBER 30, 1999
- (D) <u>POWER FACTOR ADJUSTMENT</u>: The above rates are based on a power factor of 90 percent or higher and the Company will supply, without additional charge, a maximum of 0.48 kvar (Reactive Kilovoit Amperes) per kW of billable demand. The monthly bill will be increased \$.25 for each kvar in excess of the allowed 0.48 kVAR per kW of billable demand.
- (E) <u>SPECIAL TAX AND ASSESSMENT ADJUSTMENT</u>: Billings under this Schedule may be increased by an amount equal to the sum of the taxes payable under the Gross Receipts and Compensating Tax Act and of all other taxes, fees, or charges (exclusive of ad valorem, state and federal income taxes) payable by the Company and levied or assessed by any governmental authority on the public utility service rendered, or on the right or privilege of rendering the service, or on any object or event incidental to the rendition of the service.

MONTHLY MINIMUM CHARGE: The monthly minimum charge under this Schedule is the On-Peak period demand charge applied to the 10,000 KW minimum demand.

DETERMINATION OF ON-PEAK PERIOD DEMAND CHARGE: The On-Peak period demand charge for any month shall be as determined by appropriate measurement as defined by the Company, but in no event shall it be less than the highest of the following: (a) the actual metered KW demand minus minimum demand; or (b) 50 percent of the highest KW demand during the preceding 11 months minus minimum demand, or (c) zero.

Metering shall normally be at customer's substation secondary voltage. The Company reserves the right to meter at the substation primary voltage level, in which event the metered kWh, kW demand, and kVAR shall be multiplied by .98 to allow for losses.

Where highly fluctuating or intermittent loads which are impractical to determine properly (such as welding machine, electric furnaces, hoists, elevators, X-rays, and the like) are in operation by the customer, the Company reserves the right to determine the billing demand by increasing the 15-minute measured maximum demand and kvar by an amount equal to 65 percent of the nameplate rated kVA capacity of the fluctuating equipment in operation by the customer.

INTERRUPTION OF SERVICE: The Company will use reasonable diligence to furnish a regular and uninterrupted supply of energy. However, interruptions or partial interruptions may cocur or service may be curtailed, become irregular, or fail as a result of circumstances beyond the control of the Company, or are the results of acts of public enemies, accidents, strikes, legal processes, governmental restrictions, fuel shortages, breakdown or damages to generation,

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PUBLIC SERVICE COMPANY OF NEW MEXICO ELECTRIC SERVICES

<u>SCHEDULE 58:</u> INDUSTRIAL POWER SERVICE—TIME-OF-USE LARGE SERVICE FOR MINING CUSTOMERS ≥ 19,000 KW MINIMUM AT 115 KV AND 69KV

EFFECTIVE ON ALL BILLS RENDERED ON OR AFTER DECEMBER 30, 1999

transmission, or distribution facilities of the Company, repairs or changes in the Company's generation, transmission, or distribution facilities, and in any such case the Company will not be liable for damages. Customers whose reliability requirements exceed these normally provided should advise the Company and contract for additional facilities and increased reliability as may be required. The Company will not, under any circumstances, contract to provide 100 percent reliability.

ACCESSIBILITY: Equipment used to provide electric service must be physically accessible. The metering must be installed on each service location at a point accessible to Company personnel at any time.

TERMS OF PAYMENT: All bills are net and payable within twenty (20) days, and are delinquent thirty (30) days, from the date the bill is rendered. If payment for any or all electric service rendered is not made within thirty (30) days from the date the bill is rendered, the Company shall apply an additional charge of 1.6 percent per month to the total balance in arears, excluding gross receipts tex. Partial payment of amount due by Customer is applied first to oldest bill, including any other fees or charges assessed, if any, before any amount is applied to current bill.

LIMITATION OF RATE: Electric service under this Schedule is not available for standby service, is not available to customers served in the downtown area of Albuquerque when served by the underground network system, and shall not be resold or shared with others.

AN-274 PC Document #25409



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Analytical Stability

3.1. Introduction and Description

Restoration rates will be monitored through analysis of waters produced from the formation. A sample will be taken weekly from the composite production line and analyzed for conductivity, and uranium. These ongoing sample and analysis costs are covered within the groundwater restoration budget.

When sample data indicates that restoration is at, or near completion, each original baseline well will be sampled for the parameters listed in Table 10.4-1 of the COP and analyzed by HRI on location. If the wellfield average value for each chemical parameter is consistent with baseline quality, restoration is considered to be complete and stability sampling will begin.

Stability will be determined by three sample sets taken at two-month intervals from the original baseline wells, and analyzed for the parameters in COP Table 8.6-1. Stability analysis will be performed off location by an independent commercial laboratory.

3.2. Budget Assumptions

The stability analysis budget was developed with the assumption that sample labor is provided from the on site staff and that staff will be available six months after restoration is complete as shown in the Groundwater Restoration Budget. As stated in LC 10.21 there will be one baseline well per acre of wellfield. It is estimated that at Crownpoint there will be 181 acres when fully developed.

It is estimated that a sample analysis by a commercial laboratory for the parameters shown in Table 10.4-1 of the COP will cost \$120 and a sample analysis by a commercial laboratory for the parameters shown in Table 8.6-1 of the COP will cost \$380.

One sample will be taken from each baseline well and analyzed for all the constituents in Table 8.6-1 of the COP before restoration begins at a cost of \$68,780.

Baseline wells will be sampled once per year and analyzed for all the constituents in Table 10.4-1 of the COP during restoration at a cost of \$152,040.

Following restoration, stability samples will be taken every 2 months for six months and analyzed for all the constituents in Table 8.6-1 of the COP at a cost of \$206,340.

As shown in Attachment E-3-1, the total cost for restoration analytical sampling is projected to be \$427,160.

November 19, 2001

ATTACHMENT E-3-1 ANALYTICAL STABILITY BUDGET

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GROUNI	WATER F	RESTORAT	10N Sampling			
				Units	Sub Total	Total
	Assumpti	ons:				
		Labor from	m staff			
		Routine n	nonitoring is covered in the restoration budget			
	One baseline well sampled per acre of wellfield One sample taken before restoration starts Baseline wells sampled once per year during restoration					
		Stability s	amples taken every 2 months for six months			
1	Monitori	ng and san	npling costs			
	Ά.	Restoratio	on well sampling			
		Estimated	restoration period (years)	7		
		1	Well Sampling prior to restoration start			
			# of wells	181		
			\$/sample	\$380	\$68,780	
		2	Restoration progress sampling	• • •		
			# of wells	181		
			\$/sample	:\$120		
			Samples/year	1 I	\$152,040	
	В.	Stability				
			Estimated stabilization period (months)	6		
			# of wells	181		
			Sample freq: mos.	2		
			\$/sample	\$380		
			Total		\$206,340	
	Total mo	nitoring an	d sampling costs			\$427,160

November 19, 2001

ATTACHMENT E-3-2 COMMERCIAL LABORATORY RATES

TEL. 361-884-0371

P.O. BOX 2552 78403

JORDAN LABORATORIES, INCORPORATED ANALYTICAL AND ENVIRONMENTAL CHEMISTS CORPUS CHRISTI, TEXAS

2000 SCHEDULE OF SERVICES

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ITEM

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ATTACHMENT E-3-2 COMMERCIAL LABORATORY RATES

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URANIUM AND RADIOMETRICS

Parameter/Method	Water	Soil/ Filters	Vegetation	Raw Wastes, Sludges, Etc.
Uranium - Fluorometric		A A T AA		ÁF7 00
(ASTM D2907-83)	\$12.00	\$27.00	\$32.00	\$57.00
Radium - Total Alpha Emitting Isoto	pes			
(Std. Met. No. 7500-Ra B.)	70.00	85.00	90.00	115.00
Radium 226				
(Std. Met. No. 7500-Ra C.)	53.00	68.00	73.00	98.00
Radium 228				
(SW846 9320)	80.00	95.00	100.00	125.00
Gross Alpha and Beta - Combined				
(SW846 9310)	30.00	45.00	50.00	75.00
Lead 210				
(HSL Si 76a)	73.00	88.00	93.00	118.00
Thorium 230				
(Anal. Chem. 46, 12 (1974))	63.00	78.00	83.00	108:00

Uranium in Urine - Fluorometric (ASTM D2907-83)	\$14.00
Uranium in Slurries and Concentrates for Settlement	80.00
Radon in Water, Gas or Air (100 cc Sample Size)	25.00
Cesium 134, 137 & lodine 131 in Grain or Nuts (by Gamma	Spec) 32.00
Naturally Occuring Radioactive Material (NORM)	
Includes Ra 226 & Ra 228	
In Water (StM 7500 RaC, SW846 9320)	133.00
In Soil or Solids (by Gamma Spectroscopy)	70.00
Alpha Spectroscopy	Ask for Quote
Gamma Spectroscopy \$60 plus	\$10 per Isotope



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SPECIAL GROUPINGS

Mineral Analysis of Fresh Water - Includes Sodium, Potassium, Calcium	n, Magnesium,
Chloride, Carbonate, Bicarbonate, Sulfate, Silica, Iron, Alkalinity, H	lardness,
Dissolved Solids, and pH	\$90.00
Oil Field Brine - Same as above but including Barium, Resistivity, CaCO	3 Stability
Calculations and Stiff Diagrams	\$100.00
TDWR Report - Texas Dept. of Water Resources Uranium In-Situ Mining Accuracy Checks and Ion Diagram - TDWR 0177 (Includes Radiun	Report with n 226) <u>\$380.00</u>
TDWR Report 0678 - Same as above with abbreviated Metals list	\$306.00
TDWR Common Ion Report - Same as above excluding Metals, Radium	226 and
Ammonium	\$120.00
Naturally Occuring Radioactive Material (NORM) Includes Radium 226 and Radium 228 In Water (StM 7500 RaC, SW846 9320) In Soil or Solids (by Gamma Spectroscopy) Used Fuel Oil Specification - Includes Arsenic, Cadmium, Chromium, Le and Flash Point	\$133.00 \$70.00 ead, TOX, \$164.00

GLYCOL ANALYSES

Benzene, Toluene, Ethyl Benzene & Xylenes (EPA 5030 & 8021)	\$45.00
Chloride (StM 4500 - CI-B)	10.00
pH (EPA 150.1)	5.00
Water by Karl Fischer (ASTM D1744)	18.00

AMINE ANALYSES

Amine Concentration, Wt. % (by titration)	\$15.00
Total Acid Gas Loading	15.00

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4. Plugging and Abandonment

4.1. Introduction and Description

All production, and injection wells will be permanently plugged, and abandoned upon completion of ground water restoration and, stabilized in a manner that prevents interformational transfer of fluids. The casing will be cut off three feet from the surface and, the site disked and seeded as outlined below.

4.2. Budget Assumptions

The plugging budget was developed with the assumption that all labor is contracted. HRI will use a **tremie tube** placement method of well plugging as described in the procedure shown in Attachment E-4-2. This benefit of this method is its simplicity. It has been used at ISL locations in Texas without any reported problems. HRI will verify that the wells are plugged completely by calculated the volume of the cement used against the volume of the casing receiving the plug.

Cement shrinkage is estimated at 120% of the initial volume. Shown in E-4-1cement cost per **sack** is **\$6.83**. For the purposes of determining labor and equipment requirements, it is estimated that **4** holes will be filled per day. Engineer/geologist supervision will be budgeted at \$50,000 per year and the cement **and pump hoist** contractors will receive **\$850 and \$1,050** per well. Finally a backhoe and operator rate of \$37.75 per hour as described in Attachment E-6-2 was assumed.

As shown within Attachment E-4-1, the total cost for plugging is projected to be \$3,951,287.

November 19, 2001

ATTACHMENT E-4-1 PLUGGING AND ABANDONMENT BUDGET

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Revised October 15, 2010

CROWNPOINT WELL PLUGGING AND ABANDONMENT

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Assumptions	
1. Cement shrinkage	120%
2. Cement cost per Sack	\$6.83
3. Cost for Gel per SX	\$5.60
4. Holes Plugged per day	4
Engineer/gelolgist - per year (assume 20% time for this project)	\$50,000.00
6. Backhoe & operator - per hour	\$37.75
8. Cementer Contractor per well for cementing 2000 ft hole	\$850,00
Rig Contractor per well for cementing 2000 ft hole	\$1,050.00
10. Wellfield acreage fully developed	40 ac.
11. Assume Cement Mixture will be 12.5 ppg with 2% get	
12. SX required for 2000 ft (6" csg) of 12.5 ppg cement with 2% Gel (without shrinkage factor)	188.3
13. SX gel required for 188.3 SX Cmt (without shrinkage factor)	7.1
14. SX required for 2000 ft (5° csg) of 12.5 ppg cement with 2% Gel (without shrinkage factor)	130.7
15. SX gel required for 52.3 SX Cmt (without shrinkage factor)	4.9

Unit of Measure	IN	# of Wells	FT	CU YD	CUFT	BBLS	SXS	SXS	w/o shrinkage	with shrinkage	BACKHOE					DOLLARS
ITEM	WELL	QTY	AVERAGE	HOLE	HOLE	CEMENT	CEMENT	GEL	CEMENT & GEL	CEMENT & GEL	\$ / well	ENG/GEOL	Contract Cementer for	Contract RIG	TOTAL	TOTAL
	DIAMETER		DEPTH	VOLUME	VOLUME	REQ'D	REQ'D	REQ'D	\$ / well	\$ / well	Assume 10 hr days	\$/well	Mixing/Pumping Cement	to Cmt well (\$ / well)	PER HOLE	SECTION 8
Injectors	6	401	2200	15.991	431.8	92.3	207.1	7.8	\$1,458.43	\$1,750.12	\$94.38	\$32.05	\$935	\$1,155.00	\$3,966.55	\$1,590,585.33
Extractors	6	529	2200	15.991	431.8	92.3	207.1	7.8	\$1,458.43	\$1,750.12	\$94.38	\$32.05	\$935	\$1,155.00	\$3,966.55	\$2,098,303.34
Deep Monitor	5	39	2200	11.105	299.8	64.1	143.8	7.8	\$1,025.69	\$1,230.82	\$94.38	\$32.05	\$935	\$1,155.00	\$3,447.25	\$134,442.69
Brushy Monitor																
Dakota Monitor	5	45	1800	9.086	245.3	52.4	117.6	6.4	\$839.20	\$1,007.04	\$94.38	\$32.05	\$765	\$945.00	\$2,843.46	\$127,955.82
Recapture Monitor																
Section 8 Total																\$3,951,287.18

November 19, 2001

ATTACHMENT E-4-2 BACKUP INFORMATION

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PLUGGING PROCEEDURE CEMENT PRICE QUOTE CEMENT VOLUME CALCULATION N.M. STATE ENGINEER RULES AND REGULATIONS

URI, INC.	SOP36NM – P & A OF CASED WELLS
Radioactive Materials License No. L03653	RSO Review/Date:
October 12, 2010	MGT Review/Date:

Purpose

The following is the procedure to be used for plugging and abandoning cased wells. There are two methods detailed in this SOP for plugging cased wells. Method "A" utilizes a tremmie pipe to circulate in cement from bottom to top. Method "B" is for deeper wells where it is deemed more convenient to run larger pipe utilizing a pump hoist or a drilling/workover rig to circulate in the cement.

The wells are to be plugged with approximately 12.5 lb/gallon cement slurry with 2% gel mixed with enough retarder (if necessary) to insure that the cement slurry's pumpability is sufficient to properly circulate cement into the casing from the bottom to surface.

Resources (Method A and Method B)

The labor and material resources necessary to complete the work include the following:

- 1. **Engineer.** The term "Engineer" is used herein to describe any qualified URI employee or contractor whose task it is to plan, oversee and execute the plugging and abandonment of cased wells.
- 2. Backhoe Operator. To operate the back hoe and provide general labor support.
- 3. **Backhoe.** Necessary to break off the casing of the well 4 feet below surface and the back filing of the resulting trench.
- 4. **Down-hole surveying equipment**. Such equipment as necessary to allow the verification of the location and competency of the plug down hole. In its simplest form, this could be a weight attached to a surveyors tape that would allow direct reading of the distance from top of casing to top of the cement plug
- 5. **12.5 lb/gal Cement Slurry with 2% gel and appropriate retarder as determined by Engineer.** This cement is to be mixed either on site, or at a remote location, as determined by the designated Engineer. It may be mixed by either a company owned cement unit utilizing company personnel, or by a contractor owned unit with contractor personnel.
- 6. For Method "A", tremmie pipe consisting of one or more joints of PVC pipe followed by an appropriate amount of poly pipe (with depth markings clearly indicated). The PVC pipe is included on the end to keep the poly pipe from hanging up on the walls or packer assembly while going into the wellbore. For Method "B", a pump hoist unit or drilling/workover rig will be required in addition to proper piping and associated

handling tools as needed. Piping for each shall be sized to fit casing and screen in wellbore in order to circulate cement from the bottom of the screen to the surface.

Office Preparation:

- 1. Identify the holes that are scheduled to be plugged.
- 2. Gather information from completion information, logs or other available data necessary to determine volumes for the wellbore.
- 3. Determine the number of barrels of "cement required to fill the casing and screen and apply an "excess" factor of 120%.

Method for Plugging Cased Well

- 1. Run piping into hole to bottom of screen. Mix cement and circulate in cement slurry through piping using an excess factor of 120%. Check cement density which is returning to surface to verify that it is representative of the cement being pumped. Take a one cup sample of both the cement being pumped and the returns to verify that the cement is setting up properly. Use a larger excess factor if necessary to get good clean returns.
- 2. Allow cement to set for two days. Check both cement samples to verify that the cement properly set up. Tag cement in wellbore to see where it has fallen back to. Calculate how much additional cement is required fill cement to surface and repeat step one to completely fill wellbore.
- 3. Use backhoe to cut off casing at least four feet below ground level. The engineer records that the hole has been successfully surface plugged and marks it for back filling.
- 4. The backhoe returns to the hole and back fills the area returning the ground to its original contours.





Jin 386-6555

October 6, 2000

IIRI, Inc. P.O. Box 777 Crownpoint, New Mexico 87313

RII: Quotation for Type I/II Portland Cement

Dear Salvador,

We are dolighted to quote your cement needs as follows:

Type I/II Cement f.o.b. Albuquerque Truck freight to Churchrock, NM Total delivered price Per short ton (2000 lbs) \$83.00 less \$1.00 Pd by 10th. <u>16,70</u> \$99.70 less \$1.00 Pd by 10th

Price should be good for all of 2001, however American Cement reserves the right to amend price on July 1, 2001 should it become necessary due to price increases. These generally do not exceed \$2 or \$3 per ton.

Thank you for the opportunity to quote this job. Please let me know if I can be of any further assistance.

Very limity H.70 2000 viel al li : 21 Peter H. Cantrup American Cement Corp. REQUIRE SILD FOR UNLOADING.

Cement Cost Worksheet

Cement Volumes (per bag

Specific Gravity	3.15
Absolute Volume Factor (lb/ft3)	62.4
Absolute volume (lb/ft3)	196.56
Lbs per bag	94
Lbs per ton	2000
Cement volume per bag (ft3)	0.478

Water Volumes (per bag)

1.00
8.33
6
49.98
62.4
0.80

Total volume per bag (ft3)1.279

Cement costs

Cement cost per ton (delivered) (\$)	\$98.70
Cement cost per 94 lbs	\$4.64
Cement/water yield per bag (ft3)	1.279
Mixed cement cost per ft3 (\$)	\$3.63
Mixed cement cost per yd3 (\$)	\$97.91



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HRI Crownpoint Weilfield Equipment Tabulation

# H. Houses	# Injectors	# Extractors	# Feet 2"	# Feet 10"	# Feet 14"	Gravel Road
1	2	:6:	4125			
2	27	33	13490			
3	6.	10	7200			
4	19	25	14715			
5	4	4	1325			
6	21	21	14315			
7	.24	44	39095			
8	9	15	7660			
9	19	24	13620			
10	26	45	19105			
11	7	9	8110			
12	29	29	13755			
13	25	35	20145			
14	9	7	4850			
15	22	21	9700			
16	14	16	5325			
17	7	18	4205			
18	.9.	9	2750			
19	26	32	10660			
20.	21	24	9245			
21	16	,9.	5070			
22	17	30	9225			
23	Ó	5	2200			
24	12	19	7925			
25	9	8	3225			
26	5'	· 8 ,	2250			
27	2	1	600			
28	14	24	7350			
Totals	401	529	259240	51000	11000	5000
Total weilfield acerage =		=	181			
	Dokota wells =		45			
Monitor Wells =			39			





RULES AND REGULATIONS GOVERNING DRILLING OF WELLS AND APPROPRIATION AND USE OF GROUND WATER

IN ENERVIEXICO



TSTATE ENGINEER SANTA FE. NEW MEXICO 1995 EDITION

ARTICLE 4

WELL DRILLERS' LICENSING--CONSTRUCTION, REPAIR, AND PLUGGING OF WELLS

4-1. LICENSE REQUIREMENTS. Only those persons with a valid water well driller's license issued by the State Engineer may drill for underground water within a declared underground water basin. Such licenses shall not be required for the construction of a driven well; provided that the casing for such well shall not exceed two and three-eights (2%) inches outside diameter. A driller's license may be acquired by application to the State Engineer. The State Engineer will issue a Water Well Driller's License to any applicant who, in the opinion of the State Engineer, having due regard for the interest of the state of New Mexico in the protection of its public waters, is qualified to conduct such drilling.

4-2. APPLICATIONS-FORMS AND FEES, PERFORMANCE BOND. Application for water well drillers license must be submitted to the State Engineer in quadruplicate on forms furnished by the State Engineer. An application must be accompanied by a filing fee of fifty dollars (\$50) and a performance bond in the penal sum of five thousand dollars (\$5,000) in a form and with surety approved by the State Engineer. The bond will be conditioned that the applicant will comply with the laws of the state of New Mexico and the rules and regulations of the State Engineer in the drilling of water wells. The license shall be valid only so long as the bond remains in effect.

4-3. DRILLING DEFINED. Drilling, deepening, repairing, cleaning, or plugging of a well requiring the use of a well rig is "drilling" within the meaning of these rules and regulations and can only be performed by a licensed driller.

4-4. LICENSE-ACTIVITIES PERMITTED-AMENDMENT. The Water Well Driller's License will show what activities the driller named therein is authorized to perform. Provided, however, any holder of a current license may file an application to have his license amended to include other activities. Forms for this application are available in the State Engineer Office. A filing fee of five dollars (\$5) must be submitted with this application.

4-5. DRILLERS' IDENTIFICATION CARD-LICENSE NUMBER AND EXPIRATION DATE ATTACHED TO WELL RIG. Each licensee when drilling in a declared underground water basin must have available for inspection upon request his pocket identification card which will be issued with the license by the State Engineer. A licensee must attach, in plain sight, to any well rig he is operating within a declared underground water basin a card showing his license number and the expiration date of the license. Such cards are issued by the State Engineer to current license holders. The licensee's name and address, in legible letters not less than one and one half (1½) inches in height, shall be conspicuously displayed on any drill rig under the licensee's control which is being operated within a declared underground water basin. 4-6. LICENSES-DURATION-RENEWALS. Licenses are granted for periods of two (2) years. A licensee may renew his license by making application to the State Engineer before the expiration of his current license. Application forms for renewals are available at the State Engineer Office and must be submitted in quadruplicate with a filing fee of twenty dollars (\$20). Renewals are also granted for periods of two (2) years.

4-7. LICENSES-PERFORMANCE BOND-SURETY-CANCELLATION. If the performance bond supporting the license becomes inoperative, the licensee must immediately cease operations. Sureties must give thirty (30) days written notice to the State Engineer of an intention to cancel a bond. This notice must be by registered mail.

4-8. DRILLING-WHEN PERMISSIBLE-EMERGENCY WELL DRILLING. A licensee may drill, deepen, repair, or clean a well within a declared underground water basin only when:

- a. owner of such well has a valid permit from the State Engineer for the work to be performed; or
- b. the requirements of Article 2-1.1 are met. The licensee must assure himself that the statutory requirements have been met.

4-9. LICENSED DRILLERS-FILING OF OWNERSHIP OF WELL RIGS-TRANSFER OF OWNERSHIP-DESCRIPTIONS. Each licensed water well driller shall file with the State Engineer a current description of each well rig owned or controlled by him. Whenever a licensee severs his ownership or control of a well rig, he shall notify the State Engineer in writing of such severance within ten (10) days. Whenever a licensee acquires ownership or control of a rig, he shall submit to the State Engineer in quadruplicate a full description of said equipment. The licensee shall submit a photograph (side view) of the rig.

4-10. SUSPENSION OR REVOCATION OF DRILLER'S LICENSE--GROUNDS. The State Engineer may, after notice and hearing, suspend or revoke a driller's license if he finds that said driller:

- a. has made a material misstatement of facts in his application for a license;
- b. has made a material misstatement of facts in a well record report;
- c. has violated the conditions of his license;
- d. has violated any of the rules and regulations of the State Engineer,
- e. has failed to submit a well record report (Article 4-11).

4-11. DRILLING RECORD-FORMS-TIME FOR FILING. The well driller shall keep a log of each well drilled, repaired, deepened, cleaned, or plugged, making a current record as the work progresses. A complete and properly executed well record, on the form provided by the State Engineer, shall be filed not later than ten (10) days after completion of the well.

4-12. SOIL FORMATION SAMPLES. The well driller shall, when so requested by the State Engineer, furnish (in sample bags supplied by the State Engineer) samples of the





formations encountered during drilling operations. The method and interval of sampling and the quantities required will be specified by the State Engineer.

4-13. WELL CONSTRUCTION. Every well shall be constructed with an opening of at least three fourths (%) inch in diameter in the casing above ground level to allow a measuring line to be inserted between the outside casing and the pump column, in order that the water level in the well may be measured. A removable cap shall be provided for such openings.

4-13.1. CAPACITY MEASUREMENTS - DISCHARGE PIPE - TURNOUT - APPROVED CAPACITY. In order that capacity measurements may be made, all pumps other than those connected directly into an underground system shall have a discharge pipe unrestricted for at least five (5) diameters in length from the flange of the pump, elbow, or other obstruction. Those connected to an underground system shall have a turnout at the well into which the entire flow can be diverted with an unrestricted pipe as above. This turnout may be equipped with a valve or removable cap. Flowing wells must be equipped with a discharge pipe as described above and a cap or valve approved by the State Engineer.

4-14. SHALLOW WELLS--CONSTRUCTION--REPAIR--PLUGGING. The State Engineer has not adopted any general specifications for the construction, repair, or plugging of non-artesian or shallow wells. Any specific requirements and provisions made by the State Engineer shall be set forth in the permit. Application for Permit to Repair is required for all repair work, cleaning, scaling, deepening, modification of casing, or other work requiring the use of a well rig. Any specific requirements or conditions governing the repair will be set out in the approval of the permit. If plugging is required (Article 2-13), shallow wells shall be plugged by filling to the ground surface or, if the casing is not to be removed, by welding a steel plate or cap to the casing.

4-15. ARTESIAN WELLS-CONSTRUCTION. The casing for artesian wells shall be inspected by the State Engineer or his representative and shall meet or exceed the specifications as set forth in 4-15.1. All casing and collars must be in good condition. A standard casing shoe shall be used in all instances. The casing shall not be perforated in a manner that would allow the commingling of water from the artesian formation with water in overlying formations.

4-15.1. CASING AND COUPLING-API TABLE OF SPECIFICATIONS. Only threaded casing shall be used. Casings and couplings shall meet minimum American Petroleum Institute (API) specifications for the following sizes:

Outside Diameter Inches	Weight With Couplings (lbs/ft)	Wall Thickness Inches	O.D. Inches	Coupling Length Inches	Threads Per Inch	Grade Of Casing
4½	9.50	0.205	5.000	5	8	F-25
51/2	13.00	0.228	6.050	6%	8	F-25


Outside Diameter	Weight With	Wall Thickness	0.D.	Coupling Length	Threads Per	Grade Of
Inches	Couplings (lbs/ft)	Inches	Inches	Inches	Inch	Casing
6	15.00	0.238	6.625	7	8	F-25
63/8	17.00	0.245	7.390	71/4	8	F-25
7	17.00	0.231	7.656	71/4	8	F-25
7%	20.00	0.250	8.500	71/2	8	F-25
8%	24.00	0.264	9.625	7%	.8.	F-25
9%	29.30	0.281	10.625	7%	8	F-25
10%	32.75	0.279	11.750	8	8	F-25
11%	38.00	0.300	12,750	8	8.	F-25
13%	48.00	0.330	14 375	8	8	F-25

If casing length exceeds one thousand (1,000) feet, H-grade or better shall be used for thirteen and three-eighths (13%) inch casing.

4-15.2. HOLE DIAMETER. In all cases the diameter of the drilled hole shall be at least two (2) inches greater than the outside diameter of the casing.

4-16. CASING-CEMENTING-TESTING. The following specifications shall govern casing, cementing, and testing: the casing shoe shall be welded to the casing to assure proper position. The casing shall be landed on a suitable casing seat in the confining formation overlying the artesian aquifer formation and sufficient oil well cement shall be used to obtain circulation to the surface. When circulation to the surface is not obtained, cement shall be placed to the surface behind the casing. Additives of pozzolanic nature may be used above the casing shoe but shall not exceed fifty per cent (50%) by volume. The addition of calcium chloride and/or gel is permissible but shall not in any case exceed two per cent (2%) each by weight. A sufficient amount of cement without additives shall be used to allow neat cement to seal the casing shoe and rise a minimum of fifty (50) feet above the shoe between the casing and the hole. Cement shall be allowed to set a minimum of forty eight (48) hours before drilling is resumed. Sealing off of the formations shall be checked by a method approved by the State Engineer or his authorized representative.

4-16.1. CEMENTING. Cementing shall be done by the pump and plug method as follows: after the casing has been run and landed, the pump shall be started and mud circulation shall be maintained for at least thirty (30) minutes with the casing raised slightly in order to equalize the mud pressure inside and outside of the casing. A heavy slurry of oil well cement and water shall be mixed and poured into the top of the casing. If additives are used in the slurry, sufficient neat cement (density fifteen (15) pounds per gallon) shall then be added to seal the casing shoe and rise a minimum of fifty (50) feet above the shoe. A casing plug of standard make shall be placed in the casing above the cement and a swedge nipple screwed onto the top of the casing and connected to the mud pump. Then a mud slurry or water shall be pumped into the casing, forcing the cement and casing plug down the casing. A measuring line shall be run behind the plug so that the driller may know its location at all times. When the plug reaches the point desired above the bottom of the casing, the pump shall be stopped and the casing lowered to the casing seat.

4-17. CASING, CEMENTING-TESTING-APPROVAL. The casing, cementing, and testing programs shall be witnessed and approved by an authorized representative of the State Engineer.

4-18. EXCEPTION TO CASING AND CEMENTING REQUIREMENTS. In those areas of declared artesian basins where the well is drilled into the artesian aquifer, but no confining formation overlying the artesian formation is present, the foregoing requirements for casing and cementing are not applicable and may be altered by receiving written approval of the State Engineer or his representative.

4-19. ARTESIAN WELLS--REPAIR. Before repairs are commenced the well shall first be inspected by a representative of the State Engineer to determine if the condition of the well is such that it may be repaired. When leaks in the casing are found and the casing and well are otherwise in good condition, the well may be repaired by a method approved by the State Engineer. A packer or bridge plug approved by the State Engineer shall be used in all well repairs. An inspection shall be made at the completion of the work to determine if the repair was satisfactory. During each inspection, the hole shall be open to allow the entrance of equipment for well logging and leakage measurement.

4-19.1. PLUGGING. If an artesian well is to be replaced by a new well, it shall be plugged immediately following the completion of the new well. All the work shall be done under the supervision of the State Engineer or his representative, or a representative of the appropriate Artesian Conservancy District who shall designate the amount of cement to be used and the depths at which cement plugs shall be set.

4-20. TEST OR EXPLORATORY WELLS. All test or exploratory wells shall be so constructed, maintained, and operated that each water shall be confined to the aquifer in which it is encountered. All test or exploratory wells penetrating artesian aquifers shall be cased, cemented, and tested as required for the construction of artesian wells (Article 4-15 through 4-18) and the casing shall be landed in the formation underlying the deepest artesian aquifer and cemented through all known artesian aquifers. The casing, as referred to in the artesian well specifications, is designated as the water protection string by the oil industry. If conductor pipe is used, it shall not be removed until after cementing of the casing has been completed. All casing, cementing, and testing programs shall be witnessed and approved by a representative of the State Engineer.

4-20.1. SHOTHOLES-PENETRATION. Shotholes for geophysical exploration shall not penetrate closer than twenty-five (25) feet above any known artesian aquifer under confinement.

4-20.2. ABANDONMENT--PLUGGING. In the event that the test or exploratory well is to be abandoned, the State Engineer shall be notified. Such well shall be plugged in accordance with Article 4-19.1 so that the fluids will be permanently confined to the specific strata in which they were originally encountered.

4-21. MINE LODE DISCOVERY AND DRILL HOLES. Any person drilling a mine lode discovery or mine drill hole to a depth of ten (10) feet or more, who shall encounter or whose drill shall cut into a water body or water bearing strata, shall plug or otherwise construct, maintain, and operate such holes so that any water encountered is permanently confined to the aquifer in which it is found.

4-21.1. DISCOVERY REPORT-FORMS-TIME FOR FILING. Such person, within ninety (90) days from the date of the discovery, shall report to the State Engineer, on forms provided by the State Engineer, the location and depth of the hole, and the method and material used in plugging the hole. If the hole is not plugged, the report shall describe the manner in which it was constructed and is being maintained and operated. The report shall include a log of the hole which is adequate to permit a determination of whether the plugging or construction and operation and maintenance of the drill hole are satisfactory.

4-21.2. ARTESIAN WATER. If artesian water is encountered, the construction, operation, maintenance, or plugging shall be done in accordance with Articles 4-15 through Articles 4-19-1.

4-22. DEVIATIONS FROM SPECIFICATIONS-APPROVAL. Any deviations from the above described casing, cementing, and testing programs must be approved by the State Engineer.

5. Equipment Removal

5.1. Introduction and Description

This budget includes the cost estimates for removing all of the production and restoration process equipment. All process vessels and other equipment are assumed to be contaminate for the purpose of developing the RAP budget and would be disposed in an U.S. NRC licensed waste disposal facility.

The surety would cover removing all process and restoration equipment at the Crownpoint site. The budget contemplates costs for disassembly, or demolition, loading, transportation and disposal at a NRC licensed facility³¹. There is no decommissioning considered, or disposal at an unrestricted site.

5.2 Budget Assumptions

The Process Equipment Removal and Disposal Budget is formatted with the underlying assumptions integrated into the tabulation. The budget figures distinguish individually costs associated with the Crownpoint site, and further break down removal and loading costs and transportation and disposal costs. Costs for tanks, pipe, pumps, reverse osmosis and brine concentration equipment are estimated.

The Process Equipment Removal and Disposal Budget was developed with the assumption that all labor is contracted at a rate of \$120 per day or \$15 per hour. These are reasonable contract labor rates. Estimate labor time requirements are based on best professional judgment. Management of this activity will be provided by site staff who will be available six months after restoration.

All tankage and piping will be reduced in volume as indicated in the budget. Tanks will be reduces by hydraulic shear and pipe will be crushed. There is no provision for reduction in the size of pumps, the dryer, the reverse osmosis equipment or the brine concentrator. No credit is given for salvage value.

For demolished tankage and pipe, a 50% void factor was included in all volume calculations for the purpose of determining transportation and disposal costs. All disposal was priced at the bulk rate as shown in Attachment E-5-2.

A contingency was included for health and safety supplies such as disposable uniforms and respirators.

As shown in Attachment E-5-1, the total cost for equipment removal is projected to be **\$62,019.**

³¹ For the purpose of this budget, HRI assumed that the NRC licensed site would be the IUC White Mesa Mill near Blanding Utah. Projected unit disposal costs are described in Attachment E-5-2.

November 19, 2001

ATTACHMENT E-5-1 EQUIPMENT REMOVAL BUDGET

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			<u>Satellite</u>	<u>Totals</u>
I.	Rem	ioval and Loading Costs		
	Α.	Tankage		
		Number of tanks	29	
		Volume of tank construction material (ft ²)	1300	
		1 Labor		
		Number of persons	3	
		Ft ³ /day	50	
		Number of days	26	
		\$/day/person	\$120	
		Subtotal labor costs	\$9,360	
		2 Equipment (hydraulic shear)		
		Number of days	26	
		\$/Day - \$300	\$300	
		Subtotal equipment costs	\$7,800	
		Subtotal tankage removal and loading costs	\$17,160	
	В.	PVC pipe		
		PVC pipe footage	3000	
		Average PVC pipe diameter (inches)	3	
		PVC pipe material volume (ft³/ft)	0.018	
		Volume of compacted PVC pipe w/100 % void (ft ³)	108	
		1 Labor		
		Number of persons	2	
		Ft/day	200	
		Number of days	15	
		\$/day/person	\$120	
		Subtotal labor costs	\$3,600	
		2 Pipe crushing		
		Number of persons	2	
		\$/hr./person	\$15	
		Feet pipe per hour	300	
		Subtotal pipe crushing	\$300	
	•	Subtotal PVC pipe removal and loading costs	\$3,900	
	C.	Pumps	00	
		Number of pumps	29	
		Average volume (ft'/pump)	5	
		Volume of pumps (ft ²)	145	
		1 Labor		
		Number of persons	1	
		Pumps/day	2	
		Number of days	14.5	
		\$/day/person	\$120	
		Subtotal pump removal and loading costs	\$1,740	
	U			
		RU (ft [×])	1000	

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PROCESS EQUIPMENT REMOVAL AND DISPOSAL

			1	Labor		
				Number of persons	3	
				Ft [*] /day	200	
				Number of days	5 ¢100	
			Total	\$/day/person PO dismontling and loading cost	\$120 \$1,800	
		F	Brine	concentration equipment	φ1,600	
		L		3	4000	
			1	Labor	4000	
				Number of persons	3	
				Ft ³ /day	200	
				Number of days	20	
				\$/day/person	\$120	
			Total I	BC dismantling and loading cost	\$7,200	\$31,800
		Total	process	equipment removal and loading costs		
	11.	Tran	sportati	on and Disposal Costs (NRC-Licensed Facility)		
		A.	Tanka	ge (plastic and fiberglass)		
				Volume of tank construction material (ft ³)	1300	
				Volume of disposal assuming 50% void space (ft ³)	1950	
				Transportation and disposal unit cost (\$/ft)	\$3.85	
			Subto	tal tankage transportation and disposal costs	\$7,508	
		В.	PVC p	pipe		
				Volume of crushed PVC pipe (ft ³)	108	
				Volume of disposal assuming 50% void space (ft ³)	162	
				Transportation and disposal unit cost (\$/ft)	\$3.85	
			Subto	tal PVC pipe transportation and disposal costs	\$624	
		C.	Pump	S		
				Volume of pumps (ft ³)	145	
				Volume of disposal assuming 50% void space (ff)	217.5	
			-	Transportation and disposal unit cost (\$/ff)	\$3.85	
		n	l otal (dryer transportation and disposal costs per facility	\$837	
		D	Rever	PO volume (# ³)	1000	
				No volume (it)	1000	
				Transportation and disposal unit cost $(\mathbb{S}^{\mathbb{A}})$	1000 ¢2.95	
			Total	driver transportation and disposal costs	\$3.850 \$3.850	
		Ε	Brine	concentrator	\$0,000	
				BC volume (ft ³)	4000	
				Volume for disposal assuming BC remains intact (f ²)	4000	
				Transportation and disposal unit cost (\$/ft)	\$3.85	
					\$15,400	
		Total	equipm	ent transportation and disposal costs		\$28,219
		Usel	ih and f	Sofaty Cooks		
	III .	neal	ui and t Radia	tion safety equipment	1000	
		Total	health a	and safety costs	1000	\$2.000
				· · · · · · · · · · · · · · · · · · ·		+=,000
•	TOTA	L EQL	JIPMEN	T REMOVAL AND DISPOSAL COSTS		\$62,019

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November 19, 2001

ATTACHMENT E-5-2 BUDGET CALCULATIONS DISPOSAL COSTS

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PIPE VOLUME TRANSPORTATION AND DISPOSAL

Pipe Wall Volume Data

Outside Diameter (in)	Area Inside OD (ft2)	Wall Volume SDR17 (ft3/ft)
2	0.022	0.012
2.5	0.034	
3	0.049	0.018
3.5	0.067	
.4	0.087	
4.5	0.110	
5	0.136	
5.5	0.165	
6	0.196	
6.5	0.230	
7	0.267	
7.5	0.307	
8	0.349	
8.5	0.394	
9	0.442	
9.486	0.491	
9.5	0.492	
10	0.545	0.140
10.5	0.601	
10.75	0.630	
11	0.660	
11.5	0.721	
12	0.785	
12.353	0.832	
12.5	0.852	
13	0.922	
13.5	0.994	
14	1.069	0.237
14.5	1.147	
15	1.227	
15.5	1.310	
	Wall Tk	
14 " SDR 17	0.824	k
10 " SDR 17	0.632	



TRANSPORTATION AND DISPOSAL

11.e.2 By-Product Material Transportation Disposal Costs per Ft3

Assumptions:

- 1. Based on contract costs for transportation to and disposal at the IUC White Mesa Mill near Blanding Utah
- 2. Transportation assumed a 200 mile trip a\$4.76 per mile, \$952 per trip. Bulk truck capacity 30 yds3. Drum truck capacity 64.
- 3. All 11.e.2 disposal fees are based upon actual current contract rates at Texas ISR facilities as itemized in 4 & 5 below.
- 4. Drummed waste. \$2,866 per shipment of 64 drums, 7.35 cu. ft. per drum, \$6.09 per cubic foot.
- 5. Bulk waste. \$1975.45 per shipment of 30 cu. yds. , \$2.44 per cu. ft.
- 6. Per truck site unloading (\$135.00) and decontamination (\$150.00) amounts are specified in URI's current disposal site contract

Type of Waste:	Sludge, resin, a	nd other by-p	roduct type was	stes shipped in drums.
	Unit Shipment			
	<u>Cost</u>	<u>Units/Drum</u>	Drums/Truck	Total \$/ft3
Disposal fee	\$2,866.00	7.35	64	\$6.09
Shipping	\$952.00			\$2.02
Site unloading	\$135.00			\$0.28
Site scanning	\$150.00			\$0.31
Total shipping and disposa				\$8.71

Type of waste:	Soil, sand, demolished concreteand other bulk wastes				
	Unit Shipment				
	<u>Cost</u>	Ft3/Truck	Total \$/ft3		
Disposal fee	\$1,975.45	810	\$2.44		
Shipping	\$952.00	810	\$1.18		
Site unloading	\$45.00	810	\$0.06		
Site scanning	\$150.00	810	\$0.19		
Total shipping and disposal			\$3.85		

Unrestricted Material Transportation Disposal Costs per ton

Assumptions:

1. Based on public costs disposal at the Waste Management Red Rocks Landfill. 24 \$/ton

2.1 ton is equal to 1 yd3

2. Transportation assumed a 30 mile trip at \$2.00 per mile. Bulk truck capacity 20 yds3.

	<u>Unit Cost</u>	<u>Total \$/yds3</u>
Disposal fee (ton)	\$24.00	\$24.00
Shipping (truck trip)	\$60.00	\$3.00
Total shipping and disposal (yd3)		\$27.00

November 19, 2001

ATTACHMENT E-5-3 QUOTES AND PRICES

LANDFILL FEES LANDFILL DISTANCE WHITE MESA FEES



HRI, INC. Crownpoint Office P. O. Box 777 Physical Address. 1/2 mile W of Crownpoint Crownpoint, New Mexico 87313 Voice: 505-786-5845 Fax: 505-786-5555 MARK : Miles To LANDFILL TO CP SITE 25Miles TO SEC 8-CR - 35 Miles (UIA I-40) TU SE 8-CR - 35 Miles [UIA SMITH LAKE PINE POL) Saluadar 9-13-a CROWPOINT/Gallup HAVE TRANSFER Shalions only -LANDFill Clace TU THOREOU NM.

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BYPRODUCT DISPOSAL AGREEMENT

This BYPRODUCT DISPOSAL AGREEMENT ("Agreement") is made on April 1, 2007, by and between, URI, Inc. ("Shipper") with its principal offices at 650 S. Edmonds Lane, Suite 108, Lewisville, Texas 75067 and Denison Mines (USA) Corp. ("DMC"), with its principal corporate offices at 1050 Seventeenth Street, Independence Plaza, Suite 950, Denver, Colorado 80265.

RECITALS:

A. Shipper is the operator and owner of an in-situ uranium recovery project located in Kleberg County, Texas near Ricardo, Texas, commonly known as the Kingsville Dome ISR Project (the "Project"), and such operations are conducted in accordance with a permit issued by the Texas Department of State Health Services (the "DSHS") ("Shipper's Radioactive Materials License").

B. Shipper desires an agreement with the operator and/or owner of a duly licensed facility authorized to permanently dispose of all of the Byproduct Material as defined under Section 11(e)(2) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2014(e)(2) and 10 C.F.R.§ 40.4 (the "Byproduct Material"), associated with the Project or arising from activities at the Project.

C. DMC is the operator of the White Mesa Mill located near Blanding, Utah (the "White Mesa Mill"). The White Mesa Mill is owned by Denison White Mesa, LLC., an affiliate of DMC. The White Mesa Mill has been duly licensed (the "White Mesa License") to permit the disposal of Byproduct Material generated as a result of uranium mining and processing by placement of the Byproduct Material in the White Mesa Mill's tailings impoundment (the "Tailings Facility").

D. DMC and Denison White Mesa, LLC have the necessary expertise, equipment, facilities, permits and licenses to safely and lawfully dispose of the Byproduct Material and to perform all work required in accordance with the terms and conditions set forth in this Agreement. Denison White Mesa, LLC is also signing this Agreement as a guarantor of DMC's obligations hereunder.

E. DMC is willing to accept Byproduct Material from Shipper for permanent disposal in the Tailings Facility at the White Mesa Mill upon the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual promises, covenants and agreements set forth in this Agreement, Shipper and DMC agree as follows:

1. AGREEMENT TO ACCEPT BYPRODUCT MATERIAL.

A. The initial term of this Agreement shall be one year commencing April 1, 2007 to and

including March 31, 2008, unless terminated earlier as hereinafter provided. Upon expiry of the initial term, this Agreement shall automatically renew each April 1 for additional one year periods, up to a maximum of four such additional one year periods, on the same terms and conditions as then in effect, subject to adjustment pursuant to Paragraph 11 hereof, unless, not less than 60 days prior to any such anniversary date, either DMC or Shipper shall have given written notice to the other that it does not wish to renew this Agreement or this Agreement has been terminated in accordance with the provisions contained herein. The term of this Agreement (the "Term") shall be the initial term plus all such additional one year renewal periods up to a maximum of four additional periods (i.e., up to March 31, 2012 at the latest).

B. During the Term, unless this Agreement is terminated earlier under Paragraph 14 hereof, Shipper shall ship all of the Byproduct Material of Shipper associated with or now located at the Project from activities at the Project site, up to a maximum total of 5,000 cubic yards of Byproduct Material from the Project, to DMC for final disposal at the White Mesa Mill pursuant to the terms and conditions of this Agreement. A corporate officer of the Shipper will certify in writing that the Byproduct Material has originated from the Project, and such certification shall be included in the Bill of Lading delivered to DMC.

C. DMC agrees to accept for final disposal the Byproduct Material of Shipper, as described herein, which is delivered to the White Mesa Mill pursuant to the terms and conditions of this Agreement during the Term of this Agreement, up to a maximum total of 5,000 cubic yards from the Project, unless this Agreement is terminated sooner under Paragraph 14 hereof.

2. ANALYSIS, TRANSPORTATION, SCHEDULING, AND DELIVERY OF BYPRODUCT MATERIAL.

A. Shipper shall provide and arrange for the transportation of Shipper's Byproduct Material through a transportation contractor. Any and all Byproduct Material shipped for disposal shall be transported in bulk in trucks, end dump containers, or in 55 gallon drums or super sacks. All trucks shall be selfdumping/end dump trucks, and all such drums shall be full of Byproduct Material and shall be so labeled. Shipper shall require that the transportation contractor comply with all applicable federal and state transportation regulations. Shipper shall make a copy of its contract with the transportation contractor available to DMC upon request; provided, however, that Shipper may first black out pricing and other confidential commercial information. By releasing a shipment from the Project, Shipper shall be deemed to have represented and warranted that all information set forth in the forms, reports and logs completed by Shipper is in accordance with this Agreement, and all applicable laws, rules and regulations. All deliveries of Byproduct Material to the White Mesa Mill shall be between the hours of 7:30 a.m. and 3:30 p.m., Monday through Friday (excluding holidays in the State of Utah). Shipper shall schedule loading at the Project accordingly. Shipper shall be responsible for any demurrage charges resulting from failure to load trucks to ensure that this delivery requirement can be met. As used herein, "shipment" is defined as any number of drums loaded on one truck or a partial or one full truckload of Byproduct Material, transported at one time. Scheduling of the shipments shall be coordinated with DMC. Shipper shall segregate types of Byproduct Material based on the categories set forth in Paragraph 10(A) hereof to facilitate determination of quantities being shipped for disposal and all shipments shall be in compliance with the requirements of Paragraph 5(D) hereof.

B. Shipper shall notify DMC, in writing, thirty days prior to an intended shipment of the Byproduct Material. Such notice shall include: (1) a detailed description of the content of the proposed shipment, setting forth with specificity a list of categories or types of Byproduct Material that it intends to ship to the White Mesa Mill, and; (2) a date when sampling (as described in Paragraph (C)) of the material proposed for shipment will occur.

C. At its sole expense, Shipper shall provide sample analyses (RCRA TCLP analysis, natural uranium, Radium-226 and Thorium-230, and other characterizations requested by DMC) in sufficient detail to enable DMC to confirm the content of the intended delivery of Byproduct Material. Shipper shall collect and analyze representative samples for each category or type of Byproduct Material that will be delivered to DMC for disposal. Where the Byproduct Material is not suited to sample collection (i.e. metals, process equipment, filter media and similar materials), the Byproduct Material, at a minimum, shall be evaluated in an appropriate manner to determine the total amount of activity due to Radium-226 in each shipment. DMC reserves the right to have its representative present when Shipper collects the samples. The samples shall be sent to a commercial analytical laboratory that is acceptable to both DMC and Shipper. A corporate officer of the Shipper will certify in writing that the analyses as listed in this Paragraph 2 (C) have been completed for each shipment. An original report of the results of the commercial analytical laboratory analyses and the Shipper's certification will be provided to DMC thirty (30) days prior to scheduling the actual delivery of the Byproduct Material.

D. Shipper shall provide DMC with advance notice of the actual date of delivery of the Byproduct Material two (2) business days prior to such delivery.

E. Unloading at the White Mesa Mill shall occur only in areas designated for unloading by DMC, and in strict accordance with the procedures established by DMC.

3. REJECTION OF MATERIAL. DMC shall be entitled to reject delivery of any Byproduct Material or other material of Shipper which, (1) DMC is not authorized to permanently dispose of at the White Mesa Mill by any term or condition of the White Mesa License, or by the terms or conditions of any other applicable permit or license, or by any applicable laws or regulations, or (2) DMC, in good faith, determines it is not the material from which a sample analysis has been provided to DMC. Upon receipt of notice from DMC of any such rejection, Shipper will promptly remove any such nonconforming material from the White Mesa Mill. DMC may also direct the transportation contractor to return the entire load to the Project. The removal cost, including any demurrage or delay costs incurred by the trucker, and all of DMC's costs associated with identifying and handling any rejected material shall be paid for by Shipper. To the extent that DMC has the legal obligation to identify, and to notify governmental agencies of any shipment of material (or portion thereof), which DMC believes not to be in compliance with applicable regulations, DMC shall not be liable to Shipper for any loss or damage incurred by Shipper because of such identification and notification. DMC shall make every effort to notify Shipper of such identification and notification in a timely manner. DMC's right to reject material of Shipper shall continue up to the time that DMC has accepted the material for permanent disposal at the Tailings Facility. "Permanent disposal" means the actual placement of the material in the Tailings Facility at the White Mesa Mill. After permanent disposal, Shipper's Byproduct Material will not be segregated from any other material received from any other third party or from any of DMC's material. Title to the Byproduct Material shall pass to DMC upon acceptance of the material by DMC for permanent disposal at the Tailings Facility.

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4. REPRESENTATIONS AND WARRANTIES OF DMC. As material inducements to Shipper to enter into this Agreement, DMC represents and warrants to Shipper as follows:

A. DMC is a corporation duly organized, validly existing, in good standing under the laws of the State of Delaware, and is duly qualified and authorized to do business in the State of Utah.

B. DMC has full corporate power and authority to own its property, carry on its business as being conducted on the date of this Agreement, and has full authority to enter into and perform its obligations under this Agreement.

C. The obligations of DMC, which are set forth in this Agreement, are enforceable in accordance with their terms except as such terms may be limited by bankruptcy, insolvency, or similar laws affecting the enforcement of creditors' rights generally.

D. The White Mesa Mill facility (i) is not or has not been the subject of response costs as defined by the Comprehensive Environmental Response, Compensatory, and Liability Act, as amended, 42 U.S.C. § 9601-9662 ("CERCLA"), or (ii) is not listed, or is not proposed to be listed, on the National Priority List as defined in CERCLA.

E. The White Mesa License is in full force and effect and permits DMC and Denison White Mesa, LLC to accept and dispose of Byproduct Materials in accordance with the terms and conditions of this Agreement.

5. REPRESENTATIONS AND WARRANTIES OF SHIPPER. As material inducements to DMC to enter into this Agreement, Shipper represents and warrants to DMC as follows:

A. Shipper is a corporation duly organized, validly existing, in good standing under the laws of the state of its incorporation. Shipper has been duly licensed under the Shipper's Radioactive Materials License to operate the Project and to generate the Byproduct Material.

B. Shipper has full corporate power and authority to own its property; to carry on its business as being conducted on the date of this Agreement, and has full authority to enter into and perform its obligations under this Agreement.

C. The obligations of Shipper, which are set forth in this Agreement, are enforceable in accordance with their terms except as such terms may be limited by bankruptcy, insolvency, or similar laws affecting the enforcement of creditors' rights generally.

D. Each shipment of Byproduct Material to be delivered to the White Mesa Mill for final disposal in the Tailings Facility will comply with all applicable provisions of Titles 10 and 49 of the U.S. Code of Federal Regulations, Shipper's Radioactive Materials License, the White Mesa License, and all other applicable regulations, permits and licenses.

E. The Byproduct Material is not and does not contain any hazardous waste as defined in the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6901-6992, or comparable state laws or regulations. The Byproduct Material has not been transported from any site or facility which (i) is or has been the subject of response costs or demands for the payment of response costs as defined in CERCLA, or (ii) is listed, or is proposed to be listed, on the National Priority List as defined in CERCLA.

6. COVENANTS OF DMC. DMC covenants as follows:

A. DMC shall remain in compliance with its representations and warranties as set forth in this Agreement during the term of this Agreement.

B. DMC shall maintain, at its expense, during the continuance of the effectiveness of this Agreement, policies of insurance which provide at least the following types of coverage in at least the following amounts:

COVERAGE

LIMITS

Worker's CompensationStatutoryEmployer's Liability\$1,000,000 each occurrenceGeneral Liability\$2,000,000 combined single limitAutomotive Liability\$1,000,000 each accident(bodily injury & property damage)

C. Worker's Compensation insurance shall contain a waiver of subrogation clause, to the extent permitted by law.

D. DMC shall, throughout the continuance of the effectiveness of this Agreement, remain in compliance with the requirements of any federal or state agency for the deposit of surety bonds, cash funds, or other surety arrangements as required by any such agency, to assure

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it of performance and completion of requirements for reclamation of the White Mesa Mill in accordance with applicable law and regulations.

7. COVENANTS OF SHIPPER. Shipper covenants as follows:

A. Shipper shall remain in compliance with its representations and warranties as set forth in Paragraph 5 of this Agreement during the continuance of the effectiveness of this Agreement.

B. Shipper shall maintain or cause the transportation contractor to maintain, at its expense, during the continuance of the effectiveness of this Agreement, policies of insurance which name each of DMC and Denison White Mesa LLC as an additional insured, and which provide at least the following types of coverage in at least the following amounts. Prior to delivering any Byproduct Material to the White Mesa Mill and, as a condition to doing so, then, and from time to time during the continuance of this Agreement, Shipper shall furnish to DMC duly executed certificates of insurance establishing that the required insurance coverage has been obtained and is being maintained in full force and effect.

COVERAGE

LIMITS

Worker's Compensation	Statutory
Employer's Liability	\$1,000,000 each occurrence
General Liability	\$2,000,000 combined single limit
Automotive Liability	\$1,000,000 each accident
(bodily injury & property damage)	
Automotive Liability	\$5,000,000
(LSA - Highway Route Controlled Quantity	Coverage)

C. Worker's Compensation insurance shall contain a waiver of subrogation clause, to the extent permitted by law.

D. The Byproduct Material to be delivered to the White Mesa Mill for disposal in the Tailings Facility will consist of contaminated soil, sand, rocks, demolition masonry, concrete rubble, filter material, pond liners, processing equipment, piping, pond sludge and other miscellaneous material and equipment. No separate pieces of any material shall exceed 30 cubic feet in volume, with no single dimension greater than six feet. Any and all material containing void space of one cubic foot or greater, except open-ended steel piping, shall be opened by Shipper such that the void space can be filled during disposal, or the material shall be crushed by Shipper such that the remaining void space is less than one cubic foot. No partially filled drums shall be shipped, and Shipper shall crush any empty drums that are shipped for disposal. Materials of a friable nature, such as PVC or fiberglass, shall be crushed or chipped by Shipper to reduce void space. Byproduct Materials saturated with liquid will not be shipped. No rebar or other sharp objects shall be protruding from concrete or cement type of rubble. Any deviation from these requirements must be approved in writing by DMC prior to transporting such

materials. The Byproduct Material is expected to include the radionuclides Radium-226, Thorium-230, and natural uranium. The Radium-226 levels will not exceed 6,000 pci/gram, and total radioactivity will not exceed 6,000 pci gross alpha activity per gram, and sample reports showing radioactivity levels shall be included with the Bill of Lading delivered to DMC for each shipment.

E. With each shipment of the Byproduct Material to the White Mesa Mill, Shipper shall execute and deliver to DMC (or the transporter, as appropriate) a Bill of Lading and Material Release Authorization, and the information provided on such shall be true and accurate in all respects.

8. INDEMNIFICATION BY DMC. DMC shall indemnify, defend, and save harmless Shipper and its officers, employees, and agents against all liability whatsoever, including all costs and expenses Shipper and its officers, agents, and employees may incur, including without limitation by reason of enumeration, claims asserted against Shipper by any employee of DMC, environmental response costs, clean up costs, governmental fines, costs of settlement, and reasonable attorney's fees which in any way relate to or arise out of or are incurred in connection with any of the following: a breach by DMC of its representations, warranties or covenants made in this Agreement, the failure of DMC to comply with the terms and provisions of the White Mesa License and/or any state issued permits, or other applicable federal and state statutes or regulations, or the disposal of any Byproduct Material at the White Mesa Mill provided that the Byproduct Material conforms in all material respects to the terms of this Agreement and the data supplied on any of the reports, logs or forms provided by Shipper.

9. INDEMNIFICATION BY SHIPPER. Shipper shall indemnify, defend, and save harmless DMC, Denison White Mesa, LLC. and their respective officers, employees, and agents against all damages and liability whatsoever, including all costs and expenses that DMC, Denison White Mesa, LLC. and their respective officers, agents, and employees may incur, including without limitation, loss of profits or revenues, claims asserted against DMC or Denison White Mesa, LLC. by any employee of Shipper, environmental response costs, clean up costs, governmental fines, costs of settlement, and reasonable attorney's fees which in any way relate to or arise out of or are incurred in connection with the disposal of any Byproduct Material delivered to the White Mesa Mill from Shipper, if such damages or liability, in any way whatsoever, results from the failure of the Byproduct Material to conform to the terms of this Agreement or the data supplied on any of the reports, logs or forms provided by Shipper, or said shipment fails to meet applicable standards prescribed by the Department of Transportation, or any other federal or state governmental agency, having jurisdiction over such matters, or which are related to breaches by Shipper of its representations, warranties or covenants made in this Agreement, or the failure of Shipper to comply with the terms and provisions of the Shipper's Radioactive Materials License, and/or any other permits or other applicable federal and state statutes or regulations, regardless of whether title to the Byproduct Material has passed to DMC under the terms of this Agreement.

10. PAYMENTS AND FEES. For all the Byproduct Material delivered to and disposed of by DMC, Shipper shall pay DMC as follows:

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A. Subject to the provisions of Section 11 hereof, Shipper shall pay DMC within thirty (30) days of receipt of an invoice therefor, the following disposal fees for quantities of Byproduct Material delivered for disposal, as indicated below:

- (i) For Byproduct Material consisting of soils, sand, gravel, rock, concrete rubble within size specification, and masonry-type demolition material: \$100.00 per ton.
- (ii) For Byproduct Material consisting of unpackaged pond sediments, PVC, fiberglass and process equipment and other miscellaneous items: \$120.00 per ton.
- (iii) For Byproduct Material consisting of packaged or drummed demolition and processed waste, including PVC, fiberglass, ion exchange resin, process equipment, and other miscellaneous items not included as bulk material: \$140.00 per ton.
- (iv) An unloading charge of \$45.00 per hour, or any part thereof, not to exceed \$135, will be made for unloading of each shipment at the White Mesa Mill.
- (v) A decontamination charge of \$150 per shipment for decontamination of the truck and container to meet the applicable NRC release standards as listed in Table 1 of the NRC "Guidelines for Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use or Termination Of Licenses For Byproduct, Source, or Special Nuclear Material," (May 1987) and the applicable Department of Transportation regulations contained in 49 CFR Part 173. DMC uses highpressure water to decontaminate equipment. In the event additional decontamination equipment or methods are required, additional charges will be applied equal to the cost for such additional decontamination reagents, man-hours, and equipment plus a fee of 10% thereon.
- (vi) Any truckload consisting of any combination of both A(i) and A(ii) will be charged at the rates provided in A(ii).
- (vii) Any truckload consisting of any combination of either A(i), A(ii) and A(iii) will be charged at the rates provided in A(iii). As used herein, "ton" shall mean 2,000 pounds. The determination of "cubic feet" shall be based on the shipping container volume.

DMC will provide Shipper with a copy of DMC's scale ticket to support DMC's weight measurement and subsequent invoice.

B. The Utah State Radioactive Waste Tax applicable to the Byproduct Material disposed of at the White Mesa Mill shall be paid by Shipper.

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C. All sales and use taxes, that are applicable to the services covered herein, shall be paid by Shipper.

11. FEE REVIEW AND INCREASE.

A. Any material increase of DMC's costs of operation, due to regulatory requirements, shall be charged to the Shipper, in a fair and reasonable proportion, from the date a particular requirement becomes effective; provided, however, that DMC shall give Shipper at least 60 days advance notice of any such increase and the increase shall only apply to shipments made after the expiration of such 60 day notice period.

B. On each anniversary of the date hereof, during the Term, the fees set out in Paragraph 10A, as they may have been previously adjusted pursuant to this Section 11, shall be adjusted by multiplying each such fee by the sum of 1 plus the percentage increase in the Price Index over the 1 year period ending on the date of such adjustment.

For the purpose of this Paragraph 11B, the term "Price Index" shall mean the General Producer's Price Index for Finished Goods as published by the United States Department of Labor, Bureau of Labor Statistics for the closest month ending prior to the adjustment dates.

12. INSPECTIONS. Shipper's representatives, as designated to DMC in writing, shall have the right to inspect DMC's White Mesa Mill facilities which are related to receipt, handling, and disposal of the Byproduct Material, at reasonable times and frequency designated by DMC, and upon at least seven days written notice from Shipper. Shipper shall also have the right to inspect, upon reasonable notice, DMC's licenses and permits to receive, handle and dispose of Byproduct Material at the White Mesa Mill facility. Such inspections shall be at the sole cost and risk of Shipper's participating representatives, and shall not interfere with DMC's operations at the White Mesa Mill.

13. SAFETY. Shipper, its employees, all its contractors and subcontractors ("Shipper's Personnel"), shall abide by all health, safety, and security rules and regulations in force at the White Mesa Mill, or on any property controlled by DMC or Denison White Mesa, LLC. while they are present on the premises. Shipper shall indemnify and hold harmless DMC and Denison White Mesa, LLC. for any loss or damages, including reasonable attorney's fees, suffered by DMC or Denison White Mesa, LLC. resulting from the failure of Shipper's employees, contractors or subcontractors to comply with the terms of this Paragraph 13.

14. TERMINATION.

A. This Agreement may be terminated by notice from either party in the event of

substantial failure by the other party to fulfill its obligations through no fault of the terminating party, provided that no such termination may be effected unless the other party is given not less than 15 business days written notice (delivered in person or by certified mail, return receipt requested) of intent to terminate, during which time the default may be cured and the Agreement reinstated.

B. If termination is caused by default of Shipper, Shipper shall pay DMC all sums due hereunder, through the date of termination.

C. In the event termination is caused by default of DMC, DMC will reimburse Shipper for all sampling and characterization costs incurred for any pending shipments and any transportation costs incurred for pending shipments.

D. In the event any one party shall have declared force majeure, as cited in Paragraph 25 herein, for any event or events cumulating over 60 days, the other party may terminate this Agreement by five days written notice.

15. CONFIDENTIALITY. DMC and Shipper shall endeavor to keep this Agreement and the terms and conditions contained herein confidential and shall not disclose same to third parties without the other party's prior written consent, which will not be unreasonably withheld, unless such disclosure is required pursuant to applicable law or regulation, including tax and securities laws and regulations, or for the purposes of the financing of either party or any of its affiliates. Either party may make such disclosures as it deems appropriate to affiliates, employees, agents, contractors or prospective purchasers, lessees or assigns, provided that any such persons are advised of this confidentiality clause and agree to be bound by it.

16. NOTICES. Except as specifically provided to the contrary in this Agreement, any notices or communications permitted or required hereunder shall be deemed properly transmitted when delivered in person or sent by mail, telecopy, or any other form of written communication, addressed to the respective party at the addresses listed below or at such other address as either party may notify that other in writing in accordance with the provisions of this Paragraph. Notices shall be deemed to have been given on the date of receipt.

IF TO DMC OR DENISON WHITE MESA LLC:

Denison Mines (USA) Corp. Independence Plaza, Suite 950 1050 Seventeenth Street Denver, Colorado 80265 Phone: (303) 628-7798 Fax: (303) 389-4125 IF TO SHIPPER:

URI, Inc. 711 N. Carancahua Street, Suite 600 Corpus Christi, TX 78475 Phone: (361) 883 - 3990 Fax: (361) 884 - 6744

17. SURVIVAL OF OBLIGATIONS. As provided in this Agreement, the obligations, representations and warranties of each party to the other, which are to be performed after termination, shall survive the termination of this Agreement regardless of the cause of termination.

18. GOVERNING LAW AND VENUE. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado.

19. INUREMENT. The terms and provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors, and permitted assigns. Provided, however, neither party shall assign or transfer any of its rights or obligations under this Agreement except with the prior written consent of the other party, and the written assumption by the transferee of all of the obligations of such assigning party in a form satisfactory to the other party. Either party's consent to one transfer shall not operate as a waiver of such party's rights as to any subsequent transfer or any subsequent transferee.

20. COMPLETE AGREEMENT AND AMENDMENT. This Agreement constitutes the full and complete understanding of the parties with respect to the subject matter hereof and supersedes any prior agreement, oral or written, relating thereto. This Agreement shall not be amended except in writing, signed by both parties, unless otherwise provided for within this Agreement. The parties hereto agree that any amendments that may be necessary to achieve or maintain compliance with any regulatory program that may apply to the subject of this Agreement shall be made as soon as practicable, provided, however, either party may elect to terminate this Agreement rather than agree to any amendment unless such amendment applies to Byproduct Material already disposed of at the White Mesa Mill, in which case the necessary amendment shall be made.

21. HEADINGS. The paragraph headings used in this Agreement are for convenience only, and shall not be deemed part of this Agreement nor used in its interpretation or construction.

22. ARBITRATION. Any controversy or claim arising out of or relating to this Agreement or the breach thereof shall be resolved in accordance with the Commercial Arbitration Rules of the American Arbitration Association by one arbitrator. The selection of the Arbitrator shall be in accordance with such rules. The Arbitrator's decision shall be final and binding upon the parties hereto; and judgment upon the award may be entered in any court having jurisdiction. The parties shall each pay one-half of the fees and expenses of the Arbitrator except for all fees and expenses of its own witnesses and counsel. The arbitration shall be held in Corpus Christi, Texas. Disputes shall not interrupt operations or other actions contemplated herein.

23. COSTS AND ATTORNEY FEES. Except to the extent that such will be considered liquidated damages payable to Shipper under Paragraph 24 and/or to the extent a matter is submitted to arbitration under Paragraph 22, if it is necessary for either party to obtain legal representation to enforce any provision of this Agreement, the non-prevailing party agrees to bear the court costs and reasonable attorney fees of the prevailing party.

24. LIMITATIONS OF REMEDY. The parties agree that neither party shall be liable for any incidental and/or consequential damages of any nature claimed by the other party. If DMC is unable for any reason, except as a result of a breach of this Agreement by Shipper or an event of force majeure, to accept delivery and dispose of Byproduct Material of Shipper, Shipper's sole remedy in such an instance shall be a refund of any advance payments and costs incurred by Shipper for pending shipments, including transport costs from the Project to the White Mesa Mill and from the White Mesa Mill to the Project or another licensed disposal facility. Refund of such amount shall be considered as constituting liquidated damages, including any and all incidental and/or consequential damages that might be claimed by Shipper. The parties agree that such a refund is reasonable compensation, and not a penalty, for the reason that actual damages, if any that might be sustained by Shipper are uncertain and would be difficult to ascertain.

FORCE MAJEURE. Except for both parties' indemnification, the obligations of 25. confidentiality and Shipper's obligations to make payments, the obligations of either party shall be suspended to the extent, and for the period that performance is prevented by any cause, whether foreseeable or unforeseeable, beyond its reasonable control, including, without limitation, labor disputes (however arising and whether or not employee demands are reasonable or within the power of the party to grant), acts of God; laws, regulations, orders, proclamations, instructions or requests of any government or governmental entity whether federal, state or local; acts of war or conditions arising out of or attributable to war, whether declared or undeclared, terrorism, riot, civil strife, disobedience, insurrection or rebellion, fire, explosion, earthquake, storm, flood, sink holes, drought or other adverse weather condition, or any other cause whether similar or dissimilar to the foregoing, but specifically excluding increases in the costs of transportation or handling of Byproduct Materials. The affected party shall promptly give notice to the other party, as appropriate of the suspension of performance, stating therein the nature of the suspension, the reasons therefor, and the expected duration thereof. The affected party shall resume performance as soon as reasonably possible.

26. BOOKS AND RECORDS. Each party shall keep complete and accurate books and records respecting all matters covered by this Agreement, including without limitation, records of the quantities and disposition of all Byproduct Materials, which shall be open for inspection by the other party during business hours.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first set forth above.

DENISON MINES (USA) CORP. By:

URI, INC Bv

By signing below, Denison White Mesa, LLC fully and unconditionally guarantees the timely and complete performance of all of DMC's obligations under this Agreement.

Denison White Mesa, LLC

By : _____

Title: President

6. Wellfield Decommissioning

6.1. Introduction and Description

The Wellfield Decommissioning Budget includes the cost estimates for removing wellfield equipment from the Crownpoint site. All equipment used to circulate leach solution such a pumps and piping is assumed to be contaminated for the purpose of developing the budget and would be disposed in an U.S. NRC licensed waste disposal facility. All structures are considered non-contaminated and would be disposed of in a landfill.

After ground water restoration is complete, all well houses, header houses, laterals, and pipelines will be removed. The budget contemplates costs for disassembly, or demolition, loading, transportation and disposal at a NRC licensed facility³² or to the Red Rock landfill. Any vegetation, which has been disrupted, will be disked and re-seeded.

6.2. Budget Assumptions

The Wellfield Decommissioning Budget is formatted with the underlying assumptions integrated into the tabulation. The budget figures distinguish individually costs associated with break down, excavation, removal, loading, transportation and disposal costs.

Lateral and piping lengths were estimated from the COP schematic Figure 1.4-3. Unit cost calculations are shown in Attachment E-6-2. Well tubing decommissioning costs assumed nominal tubing lengths of 600 feet and 40 existing wells. This quantity of wells is what is needed to supply adequate water to the restoration operations. Other wellfield O & M costs are covered in the groundwater restoration budget.

The Wellfield Decommissioning Budget was developed with the assumption that all labor is contracted at a rate of \$120 per day or \$15 per hour. These are reasonable contract labor rates. Estimate labor time requirements are based on best professional judgment. Management will be provided from the site staff who will be available seven months after groundwater restoration is complete.

After all of the wellfield equipment is removed the entire wellfield area will be surveyed to assure that no residual contamination remains on the soil. Surveys will be conducted according to the according to the Procedure shown in Attachment E-6-2, and the hot spots are picked up and disposed of at a NRC licensed facility. The on site management described above would conduct these surveys.

Piping will be reduced in volume as indicated in the budget. Pipe volume calculations are shown in attachment E-6-2. The smaller diameter wellfield pipe and well tubing will be

³² For the purpose of this RAP, HRI assumed that the NRC licensed site would be the IUC White Mesa Mill near Blanding Utah. Projected unit disposal costs at the White Mesa Mill and the Red Rocks landfill are described in Attachment E-5-2.

Revised October 15, 2010

crushed. Larger diameter pipe will be cut into quarter strips for volume reduction. No credit is given for reduction in the size of pumps. No credit is given for salvage value.

For pipe transportation and disposal costs, a 50% void factor was included in all volume calculations. All disposal was priced at the bulk rate as shown in Attachment E-6-4. A contingency was included for health and safety supplies such as disposable uniforms and respirators.

The total cost wellfield decommissioning is projected to be \$419,192.

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ATTACHMENT E-6-1 WELLFIELD DECOMMISSIONING BUDGET

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November 19, 2001

Crownpoint Wellfield Buildings and Equipment Removal and Disposal

		Description	<u>Unit</u>	<u>Total</u>
I. –	Well	field Piping		
		Assumptions:		
		Total length of piping (ft)	259240	
		Labor included in per foot costs		
	Α.	Removal and loading		
		Wellfield piping removal unit cost (\$/ft of pipe)	0.36	
	-	Subtotal wellfield piping removal and loading costs	\$93,326	
	В.	Pipe crushing	0	
		Operator bourly rate	۲ ۲۱۶	
		East pipe per bour	300	
		Subtotal crushing cost	\$25 024	
	c	Transport and disposal costs (NRC-licensed facility)	φ 2 0,32 4	
	Ο.	Average diameter of pining (inches)	2	
		Crushed volume (# ³ /#)	0.012	
		Crushed volume (f^3)	2191	
		Volume for dispacel ecoupting $1000($ usid energy (\hat{a})	5161	
		Volume for disposal assuming 100% vold space (n)	0303	
		I ransportation and disposal unit cost (\$/π)	\$3.85	
	Mall	Subtotal weilfield piping transport and disposal costs	\$24,496	
	Toto	leid piping costs per weilleid		£4.43 747
	TOLA	weimeid piping costs		Ð143,747
П.	Well	Pumps and Tubing		
		Assumptions:		
		Ongoing pump and tubing removal costs included under		
		ground water restoration labor costs		
		40 production wells contain pumps and tubing		
	Α.	Pump and tubing transportation and disposal		
		Number of production wells	295	
		Number of injection wells	285	
		1 Pump volume		
		Number of production wells with pumps	40	
		Average pump volume (ft ³)	1	
		Pump volume per weilfield (ft ³)	40	
		2 Tubing volume		
		Assumptions:		
		Average tubing length/wellfield based on average		
		well depth minus 600 feet		
		Number of production wells with tubing	40	
		Average tubing length per well (ft)	600	
		l ubing length per wellfield (ft)	24000	
		Diameter of production well fiberglass tubing (inches)	2	
		Crushed volume reduction (ff/ft)	0.012	
		vveilfield pipe volume w 100% vold	589	
		volume of pump and tubing (ft')	629	
		Volume for disposal assuming 50% void space (ft)	944	
		Transportation and disposal unit cost (\$/ft)	\$3.85	
	_	Subtotal pump and tubing transport and disposal costs	\$3,632.76	
	Pum	p and tubing costs per wellfield		\$3,632.76

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111.	Buri	ed Trunkline		
	Leng	th of trunkline trench (ft)	62000	
	Α.	Removal and Loading		
		Main pipeline removal unit cost (\$/ft)	\$0.45	
		Subtotal trunkline removal and loading costs	\$27,900	
	В.	Pipe cutting		
		Number of operators	2	
		Operator hourly rate	\$15	
		Feet pipe per hour	100	
		Subtotal cutting cost	\$18,600	
	C.	Transport and disposal costs (NRC-licensed facility)		
		1 10" HDPE trunkline		
		Piping length (ft)	51000	
		Inj and ext length	102000	
		Cut volume (ft ³ /ft)	0.14	
		Cut volume (ft ³)	14280	
		2 14" HDPE trunkline		
		Piping length (ft)	11000	
		Inj and ext length	22000	
		Cut volume (ft ³ /ft)	0.24	
		Cut volume (ft ³)	5214	
		Total trunkline chipped volume (ft ³)	19494	
		Volume for disposal assuming 50% void space (ft)	29241	
		Transportation and disposal unit cost (\$/ft)	\$3.85	
		Subtotal trunkline transport and disposal costs	\$112.578	
	Trun	kline decommissioning costs		\$159,078
IV.	Well	Houses		
	Tota	quantity	40	
	Aver	age well house volume (ft)	12.5	
	Α.	Removal		
		Total volume (ft ³)	500	
		Demolition unit cost per WDEQ Guideline No. 12 (\$/ft ³)	\$0.15	
		Subtotal well house demolition costs	\$76	
	В.	Survey and decontamination		
		Assumptions:		
		Cost per well house	\$5	
		Subtotal Survey and decontamination costs	\$200	
	C.	Disposal		
		Total volume (yd3)	19	
		Volume for disposal assuming 10% void space (cy)	20	
		Unrestricted disposal cost of 26.7 \$/yd3	\$27.00	
		Subtotal unrestricted disposal costs	\$530	
	Well	house removal and disposal per wellfield		\$806

VI.	Hea	der Houses		
		Total quantity	28	
		Average header house volume (ft)	1600	
	Α.	Removal		
		Total volume (ft ³)	44800	
		Demolition unit cost per WDEQ Guideline No. 12 (\$/ft ³)	\$0.15	
		Subtotal building demolition costs	\$6,810	
	В.	Survey and decontamination		
		Assumptions:		
		Cost per header house	\$200	
		Subtotal survey and decontamination costs	\$5,600	
	C.	Disposal		
		Total volume (cy) assume 10% building volume	166	
		Volume for disposal assuming 10% void space (cy)	183	
		Unrestricted disposal cost of 26.7 \$/yd3	\$27.00	
		Subtotal on-site disposal costs	\$4,928	
	Hea	der house removal and disposal costs per wellfield		\$17,338
v .	Soil			
	Assu	umptions:		
		Acres of wellfield.	181	
		Surveys by staff.		
		Depth of contaminated soil (in)	2	
		Percent of wellfield contaminated	1	
		Soil analysis each	\$100	
	Α.	Survey costs		
		400 soil sample analysis	\$40,000	
		Flags, and supplies	\$4,000	
		Subtotal survey costs	\$44,000	
	В.	Disposal costs		
		Backhoe three week	\$4,530	
		Volume to disposal	13141	
		NRC disposal unit cost (ft3)	\$3.85	
		Subtotal NRC-licensed facility disposal costs	\$50,591	
	Well	field soil D & D costs		\$94,591
	тот	AL WELLFIELD BUILDINGS AND EQUIPMENT		
		REMOVAL AND DISPOSAL COSTS		\$419,192

November 19, 2001

ATTACHMENT E-6-2 BUDGET BACKUP

WELLFIELD PIPING REMOVAL MAIN PIPELINE REMOVAL PIPE VOLUMES REGULATORY GUIDANCE HRI CLOSEOUT PROCEDURE

WELLFIELD PIPING REMOVAL

Assumptions:

- 1. Trenching with backhoe at 1500 ft/day
- 2. Pipeline extraction and backfilling with backhoe at 1500 ft/day
- 3. Backhoe rental: \$750/week
- 4. Fuel cost: \$9/operating hour
- 5. Backhoe operation requires 1 worker at \$15/hour
- 6. Pipeline extraction requires 2 worders at \$15/hour (in addition to trackhoe operator
- 7. Operating schedule: 8 hrs/day, 5 days/week

Wellfield Pipeline Removal Costs per ft of Pipe

Equipment & Fuel

	<u>Weekiy</u>	Daily	Hourly	Per Foot
Backhoe	\$550.00	\$110.00	\$13.75	\$0.07
Fuel		\$72.00	\$9.00	\$0.05
Labor	**			
Backhoe operator		\$120.00	\$15.00	\$0.08
Pipeline extractors (2)		\$240.00	\$30.00	\$0.16
Totais			\$67.75	

Total Per Foot Cost

\$0.36

MAIN PIPELINE REMOVAL

Assumptions:

- 1. Trenching with trackhoe at 1,500 ft/day
- 2. Pipeline extraction and backfilling with trackhoe at 1500 ft/day
- 3. Trackhoe rental: \$1600/week
- 4 Fuel cost: \$9/operating hour
- 5. Trackhoe operation requires one worker at \$15/hour
- 6. Pipeline extraction requires 2 workers at \$15/hour (in addition to trackhoe operator)
- 7. Pipelines removed simultaneously
- 8. Includes removal of manholes
- 9. Operating schedule: 8 hours/day, 5 days/week

Main Pipeline Removal Costs per ft of Pipe

Equipment & Fuel

Trackhoe	<u>Weekly</u> \$1,200.00	<u>Daily</u> \$240.00	<u>Houriv</u> \$30.00	Per Foot \$0.16
ruei L'abor		φ/2.00	49.00	Ф 0.05
Trackhoe operator		\$120.00	\$15.00	\$0:08
Pipeline extractors (2))	\$240.00	\$30.00	\$0.16
Total Per Foot Cost				\$0.45

Hydro Resources, Inc.

PLANT SIGHT AND WELLFIELD CLOSEOUT AND REQUEST FOR LICENSE TERMINATION

Purpose

This document is HRI's Standard Procedure for sampling, surveys, and documentation methods for the final decontamination of the Churchrock/Crownpoint sites and is intended to be an integral part of the Churchrock/Crownpoint sites <u>Churchrock Section</u> <u>8/Crownpoint Plant Restoration Action Plan</u>.

Standards

The standard by which HRI will measure final decommissioning is the NRC adopted soil limits for radium-226 or radium-228 as described below.

The concentration of radium-226 or radium-228 in soil averaged over any 100 square meters (m²) shall not exceed the background level by more than:

A. 5 picocuries per gram (pCi/g) averaged over the first 15 centimeter (cm) of soil below the surface; and

B. 15 pCi/g averaged over 15-cm thick layers of soil more than 15 cm below the surface.

Instrumentation

When performing close out surveys, HRI will use a general-purpose survey meter such as a 1-inch by 1-inch sodium iodide probes in conjunction with an appropriate rate meter or other appropriate instrumentation, such as microroentgen meters. The chosen instrument will be appropriately calibrated and a daily efficiency check will be performed to assure the instrument is working properly. Shielding of the instrument may be used to eliminate background interference of measurements. All measurements will be taken at ground surface.

Survey and Sampling Procedures

A. Preliminary Survey Design

A grid spacing of 10 meters will be used on all affected areas. The survey technician along the entire length of the line will survey each grid line with readings recorded at 10-meter intervals.
Background radiation levels will be established by surveying areas adjacent to the survey area, which are not affected by facility operations. The survey locations, result, date, check source ID, and name of surveyor will be recorded in the field notes. Anomalously high survey readings will trigger sampling of the soil at the "hot spot" ¹ location.

Random samples will be collected from the survey area, with a minimum of three samples per acre. Any hot spots found during the first survey iteration will be decontaminated and then resurveyed. The final survey iteration will document the decontamination of those areas found to be contaminated in preceding survey iterations. The purpose of the survey program is to verify that soil limits for radium-226 or radim-228 is not exceeded.

B. Sampling Procedures

...

HRI's survey and sampling program will cover all areas within the license area including plant sites, previous wellfield locations and those locations adjacent to previous wellfields. During the first iteration of the close-out survey HRI will obtain a number of meter readings in the field, accompanied by soil samples at the same location to be analyzed in the laboratory for radium 226. Meter readings and soil samples taken at regular increments over the range found at the sight will be obtained.

Soil sample locations will be staked and marked for subsequent reference as necessary. The samples will be cored using a 4-inch barrel auger to a depth, as measured in place, of 0-15 cm. Where appropriate, a second lift will be taken to a depth, as measured in place, of 15-30 cm. Any vegetation and stones will be removed and the soil will be placed in a ziploc bag with the project site, project area, date, time, sampler, sample type, and sample ID clearly marked.

Cross contamination of the soil samples will be prevented by cleaning the auger after bagging each soil core.

Chain of Custody, recording the information on the label and any field measurements, or other data will be completed and then the samples will be delivered to a commercial laboratory.

Following laboratory analysis, the meter readings and the laboratory results will be compared as shown in the hypothetical example below. With the laboratory and survey site correlation available, HRI will develop a calibration curve for the purpose of determining what levels of activity measured by survey meter correspond to actual concentration in soil. Hypothetical data and the resulting calibration curve are shown



¹ A hot spot is considered to be an area with a reading equal to or greater than the background multiple based on correlation of the laboratory instrument readings or an area with a radionuclide concentration sufficiently high such that the average for the 100-m2 area will exceed the soil contamination limits.

below. Site data will define the actual remediation targets, however based on past experienced it is anticipated that survey meter gamma radiation levels that are 2 - 3 times background will indicate Ra- 226^2 levels above levels 5-pCi/g and trigger further remediation effort.

СРМ	Ra-226 pCi/g	X-Bkg.
2000	1	1
3000	1.9	1.5
4000	3.1	2
5000	3.9	2.5
6000	5	3
7000	5.9	3.5
8000	7.1	4
9000	7.9	4.5
10000	9	5
11000	10.1	5.5
12000	11.1	6
13000	11.9	6.5
14000	13.3	7
15000	13.9	7.5
16000	15	8
17000	16.5	8.5
18000	17.8	9
19000	18	9.5
20000	18.5	10

HRI will average the concentrations of radium-266 over the first 15 cm of soil below the surface in a 100-m² area. In soil more than 15 cm below the surface, the concentrations may be averaged in 15-cm layers in a 100-m² area. HRI will, at a minimum, sample the initial 15-cm layer (0-15 cm) and the second 15-cm layer (15-30 cm) if concentrations in the initial 15-cm layer indicate deeper sampling is necessary. A minimum of five samples from each layer will be collected within the 100-m² area and composited for analysis.



When sampling a contaminated area, which is less than 100 m^2 , the hot spot will be sampled as part of a single 100-m2 area. If contamination occurs in long narrow strips, 1 meter wide or less, HRI may divide the contaminated area into more than one sampling area of 100 m² each. The dimensions of the sampling area will not be narrower than 5 meters on any boundary.

All areas, which are surveyed and sampled, will be accurately identified on a scaled map of both the Churchrock and Crownpoint sites. The site plan will include, but not be limited to, accurate property boundaries, fences, all state, county, and private roads, location of all existing facilities, delineation of all wellfields, a north arrow, the related graphic scale, and all pertinent information found in typical site plans. A qualified laboratory will analyze all samples.

Request For NRC Confirmation Survey and Sampling

When the HRI is confident that the Churchrock and Crownpoint sites are acceptable for release for unrestricted use, a written request asking for release for unrestricted use will be submitted to the NRC. The information discussed above will be submitted in a comprehensive report accompanied by survey and sample results that show that contamination is less than the limits specified above

The report with the request asking for release for unrestricted use will contain the following information.

A. A scaled survey map as described above, which provides coordinates of the area surveyed.

- B. A narrative describing the conditions before decommissioning.
- C. A narrative describing each phase of the cleanup as follows:
 - 1. Churchrock wellfield surveyed areas, recorded results, decontaminated hot spots, disposed of contaminated soil, final conditions.
 - 2. Churchrock Satellite –equipment decontaminated, removed and disposed, break-up pad discussion, decontamination of pad discussion, dispose of clean concrete, disposed contaminated material resulting from pad cleanup (including equipment), survey of plant area, decontaminated soil in plant area and soil which was beneath the pad, disposal of contaminated soil.
 - d. Crownpoint Process Plant –equipment decontaminated, removed and disposed, break-up pad discussion, decontamination of pad discussion, dispose of clean concrete, disposed contaminated material resulting from pad cleanup (including equipment), survey of plant area, decontaminated soil in plant area and soil which was beneath the pad, disposal of contaminated soil.
 - e. Zamzow Wellfield surveyed areas, recorded results, decontaminated hot spots, stockpiled and/or disposed of contaminated soil, final conditions.
- 4. Any unusual or other discussion topics.

DEPARTMENT OF ENVIRONMENTAL QUALITY LAND QUALITY DIVISION



GUIDELINE NO. 12

• STANDARDIZED RECLAMATION PERFORMANCE BOND FORMAT AND COST CALCULATION METHODS

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π	STANDARDIZED RECLAMATION BOND RORMAT											
44 •	A Area Rond A	." L										
	1 Introduction A	· . I										
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INTRODUCTION

This document is a <u>Guideline only</u>. Its contents are not to be interpreted by the applicant/permittee or Wyoming Department of Environmental Quality (WDEQ) staff as mandatory. This Guideline intends to assist applicants/permittees in understanding and attaining the requirements of the Wyoming Environmental Quality Act (WEQA) and Land Quality Division (LQD) Rules and Regulations addressing bonding topics.

This Guideline was developed as a joint project of the Wyoming Mining Association (WMA) Reclamation Subcommittee and the LQD. The LQD has and intends to selectively and periodically publish updated versions of the Cost Calculation Methods as contained in the various Appendices.

APPLICABLE WEQA STATUTES AND LQD RULES AND REGULATIONS

This is a general summary of items from the WEQA.

W.S. §35-11-417:

Outlines some general provisions applying to initial bond and renewal bond values. This statute outlines the concept of Partial Bond Release.

W.S. §35-11-418: Outlines acceptable bond vehicles.

W.S. §35-11-423: Outlines procedures for bond release for coal and other mineral permittees.

W.S. §35-11-411(d): Authorizes the WDEQ Director to establish the bond amount based upon information submitted in the annual report, an inspection and other materials.

These items in LQD Rules and Regulations have some applicability to bonding.

Coal Rules and Regulations, Chapter 1, Section 2.(k) and Noncoal Rules and Regulations, Chapter 1, Section 2.(i) defines bond.

Coal Rules and Regulations, Chapter 2, Section 3.(b)(xxi) requires that shared structures be cross-referenced in the bonds of applicable coal permittees.

Coal Rules and Regulations, Chapter 4, Section 2.(d)(ix) establishes a minimum ten (10) year bond period for coal permittees.

Coal Rules and Regulations, Chapter 11 and Noncoal Rules and Regulations, Chapter 6 outlines definitions and procedures for the self-bond program.





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Coal Rules and Regulations, Chapter 12 applies exclusively to coal permittees. Section 2.(a) defines the Area and Incremental Bonds. Section 2.(b) elaborates further bond data requirements. Section 2.(d) explains the liability areas and periods for the Area and Incremental Bonds. Section 2.(e) distinguishes among and establishes procedures for bond adjustments versus bond reductions versus partial bond releases. Sections 2.(f) through (h) address requirements for specific bond vehicles.

Coal Rules and Regulations, Chapter 14, Section 4. and Noncoal Rules and Regulations, Chapter 8, Section 3. require a bond for exploration by drilling.

Coal Rules and Regulations, Chapter 15 outlines procedures for partial or complete release of coal permittee bonds.

Noncoal Rules and Regulations, Chapter 9, Section 2. discusses bond requirements for conversion of a non-coal Small Mine Permit to a Regular Mine Permit.

Coal Rules and Regulations, Chapter 20 and Noncoal Rules and Regulations, Chapter 12 details information on Letters of Credit used as a bond vehicle.



I. COST EXPLANATION FOR ITEMS USED IN STANDARDIZED RECLAMATION BOND COSTS

Equipment sizes (loaders, trucks, scrapers, motor graders, etc.) were selected and agreed upon by the WMA Committee and WDEQ/LQD based on the usual types of equipment contractors normally have available for use. Costs for other equipment may be calculated by using methodologies as shown in this package.

Owning and operating costs were determined, except where noted, by using the <u>Dataquest</u> <u>Cost Reference Guide</u> (DQCRG). The total owning and operating costs have been adjusted in this package to reflect wholesale prices rather than retail. To do this, a ten percent reduction has been made to DQCRG costs.

Costs for the electric shovel and the trucks associated with the shovel were determined from Western Mine Engineering, Inc. Surface Mine Estimator's Guide (Oct. 1997 Version). There was no adjustment factor used for these costs since they are based on actual costs at mining operations in the United States.

A standard efficiency factor of 0.83 is incorporated into all production calculations. The factor accounts for a fifty-minute work hour as recommended by many cost references.

Labor costs were obtained from the <u>Wyoming Department of Transportation</u>. <u>Wage</u> <u>Determination Decision</u> (1997) with an additional 25 percent for benefits, unemployment insurance, social security, etc.

Supervision costs were determined by adding \$5.00 per hour to labor costs and also include the 25 percent add-on for benefits, etc. In most cases, only a portion of a supervisor's costs is applied to each task. Theoretically, this allows one supervisor the flexibility to oversee many jobs or pieces of equipment at the same time.

The supervisor's transportation is also divided among tasks. For example, where one-half of a supervisor's time is allotted, the same amount of time is used in calculating his transportation costs.

Where only a portion of support equipment are used in a calculation (i.e., one-half water truck), it is assumed that the equipment in question services more than one area.

Equipment Type	Equipment Name	DQCRG Book Cost (\$)	Multi- plier (%)	Adj. Cost (\$)	Date
Dozer	Caterpillar D9R (SU)	113.60	90	102.24	3/98
Blade	Caterpillar 16H	72.79	90	65.51	3/98
Scraper	Caterpillar 657E P-P	221.51	90	199.36	3/98
Truck (95 ton)	Caterpillar 777D	170.45	90	153.41	3/98
Loader (131/2 yd3)	Caterpillar 992D	192.26	90	173.03	3/98
Loader (514 yd3)	Caterpillar 980F	64.38	90	57.94	3/98
Dozer	Caterpillar D10R (SU)	148.97	90	134.07	3/98
Dozer	Caterpillar D11R (U)	223.85	90	201.47	3/98
Dozer	Caterpillar D9N (U)	105.11	. 90	94.60	3/98
Backhoe Loader	Caterpillar 428B (2WD)	16.74	90	15.07	3/98
Water Truck	14,000 Gallon	135.22	90	121.70	3/98
Dump Truck	10-12 yd3	29.47	90	26.52	3/98
Pickup Truck	Crew 4x4 3/4T (Gas)	9.74	90	8.77	3/98
Pickup Truck	Crew 4x4 3/4T (Diesel)	7.85	90	7.07	3/98
Tractor	MF 50EX 4WD 74 H.P.	9.11	90	8.20	3/98
Towed Mower	Flail 7 ft	1,28	90	1.15	3/98
Rubber Tired Dozer	Caterpillar 834B	96.00	90	86.40	3/98
Scraper	Caterpillar 637E P-P	169.05	90	152.15	3/98

Table D-1. Operating Costs and Adjusted Costs (\$/Hour w/o Operator) For Equipment in This Standardized Bond Format

Table D-1a. Purchase Price, Lease Cost, and Operating Costs for 56 CY Electric Shovel and 793C Trucks

Operators that use the truck/shovel appendix must show a regrading plan that is suitable for a large shovel/truck operation. Many backfill operations are not suited for this type operation because the cuts are not thick enough to allow the shovel optimum digging depths, highwall reduction with dozers takes up a large percentage of the required backfill, and there is insufficient backfill to justify this large shovel/truck fleet.

Operators using the shovel/truck appendix should submit suitable cut and fill isopachs that support the choice of this backfill method.

This method is not to be used for topsoil movement from native areas or from stockpiles.

The \$7,988,916.00 purchase price of the 56 CY shovel must be added to the bond costs. There is no profit or other contingency items added to this cost so it can be added to the bond cost after all the line items and add-ons have been totaled. No salvage value is allowed at the end of the project.



 56 CY Electric Shovel
 \$7,988,916.00 (WME)

 Purchase Price
 \$7,988,916.00 (WME)

 Productivity - 56 CY x 1 pass/35 sec. x 3,600 sec./hr. x 0.968 bucket fill factor = 5,576 CY/hr.
 5,576 CY/hr. x 0.8696 BCY/LCY (15% swell of BCY) = 4,849 BCY/hr.

 4,849 BCY/hr. x 0.8333 (operating efficiency) = 4,040 BCY/hr.

Hourly Costs (WME)

Parts	Mäint. Labor	Elect	. 1	ube	Total		
\$55.94	\$46.23	\$123	.64 \$	\$22.83 \$248.64			
Caterpillar 79 Purchase Pric Monthly Lea Hourly Lease	<u>23C Trucks (240 Tr</u> ce ce se (@600 hr./montl cost	<u>)</u> h)			\$2,539,800.00 (WME) \$45,000.00 \$75.00		
•		Hourly	Costs (WME)				
Parts \$23.04	<u>Maint. Labor</u> \$16.32	Fuel \$26.05	Lube \$16.80	<u>Tires</u> \$35.94	Total \$118.15		

CPH -	Caterpillar Performance Handbook (Edition No. specified where appropriate)
DQCRG -	Dataquest Cost Reference Guide (date of data indicated)
WYDOT-WDD -	Wyoming Department of Transportation - Wage Determination Decision (1997 Version)
WME -	Western Mine Engineering, Inc. (Oct. 1997 Estimating Guide)
BCY -	Bank Cubic Yard
LCY -	Loose Cubic Yard
MPH -	Miles Per Hour
BHB -	Black Hills Bentonite Corporation
AML -	DEO Abandoned Mine Land Reclamation Program

Abbreviations Used in This Standardized Bond Format

II. STANDARDIZED RECLAMATION BOND FORMAT

Individual items may be expanded as necessary or noted as not applicable based upon the specific reclamation practices approved in each permit.

A. Area Bond

Table D-2.

The Area Bond covers the costs of backfilling and rough grading (and special reconstruction techniques when specifically approved) according to procedures and postmining topography approved in the current term permit.

1. Introduction

Present a general discussion of assumptions, calculations, procedures, methods, etc. for summarizing or documenting calculations.

2. Backfill

Describe equipment, procedures, volumes, and costs for bringing all pits to an interim/bond topography with reference to a quality, current map of the project site. The interim/bond topography must come as close as possible to the approved final topography. acknowledging that the current mine site differs from the final configuration.

Appendices A through F detail equipment fleets and costs for this reclamation activity.

Operators should clearly show cut and fill areas and the associated haul distances and grades on a map.

This section should clearly list overburden Drilling and Blasting cost at \$0.10/BCY when applicable.

3. Rough Grade Backfill

Describe procedures and costs for shaping interim/bond topography with reference to a quality map. NOTE: Depending upon permit approved backfill practices, rough grading may not be a necessary line item bond cost.

Appendices G and M detail equipment and costs for this reclamation activity.

4. Final Grade Backfill

Describe equipment, procedures, and costs for specific site tasks (e.g., drainage reconstruction or permit-specific postmining features).

Appendix G details equipment and costs for this reclamation activity.

B. Incremental Bond

1. Introduction

The Incremental Bond covers all other costs beyond those detailed in the Area Bond.

Present a general discussion of assumptions, calculation procedures, methods for summarizing or documenting calculations, etc.

2. Native Topsoil Removal From Borrow and/or Backslope Areas

If applicable, describe equipment, volumes, haul routes, and costs with reference to a quality, current map of the project site.

Appendices A, B, C, E, F and G detail potential equipment and costs for this reclamation activity.

3. Native Overburden Removal From Borrow and/or Backslope Areas

If applicable, describe equipment, haul routes, volumes, and costs with reference to a quality, current map of the project site.

Appendices A through G detail potential equipment and costs for this reclamation activity.

4. Miscellaneous Overburden Redistribution

Describe equipment, haul routes, volumes, and costs (with reference to a quality map) for backfilling structures, such as:



- scoria or shale pit(s)
- diversion ditches
- access/haul road cut or fill
- railroad cuts/embankments

- sediment ponds
- sewage lagoons
- culverts
- other

Appendices A through G (excluding D) detail potential equipment and costs for this reclamation activity.

5. Demolition

Equipment, procedures, and costs for demolition and disposal of each individual structure should be described in terms of size, type of construction, etc. so that appropriate demolition costs can be estimated, such as:

- fences
- power lines, transformers
- hard-surfaced roads
- bridges
- abandoned equipment (i.e., draglines, shovels, drills and pieces of same)
- culverts
- railroads (rails, ties, ballast, scales, etc.)
- facility buildings (shops, warehouse, offices, etc.)
- mineral handling facilities (truck dumps, conveyors, silos, scales, etc.)
- support facilities (ready line, fuel tanks, water tanks, equipment yards, explosive storage sites, electrical substations)

Appendices H through K contain costs for these reclamation and demolition practices.

6. Removal of Monitoring Structures and Other Miscellaneous Items

Describe the procedures, equipment, and costs required to properly abandon or remove and disposal of items, such as:

- groundwater monitor wells
- all other operator-owned wells within the permit area
- surface water monitoring stations
- all other experimental study sites within the permit area
- meteorological/air quality monitoring sites

Appendices L through O detail equipment and costs for these reclamation practices.

7. Scarification or Ripping of All Compacted Surfaces

Describe equipment, procedures, and costs (preferably on a per acre basis) with reference to a quality, current map of the project site.



Appendices II and P detail costs for this reclamation practice.

8. Topsoil Redistribution on All Disturbed Areas

Describe equipment, procedures, and costs with reference to a quality, current map of the project site. The map should show haul distances and grades.

Appendices B and C detail equipment and costs for this reclamation activity.

9. Revegetation of All Disturbed Areas

Describe equipment, practices, and costs (preferably on a per acre basis), including:

- seedbed preparation
- mulch (purchase and application)
- seed (purchase and application)
- fertilizer (if required, purchase and application)
- post-seeding maintenance over the minimum bonding period (e.g., weed control, mowing, interseeding). Operators suggest that a ten percent line item should cover this issue for the entire bonding period.

Appendix Q outlines a cost calculation process for this reclamation activity. The costs must be calculated using the specific seed mixes and practices from the approved term permit.

- 10. Reclamation Status and Bond Liability Status of All Lands Within the Permit Area
 - a. Land Status Categories

The bond calculation should describe the status of all lands within the permit area. Each land status category should be clearly identified on a quality map and crossreferenced to specific reclamation cost for each category. The LQD also prefers a tabular summary of the acreage for each category.

LANDS THAT HAVE BEEN TOPSOILED AND SEEDED BUT HAVE NO BOND RELEASE MUST BE BONDED FOR RETOPSOILING, SCARIFICATION, AND REVEGETATION. [see Section 10.b.(2)(b)ie) on page 10]

- The following is a summary of generic land status categories. Section 10.(2) below details the information and calculations necessary for each of these categories.
 - (1) Native lands undisturbed at the time of this specific bond calculation and which will remain undisturbed under this bond calculation (e.g., no borrow areas necessary).

- (2) Lands disturbed and requiring backfilling, regrading and revegetation at the time of this specific bond calculation.
 - (a) Lands requiring assessment of Area Bond costs
 - (b) Lands requiring assessment of full or Incremental Bond costs
 - (c) Lands requiring assessment of partial Incremental Bond costs
 - i) Lands permanently reclaimed prior to December 31, 1982
 - ii) Lands permanently reclaimed after December 31, 1982
 - a) Lands with no approved Partial or Full Bond Release
 - b) Lands with approved 60 percent Partial Release of the Incremental Bond
 - c) Lands with approved larger percent Partial Release of the Incremental Bond
 - d) Lands with approved Full Release of Area and Incremental Bonds
- b. Line Item Bond Costs
 - (1) The bond covers lands currently disturbed by mining and associated activities and those lands to be disturbed in the next 12-month period.
 - (2) The bond should include costs for the Area Bond (through backfill, rough and final grading) for all open pits, impoundments, sediment ponds, diversions, etc.
 - (a) Section E.1 of this Guideline and its associated appendices detail procedures and costs for the Area Bond. The bond calculation-should detail costs for the operations listed in Sections E.1.B.), C) and D).
 - (b) Section E.2 of this Guideline and its associated appendices detail general categories and procedures for the Incremental Bond. Overall, the bond calculation should detail costs for the operations listed in Sections E.2.B) through I).
 - i) The bond calculation should assess the full suite of Incremental Bond tasks and costs for all disturbed lands which have no formally approved partial or full release of the Incremental Bond.

Historic LQD Administrator policy, LQD Coal Rules and Regulations Chapter 15 and W.S. §35-11-417(e) establish three (3) distinct categories of Partial Bond Release for permanently reclaimed lands.

a) Lands Permanently Reclaimed Prior to December 31, 1982

Prior to this date and prior to approval of the Wyoming State Coal Program, the LQD Administrator granted <u>de facto</u> Partial Bond Release for permanently reclaimed lands.

The LQD did not specifically approve or otherwise record this Partial Bond Release category, so there is generally no written approval letter.

The bond should specifically identify this Partial Bond Release category if it exists.

The bond should include a carry-over cost assessment for interseeding an appropriate, permit-approved seed mixture on these lands. These carry-over costs should include seed purchase and seed implantation.

b) 60 Percent Partial Bond Release

LQD Coal Rules and Regulations Chapter 15, Section 5 (a)(i) allows for release of 60 percent of the Incremental Bond when the permittee has completed backfilling, regrading, topsoil replacement, and drainage control according to the approved term permit procedures.

This category of Partial Bond Release requires formal, written approval by the DEQ. Director. If this release category exists for your specific permit, the bond calculation should include the date of the Director's approval letter.

The bond calculation should specifically identify this category and show the appropriate units on a quality map.

The bond calculation should specifically tabulate the residual 40 percent Incremental Bond costs (preferably on a per acre basis) as the appropriate carry-over cost assessment. As noted above, the Incremental Bond includes <u>all</u> term permit approved Reclamation Plan practices beyond rough grading of the backfill. The tabulation of the 40 percent Incremental Bond carry-over costs should detail all approved reclamation practices.

c) Larger Percentage of Partial Bond Release

LQD Coal Rules and Regulations Chapter 15, Section 5.(a)(ii)(A) allows more than 60 percent release of the Incremental Bond as determined by the LQD Administrator and DEQ Director.

W.S. §35-11-423(d) mandates development of specific rules and regulations for release of coal bonds. These rules are controlling not withstanding other provisions of W.S. §35-11-417 and §35-11-423 to the contrary.

LOD Coal Rules and Regulations, Chapter 15 is that formulation.

Coal Chapter 15 governs partial and 100 percent release of the Incremental Bond. For partial release, the amount remaining cannot be less than the cost of reseeding.

This category of Partial Bond Release requires formal, written approval by the DEQ Director. If this release category exists for your specific permit, the bond calculation should identify the date of the Director's approval letter.

The bond calculation should specifically tabulate the residual percentage Incremental Bond costs (preferably on a per acre basis) as the appropriate carry-over cost assessment. As previously noted, the Incremental Bond includes all term permit approved Reclamation Plan practices beyond rough grading of the backfill. The tabulation of the percentage Incremental Bond carry-over costs should detail all approved reclamation practices.

NOTE: The percentages of partial release of the Incremental Bond vary for Noncoal Permittees. A Noncoal Permittee seeking partial release should consult with the LQD.

d) Full Bond Release of the Area and Incremental Bonds

This category includes all land permanently reclaimed and formally released under provisions of the 1973 Environmental Quality Act and LQD Coal Rules and Regulations Chapter 15.

Full Bond Release requires formal, written approval by the DEQ Director. If this category exists for your specific permit, the bond calculation should list the date of the DEQ Director's Full Bond Release decision.

e) Lands Permanently Reclaimed After December 31, 1982

This category includes all land permanently reclaimed that has no bond release.

These reclaimed lands must be bonded to scarify, retopsoil, and reseed. There are no provisions made for where the topsoil would come from. It is assumed that topsoil would be spread at the same average depth on these lands as it is on the rest of the areas requiring topsoil. Topsoil haul distance and grade used would be the weighted average used for the rest of the reclamation. Scarification and reseeding costs would be the same per acre as those used on other lands requiring reclamation. NOTE: The DEQ/LQD continues development of a DRAFT Guideline on Full and Partial Bond Release Procedures. Please consult with the LQD concerning the status of that Guideline, should you consider bond release for permanently reclaimed lands.

11. Coal Drilling

Describe the approximate number, depth, diameter, and location (show on inclusive map, if possible) of all holes drilled into or through coal during the current and next annual report period. A tabular format with reference to map locations may be an efficient presentation. This description should distinguish between coal drill holes which will be or have been removed by the pit advance within the annual report period versus those coal drill holes which will not be mined out in a report cycle. The operator may distinguish between abandonment/plugging procedures for the coal drill holes mined out in the report cycle versus the longer term abandoned holes. Each category should have a total line item cost entry in the bond. The LQD prefers that all coal drill hole reclamation costs be estimated according to Appendices L and M.

12. Miscellaneous Items

Each individual operator should identify these items as a line item or include each in some specific bond category. Otherwise, the LQD will enter the item as an addition to total dollar value of the Area and Incremental Bonds.

- a. COSTS FOR AN INDEPENDENT FIRM TO DESIGN THE FINAL RECLAMATION PROJECT: All design and engineering work (including field and office time) through production of construction documents should be included under this heading. At the least, some surveying and redesign of the operator's reclamation plan to fit the current situation would be required. Reference sources place this category at 2 to 6½ percent of the total bond cost. LQD typically uses 3 percent.
- b. CONTRACTOR PROFIT, OVERHEAD, MOBILIZATION AND DEMOBILIZATION COSTS: The Dataquest Cost Reference Guides used to construct the appendices do not include these costs. If an operator uses these appendices in bond calculations, there is still a need for this distinct line item cost in the bond. Assorted references place these items from 8 to 15 percent of the total bond cost. Presently LQD is using 10 percent.
- c. PRECONSTRUCTION INVESTIGATION AND STABILIZATION: This item addresses all field work necessary to document and mitigate dangerous and/or quickly deteriorating conditions, such as slumping highwalls or drainage problems. Any assessment under this item will be based upon the LQD's knowledge of specific site conditions and the length of time between cessation/forfeiture and initiation of the final reclamation project. When necessary, reference sources place this cost at 1 to 2 percent. LQD is using 1 percent.

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- d. COSTS FOR AN INDEPENDENT FIRM TO MANAGE THE FINAL RECLAMATION PROJECT: This category includes complete oversight of all demolition, construction, and reclamation activities. Probable tasks would include supervision of earthmoving and reclamation, construction surveying, and soil sampling. References place this cost at 3 to 4 percent. LQD uses 3 percent.
- e. COSTS FOR ON SITE MONITORING PROGRAMS FOR TEN YEARS AFTER COMPLETION OF THE FINAL RECLAMATION PROJECT (INCLUDES SUCH ITEMS AS UTILITIES AND GROUNDWATER SAMPLING): Costs of this item will vary depending upon specific permit commitments. The LQD uses a range of 1/2 to 2 percent. Usually LQD uses 0.5 percent.
- f. COSTS FOR SITE SECURITY DURING THE FINAL RECLAMATION PROJECT AND LIABILITY INSURANCE COST DURING THE FINAL RECLAMATION PROJECT AND OVER THE FULL BONDING PERIOD: References place this cost at about 1 percent of the total bond amount.
- g. LONG-TERM ADMINISTRATION AND ACCOUNTING COSTS: After completion of a major reclamation project, a minimum of five years (non-coal permits) or a minimum of ten years (coal permits) will expire before the LQD can move for final bond release. The LQD will incur additional administrative costs during this extended period. The scale of some coal reclamation projects may necessitate employment of an outside contractor.

The LQD uses a range of 1 to 2 percent for this category depending upon the scale and complexity of the reclamation and post-reclamation monitoring projects. Currently LQD uses 2 percent.

h. ANY OTHER SITE-SPECIFIC PERMIT COMMITMENTS SHOULD ALSO BE INCLUDED HERE: Costs will vary according to specific permit commitments.

The LQD has historically used the following sources to establish the range of percentages list in the Miscellaneous Items.

- * Means Heavy Construction Cost Data (current edition), published by R. S. Means Company, Inc., Kingston, MA
- * Means Site Work Cost Data (current edition), published by R. S. Means Company, Inc., Kingston, MA
- * Building Construction Cost Data (current edition), published by R. S. Means Company, Inc., Kingston, MA
- * Handbook for Calculation of Reclamation Bond Costs, 1987, Department of Interior, Office of Surface Mining Reclamation and Enforcement, Washington, D.C.

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13. Unknown Costs

The items under L) represent the usual contingency items applied to bonds. If these items are included as line items in the bond, the only remaining category could be unknown as per W.S. $\frac{535-11-417}{c}$ (ii). References place this cost at 2 to 5 percent of the total bond cost. Under normal circumstances LQD is using 4 percent.

14. References

List sources of information, procedures, costs, etc. which were used in the bond calculations.

15. Maps

This Guideline requests that the various tasks, operations; disturbed areas, reclamation areas, etc., be illustrated on or referenced to a <u>QUALITY</u>, <u>CURRENT MAP</u>. Several of the tasks may be illustrated on the same map. All maps presented in support of the bond calculations must be clear and legible contour maps or recent (with date) aerial photographs. The preferred scale is $1^n = 500^{\circ}$, unless it is necessary to directly compare (e.g., overlay) a bond map to an existing permit map. In this case the scales should be identical. Each map should be of a reasonable size, generally no larger than 48" on a side.

Each map must have a complete title block, including:

- Map title
- Name and address of permittee
- Permit number and term designation
- Annual report period
- Scale, north arrow, contour interval, date of photography or date of preparation

All maps must show and clearly label:

- Legal subdivisions with section, township, and range lines
- Permit area boundary and term boundary

III. APPENDICES

The following appendices are intended for use in this standardized bond calculation package. Any references to specific equipment should not be interpreted as a recommendation of any kind by any person, company or agency for the use of specific brand-name equipment.





Appendix A Calculations for Moving Materials With a Caterpillar 992D Loader and Caterpillar 777D Truck Pleet

NOTE: THESE COSTS ARE FOR EXCAVATION ONLY. MATERIAL REQUIRING BLASTING SHOULD HAVE AN ADDITIONAL \$0.10/BCY ADDED FOR DRILLING AND BLASTING COSTS. NOTE:

Material Movement By Londer-Truck Combination

*

1) Catemillar 992D Londer	12.1 BCY	CPH 25
2) Catamillar 777D Trucks (BS ton)	SES BCY	CPH 25
2) Mangala Provide Commence	2 850.0 LB/BCY	CPH 25
a) Chanting Effetinger Enter AD Min AA	0.43 \$	CPH 25
4) Operating Entereday Present (or Municip)	4.00 %	(TD14 25
5) Koling Kestime Partor		CONTINUE DE LA CALLAR DE LA CALLAR DE LA CALLAR
6) 777D Truck Operating Costs	SI33.41 Per Hour	Ana a number con reletance date
7) 992D Loader Operating Costs	\$173.03 Per Hour	90% DQCRG
B. Labor Costs	\$18.75 Per Hour	WYDOT-WDD
D 1/2 of 1 - 14 000 (Call Water Trucks + 1. Operator	\$70.23 Per Hour	1/2 of 90% DOCRG
10 1. Idl Dide for David Work 4 1 Operator	\$84.76 Per Hour	90% DOCRG + Operator
10) I. IDA BLEC IG ROBO WOIL TI OPLIAN	1120 00 Der Haute	90% DOCTO + Operator
11) 1 - D9R for Mise, Work + 1 Operator	\$120.77 FGI FROM	JUN DOCKO Y Opilia
12) Supervision Labor Costs	\$12.50 Per Hour	1/2 of WYDOT-WDD
13) Supervisor Transportation	S4.39 Per Hour	1/2 of 90% DQCRG
14). Total Fleet Hourly Costs (Except Trucks)	\$464.53	

Locate your approximate grade by reference to case number. Determine cost per BCY by using distance column that approximates your distance. No calculations are necessary. TO USE TABLE:

ase #1: Lovel Ground			Lords	d (0% grad	c + 4% roll	ng = 4% tota	l resistance)		Empty (0% grade + 4% total resistance)			
Line-Way Distance (FL)	Load Time (Mio.)	Mansuver Time (Min.)	Travel Time Loaded (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cyclo Time (Min.)	Tripa Per Hour	Payload (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjuited Loeder Productivity (BCY/Hr)	Number of Trucks Required	Oper Cos. (\$/BCY
: 500 ;	3.50	0.70	0.47	1.10	0.36	6.13	9,8	58,8	:479:6	840.0	1.75	\$0.91
1000	3:50	0.70	0.78	1.10	0.56	6.64	9.0	58:8	442.8	840.0	1.90	\$0.94
1500	3.50	0.70	1:06	1.10	0.74	7.10	8.5	58.8	414.1	840.0	2.03	\$0.97
2000	3.50	0.70	1.34	1.10	0.90	7.54	8,0	58.8	389.9	840.0	2.15	\$0.99
2500	3.50	0.70	1.60	1:10	1:06	7.96	7.5	58.8	369.3	840.0	2.27	\$1.02
3000	3.50	0.70	1.86	1.10	1.22	8.38	7.2	58.8	350.8	840.0	2,39	\$1.04
3500	3.50	0.70	2.11	1,10	1.39	8,80	6.8	58.8	334.1	840.0	2,51	\$1.0
4000	3.50	0.70	2:37	1.10	1.55	9.22	6.5	58.8	318.9	840.0	2.63	\$1.0
4500	3.50	0.70	2.63	1.10	1.71	9.64	6.2	5818	305.0	840.0	2.75	\$1.1
5000	3.50	0.70	2.89	1.10	1:88	10.07	6.0	58.8	292.0	840.0	2.88	\$1.1
5500	3,50	0.70	3.15	1.IÔ	2.04	10.49	5.7	58.8	280.3	840.0	3.00	\$141
6000	3150	0.70	3:41	1.10	2.21	10.92	\$.5	. 58.8	269.2	840.0	3212	\$1.1
6500	3.50	0.70	3.66	1.10	2.37	11.33	53	58.8	259.5	840.0	3.24	\$1.2
-	• (KO)	0.70	1 00	1-10	2 53	\$1:75	5.1	58.8	250.2	840.0	3.36	\$1.7

)persting Costs = (((/ Trucks x (Truck costs + Labor costs)) + Total Fleet costs)/Loader Productivity)

	Appendix A (Continued)	· · · · · · · · · · · · · · · · · · ·
Calculations for Moving Mal	terials With a Caterpillar 992D Los	ader and Caterpillar 777D Truck Fleet

r					Materi	al Movement	By Londer-T	ruck Combinati	ion .			
ac #2: 5%	Assisting G	adc	Lordi	2 (-5% grau	de + 4% rol	lling = .] % t	otal)	Empty (5	% grade + 4% reili	ng = 9% total)		<u>يو بر شاهم</u>
One-Way Distance (FL)	Lond Time (Min.)	Mancuvar Time (Min.)	Travel Teme Loaded (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cyclo Time (Mic.)	Trips Por Hour	Payload (BCY)	Adjusted Truck Productivity (BCY/Hz)	Adjunted Londer Productivity (BCY/Hz)	Number of Trucks Required	Operatin Costs (\$/BCY)
500	3:50	0.70	0.38	1.10	0.41	6.09	9.9	58.8	482.8	840.0	1.74	\$0.91
1000	3:50	.0.70	0.58	1.10	0.68	6.56	9.1;	:58.8	448.2	.840.0	1.87	\$0,94
1500	3.50	0.70	0.74	1.10	0.94	6.98	8.6	\$8.8	421.2	840.0	1.99	\$0.96
2000	3.50	0.70	0.89	1.10	1,18	7.57	8.1	58.8	398.9	840.0	2.11	\$0.99
2500	3.50	0.70	1.05	1.10	1.43	7.78	7.7	58,8	\$77.9	840.0	2.22	\$1.01
3000	3.50	0.70	1.20	1,10	1.68	8.18	73	58.8	359.4	\$40.0	2.34	\$1.0
3500	3.50	0.70	1.35	1.10	1.92	8.57	7.0	58.8	\$43.1	840.0	2.45	-\$1.00
4000	3.50	0.70	1.50	1.10	2,17	8.97	6.7	58.8	327.8	840.0	2.56	\$1.00
4500	3,50	0.70	1.66	1.10	2.42	9.38	6,4	58.8	313.4	.840.0	2.68	\$1.1
5000	3.50	0.70	1.81	1.10	2.66	9.77 ;	6.1	58.8	300.9	840.0	2.79	S1.1
5500	3.50	0.70	1.96	1.10	2.91	10.17	5.9	58.8	289.1	840.0	2.91	\$1,1
6000	.3:50	0.7 0	2.11	1.10	3.16	10.57	.5.7	.58.8	278.1	840.0	3.02	\$1.1
6500	3.50	0.70	2.27	1:10	3.40	10.97	5.5		268.0	840.0	3.13	\$1:1
7000	3.50	0.70	2.42	1.10	3.65	11.37	5.3	58.8	258.6	840.0	3:25	\$12

ase 13: 10% Assisting Grade			Loid	ad (-10% gr	ede + 4% n	ling = -6%	total)	Empty (10% grade + 4% rolling = 14% total)				
One-Way Distance (FL)	Lord Tens (Min.)	Mancuver Time (Min.)	Travel Time Londed (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjusted Leader Productivity (BCY/Hr)	Number of Trucks Required	Operating Costs (\$/BCY)
500	3.50	0.70	0.35	1.10	0:49	6.14	9.8	58.8	478.8	840.0	1.75	\$0.91
1000	3_50	0.70	0.52	1.10	0.90	6.72	8.9	58.8	437.5	840.0	1.92	\$0.95
1500	3,50	0.70	0.67	1.10	1.31	7.28	8.2	58.8	403.8	840.0	2.08	\$0.98
2000	5.50	0.70	0.82	1.10	1.72	7.84	7.7	SE.8	375.0	840.0	2.24	\$1.01
2500	3.50	0.70	0.97	1.10	2.13	8.40	7.1	58.8	350.0	840.0	2.40	\$1.04
3000	3.50	0.70 ⁻	1.13	1.10	2.54	8.97	6.7	.58.8	327.8	840.0	2.56	\$1.08
3500	3.50	0.70	1.28	1.10	2.94	9:52	6.3	58.8	308.8	840.0	2.72	\$1.11
4000	3.50	0.70	1.43	1.10	3.35	10.08	6.0	- 58.8	291.7	840,0	2.88	\$1.14
4500	3.50	0.70	1.59	1.10	3,76	10.65	5.6	58.8	276.1	840.0	3.04	\$1.18
\$000	3.50	0.70	1.74	1,10	4.17	11.21	5.4	58.8	262.3	\$40.0	:3.20	\$1.21
5500	3.50	0.70	1.89	1.10	4.58	11.77	5.1	58.8	249.8	840.0	3.36	\$1.24
6000	3.50	0.70	2.04	1.10	4.99	12.33	4:9	58.8	238:4	840.0	3.52	\$1.27
6500	3.50	0.70	2.20	1.10	5.40	12.90	4.7	58.8	227.9	840.0	3.69	\$1.31
	3.50	0.70	2.35	1.10	5.80	13.45	4.5	58.8	218.6	840.0	3:84	\$1.34

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	Appendix A (Continue	ch)	
Calculations for Moving Materials	With a Caterpillar 992D	Loader and Cater	pillar 777D Truck Ficet

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Case #1: 5%	Resisting Or	ndo	Lord	ed (S% grad	le + 4% roll	ing = 9% to	ها)		Empty (-5% grade	+ 4% rolling = -	% total)	
Occ-Way Distance (PL)	Lond Time (Min.)	Mencuvar Time (Min.)	Travel Time Londod (Min.)	Dump Time (Min.)	Travel Time Banpty (Idin.)	Total Cyclo Time (Min.)	Trips Per Hour	Payland (BCY)	Adjusted Truck Productivity (BCY/Hz)	Adjusted Londer Productivity (BCY/Hz)	Number of Trucks Required	Operating Costs (\$/BCY)
500	3.50	0.70	0.66	1.10	0.33	6.29	9.5	58.8	467.A	840.0	1.60	\$0.92
1000	5.50	0.70	1.23	1.10	0.50	7.03	\$.S	58.8	418.2	840.0°	2.01	\$0.97
1500	3.50	0.70	1.81	1.10	0.65	7.76	7.7	58.8	577.5	840.0	2.23	\$1.01
2000	5.50	0.70	2.38	1.10	0.81	8.49	7.1	58.8	347.9	840.0	2.41	\$1.05
2500	3.50	0.70	2.95	1.10	0.96	9.21	6.5	58.8	318.5	840.0	2.64	\$1.09
3000	350	0.70	3.53	1.10	1.11	9.94	6.0	58.8	294.0	840,0	2.86	\$1,14
3500	3.50	0.70	4.10	1.10	1.26	10.66	5.6	58.8	274.4	840.0	3.06	\$1.18
4000	3.50	0.70	4.68	1.10	1.42	11.40	5.3	58.8	259.7	840.0	3.23	\$1.22
4500	3.50	0.70	5.25	1.10	1.57	12.12	5.0	58.8	245.0	840.0	3:43	\$1.26
5000	3:50	0.70	5,82	1.10	1.72	12.84	4.7	58.8	230.3	840.0	3,65	\$1.30
5500	3,50	0.70	6.40	1.10	1.87	13.57	4.4	. 58.8	215:6	840.0	3,90	\$1.35
6000	3.50	0.70	6.97	1.10	2.03	14.30	4.2	58.8	205.8	840.0	4.08	\$1.39
10	3.50	0.70	7.54	1.10	2.18	15.02	4.0	58.8	196.0	840.0	4.29	\$1.43
	3.50	0.70	8.12	1.10	2.33	15.75	.3.8	58.8	186.2	840.0	4.51	\$1:48

Material Movement by Londer-Truck Combination

Case #5: 10%	Resisting G	iradc	Londr	ad (10% gra	de + 4% rol	ling = 14%	total)		Empty (-10% grad	le + 4% rolling =	6% total)	
One-Way Distance (FL)	Lond Time (Min.)	Mancuver Time (Min.)	Travel Time Loaded (Min.)	Dump Tunc (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Paytond (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjusted Leader Productivity (BCY/Hr)	Number of Trucks Required	Operating Costs (S/BCY)
500	3.50	0.70	0.94	1.10	0.33	6.57	9.1	58.8	445.9	840.0	1.88	\$0.94
1000	3.50	0.70	1.83	1.10	0.49	7.62	7.9	58.8	387.1	840.0	2.18	\$1.00
1500	3:50	0.70	2.72	1.10	0.64	8.66	6.9	58.8	338.1	840.0 ₂	2.47	\$1.06
2000	3.50	0.70	3:60	1.10	0.79	9.69	6.2	58.8	303.8	840.0	2.77	\$1.12
2500	3.50	0.70	4.49	1.10	0.94	10,73	5.6	.5818	274.4	840.0	3.07	\$1.18
3000	3:50	0.70	5.38	1.10	1.10	11.78	5.1	58.8	249.9	840.0	3.37	\$1:24
3500	3.50	0.70	6.26	1.10	1.25	12.81	4.7	58.8	230.3	840.0	3.66	\$1.30
4000	3.50	0.70	7.15	1.10	1.40	13.85	4.3	58.8	210.7	840.0	3.96	\$1.36
4500	3.50	0.70	8.04	1:10	1.55	14.89	4.0	- 58.8	196.0	840.0	4.25	\$1.42
5000	3.50	0.70	8.94	1.10	1:71	15:94	3.8	58.8	186.2	\$40.0	4.55	\$1.49
\$500	3.50-	0.70	9.81	1.10	1,86	16.97	ېد	58.8	171.5	840.0	4.85	\$1.55
6000	3,50	0.70	10.70	1.10	2.01	18.01	3:3	58.8	161.7	840.0	5,15	\$1.61
o	3.50	0.70	11.59	1.10	2.16	19.05	-3:1	58.8	151.9	840.0	5.44	\$1.67
	3.50	0.70	12.48	1.10	2.32	20.10	3:0	58.8	147.0	840.0	5:74	\$1.73

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Appendix B Calculations for Moving Materials With a Caterpillar 657E Push-Pull Scraper Fleet

DRILLING AND BLASTING COSTS ARE NOT INCLUDED IN THESE CALCULATIONS. THE LOD DOES NOT CONSIDER DRILLING AND BLASTING COSTS NECESSARY WHEN USING APPENDIX C. NOTE:

Material Movement By Scrapers

1) Catemiller 657E Dick Dill Serener		
2) Material Density	2,850. LB/BCY	CPH 25
3) Payload	104,000. LB	CPH 25
	35:0 BCY	
4) Maximum Vehicle Speed Loaded	34.9 MPH	CPH 25
5) Operating Efficiency Factor (50 Min./Hr.)	-0.83 %	CPH 25
6) 657E PP Operating Costs	\$199.36 Per Hour	90% DQCRG
7) Labor Costs	\$18.75 Per Hour	WYDOT-WDD
8) Supervision Labor Costs	\$3:13 Per Hour	1/8 of WYDOT-WDD
9) Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% DQCRG
10) 1/8 of 1 - 14,000 Gal. Water Trucks + 1 Operator	\$17.56 Per Hour	1/8 of 90% DOCRO
11) 1/8 of 1 - 16H Blade for Roed Work + 1 Operator	\$10.53 Per Hour	1/8 of 90% DQCRG
12) 14 - D9R for Ripping Ovb. and Miss. Work + 1 Operator	\$60.50 Per Hour	14 of 90% DQCRO
13) Total Hourity Costs	\$310.93	

TO USE TABLE: Locate your approximate grade by reference to case number. Determine cost per BCY by using distance column that approximates your distance. No calculations are accessary.

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Level O	round	Lord	cd (0% grade + 4	% rolling = 4	% LOLA])		Empty (0%	grade + 4% rollin	g = 4% (otal)	
One-Way Distance (FL)	Lond Time (Min.)	Travel Time Losded (Min.)	Mancuver A Spread Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (S0 min/hr)	Adjusted Productivity (BCY/Hr)	Operating Costs (S/BCY)
500	1.10	0.42	0.60	0.36	2.48	24.2	35.0	0.83	706	\$0.44
1000	1.10	0.68	0.60	0.57	2.95	20.3	35.0	0.83	593	\$0.52
1500	1.10	0.92	0.60	0.75	-3.37	17.8	35.0	0,83	519	\$0.60
2000	1.10	1.15	0.60	0.92	3.77	15.9	35.0	0.83	464.	\$0.67
2500	1.10	1.37	0.60	1.09	4.16	14.4	35.0	0.83	421	\$0.74
3000	1.10	1.59	0.60	1.26	4,55	13.2	35.0	0.83	385	\$0.81
3500	1.10	1,8)	0.60	1.44	4.95	12.1	35.0	0.83	354	\$0.88
4000	1.10	2.02	0.60	1.61	5.33	11.3	35.0	0.83	328	\$0.95
4500	1.10	2.22	0.60	1.78	5.70	10.5	35:0	0.83	307	\$1.01
5000	1.10	2.43	0.60	1.95	6.08	9.9	35.0	0.83	288	\$1.08
5500	1.10	2.64	0.60	2.13	6.47	9.3	35.0	0.83	270	\$1,15
6000	1.10	2.85	0.60	2.30	6.85	.8.8	35.0	0.83	255	\$1:22
.6500	1.10	3.05	0.60	2.47	7.22	8.3	35.0	0.83	242	\$1:28
7000	1.10	3.26	0.60	2.64	7.60	. 7.9	35.0	0.83	230	\$1.35

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· · ·	Appendix B (Continued)	
Calculations for Moving	Materials With a Catorpillar 657E Push-Pull Scraper Fl	bet

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Cam #2: 5% Assi	sting Grade	Lord	led (-5% grade +	4% rolling = .	1% total)		Empty (5%	 		
One-Way Distance (PL)	Land Time (Min.)	Travel Time Londed (Min.)	Maneuver & Spread Time (Min.).	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Tripe Per Hour	Payload (BCY)	Efficiency Factor (50 min/ht)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)
500	1.10	0.36	9.60	0.42	2.48	24.2	35.0	0.83	706	\$0.44
1000	1.10	0.54	0.60	0.71	2.95	20.3	35.0	0.13	593	\$0.52
1500	1.10	0.71	0.60	0.98	3.39	17.7	35.0	0.83	516	\$0.50
2000	1.10	0.87	0.60	1:25	3.82	15.7	35.0	0.83	458	\$0.68
2500	1.10	1.03	0.60	1.51	4.24	14.2	35.0	0.83	413	\$0.75
3000	1.10	1.19	0.60	1.78	4.67	12.8	35.0	0.83	375	\$0.83
3500	1.10	1.36	0.60	2.05	- 5-11	11.7	\$5.0	0.83	342	\$0.91
4000	1.10	1.52	0.60	2.32	5.54	10.8	35.0	0.83	316	\$0.98
4500	1,10	1.68	0.60	2.59	5.97	10.1	35.0	0.83	293	\$1.06
5000	1.10	1,85	0.60	2.86	6.41	9.4	35.0	0.83	273	\$1.14
5500	1.10	2.01	0.60	3.12	6.83	8.8	35.0	0.83	256	\$1.21
6000	1.10	2.17	0.60	3.39	7.26	8.3	35.0	0.83	241	\$1.29
6500	1.10	2.33	0.60	3.66	7.69	7.8	35.0	0.83		\$1,36
7000	1.10	2.50	0.60	3.93	8.13	- 7.A	35.0	0.83	215	\$1.45

Material Movement By Sempera

#3: 10% As	uisting Grade	Lord	ed (-10% grade +	4% rolling =	-6% total)		Empty (10% grade + 4% rolling = 14% total)					
One-Way Distance (FL)	Lood Time (Min.)	Travel Time Losded (Min.)	Mancuver & Spread Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/br)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)		
500	1.10	0.34	0.60	0.51	2.55	23:5	35.0	0.83	686	\$0.45		
1000	1.10	0.51	0.60	0.96	3.17	18.9	35:0	0.83	552	\$0.56		
1500	1.10	0.67	0.60	1,41	3.78	15.9	35.0	0.83	463	\$0.67		
2000	1.10	0.83	.0.60	1.85	4.38	13.7	35:0	0.83	400	\$0.78		
2500	1.10	0.99	0.60	2.30	4.99	12.0	35.0	0.83	351	\$0.89		
3000	1.10	i.16	0.60	2.74	5.60	10.7	35.0	0.83	313	\$0.99		
3500	1.10	1.32	0.60	3.19	6.21	9.7	\$5.0	0.83	282	\$1.10		
4000	1.10	1:48	0.60	3.63	6.81	8.8	35.0	0.83	257	\$1.21		
4500	- 1.10	1:64	0.60	4.08	7.42	8.1	35.0	0.83	236	\$1.32		
5000	1.10	1.81	0.60	4.52	8.03	75	*35.0	0.83	218	\$1:43		
5500	1.10	1.97	0.60	4.97	8.64	6.9	35.0	, 0.83	203	\$1.53		
6000	1.10	2:13	• 0.60	5:41	9.24	6.5	35.0	0.83	189	\$1.65,		
6500	1.10	2.30	0.60	5.86	9.86	6,1	35.0	0.83	177	\$1.76		
'000 ''	1.10	2.46	0.60	6.30	10.46	5.7	35:0	0.83	167	\$1,86		

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	Appendix B (Continue	£)
Calculations for Moving	Materials With a Caterpilla	r 657E Puib-Pull Scraper Pleet

14: 5% Resis	ting Grade	Losd	led (5% grade + 4	% rolling = 9	% total)		Empty (-5% grade + 4% rolling = -1% total)					
Oco-Way Distance (PL)	Lond Time (Min.)	Travci Time Londod (Min.)	Mancuver A. Spread Time (Min.)	Travel Time Buopty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/bs)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)		
500	1.10	0.55	0.60	0.33	2.58	23.3	35.0	0.83	678	\$0.46		
1000	1,10	1.01	0,60	0.50	3.21	18.7	35.0	0.83	.545	\$0.57		
1500	1.10	1.46	0.60	0.66	3.82	15.7	\$5.0	0.83	458	\$0.68		
2000	1.10	1.92	0.60	-0.83	:4:45	13.5	• 35.0	0.83	393	\$0.79		
2500	1.10	2.38	0.60	0.99	5.07	11.8	35.0	0.83	345	\$0.90		
3000	1.10	2.83	0.60	1.15	5.68	10.6	35:0	0.83	308	\$1.01		
:3500	1.10	3.2 9	0.60	1.31	6.30	9:5	35.0	0.83	278	\$1.12		
4000	1.10	3.75	0.60	1.48	6.93	8.7	35.0	0.83	253	\$1.23		
4500	1.10	4.21	0.60	1.64	7.55	7.9	35.0	0.83	232	\$1.34		
5000	1:10	4.66	0.60	1.80	: 8.16	7 <i>.</i> Å	35.0	0.83	214	\$1.45		
5500	1.10	5.12	0.60	1.96	8.78	6.8	35,0	0.83	199	:\$1:56		
6000	1:10	5.58	0.60	2.13	9.41	.6.4	35.0	0.83	186	\$1.67		
6500	1:10	6.04	0.60	2.29	10.03	6.0	35.0	0.83	174	\$1.79		
7 - 11 0	1.10	6,49	0.60	2.45	10.64	5.6	35.0	0.83	164	\$1.90		

Material Movement By Scrapers

ASC #3: 10% KCM	ISLAIN OTAGE	rounce (10.% Kung + e.e. Lotton - 16.% mari)						Emply (-10 # grane + 4 # toting0 # total)					
One-Wey Distance (FL)	Lond Time (Min.)	Travel Time Loaded (Min.)	Mancuver & Spread Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/hr)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)			
500	1.10	0.75	0.60	0.32	2.77	21.7	35.0	0.83	632	\$0.49			
1000	1.10	1.43	0.60	0.49	3:62	16.6	35.0	0.83	483	\$0.64			
1500	1.10	2.12	0.60	0.65	4,47	13.4	35.0	0.83	391	\$0.80			
2000	1.10	2.81	0.60	0.81	5.32	11.3	35.0	0.83	329	\$0.95			
2500	1.10	3.49:	0.60	0.98	6.17	.9.7	35.0	0.83	284	\$1.09			
3000	1.10	4.18	0.60	1.14	7.02	8.5	35.0	0.83	249	\$1.25			
3500	1.10	4.87	0.60	1:30	7.87	7.6	35.0	0.83	222	\$1:40			
4000	1.10	5.56	0.60	1.46	8.72	6.9	35.0	0.83	201	\$1.55			
4500	1.10	. 6,24	0.60	1.63	9:57	6.3	35.0	0.83	183	\$1.70			
5000	1.10	6.93	0.60	1.79	10.42	5.8	-35.0	0.83	168	\$1.85			
5500	. 1.10	7.62	0.60	1.95	11.27	-5:3	35.0	0,83	155	\$2.00			
6000	1.10	4.31	0.60	2.12:	12.13	4.9	35.0	0.83	144	\$2:16			
6500	1.10	8.99	0.60	2.28	12.97	4.6	35.0	0.83	135	\$2.30			
1 1	1.10	9.68	0.60	2.44	15:82	4.3	35.0	0.83	127	\$2.45			

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Appendix C Calculations for Moving Materials With a Caterpillar 637E Push-Pull Scraper Fleet

DRILLING AND BLASTING COSTS ARE NOT INCLUDED IN THESE CALCULATIONS. THE LOD DOES NOT CONSIDER DRILLING AND BLASTING COSTS NECESSARY WHEN USING APPENDIX C. NOTE:

Material Movement By Screpers

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1) 2) 3)	Caterpillar 637B Push-Pull Scraper Material Density Psyload	2,850. LB/BCY 75,000. LB 25.0 BCY	СРН 25 СРН 25	
•	Maximum Vehicle Sound Londod	33.0 MPH	CPH 25	
ด้	Operating Efficiency Factor (50 Min./Hr.)	0.63 %	CPH 25	
6)	637E PP Operating Costs	\$152.15 Per Hour	90% DOCRO	
7	Labor Costa	\$18.75 Per Hour	WYDOT-WDD	
	Supervision Labor Costs	\$3.13 Per Hour	1/8 of WYDOT-WDD	
9)	Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% DOCRG	
10) 1/8 of 1 - 14,000 Gal. Water Trucks + 1 Operator	\$17.56 Per Hour	1/8 of 90% DQCRG	
11) 1/8 of 1 - 16H Blade for Road Work + 1 Operator	\$10.53 Per Hour	1/8 of 90% DQCRG	
12) Vs - D9R for Ripping Ovb. and Miso. Work + 1 Operator	\$60.50 Per Hour	A of 90% DQCRG	
13) Total Hourly Conta	\$263.72		

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TO USE TABLE Locale your approximate grade by reference to ease aumber. Determine cost per BCY by using distance column that approximates your distance. No calculations are BOCCEMITY.

#1: Level On	ound .	Loed	icd (0% grade + 4	S rolling = 4	% total)		Empty (0% grade + 4% rolling = 4% total)				
Ope-Way Distance (FL)	Lond Time (Min.)	Travel Time Londed (Min.)	A Spread Time (Min.)	Travel Time Empty (Min.)	Total Cyclo Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/hr)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)	
500	1.0	0.42	0.60	0.96	2.58	25.2	25.0	0.83	523	\$0.50	
1000	1.0	0.68	0.60	0.57	2.85	21.1	25:0	0.83	438	\$0.60	
1500	1.0	0.92	0.60	0.75	3.27	18.4	25.0	0.83	382	\$0.69	
2000	1.0	1.15	0.60	0.92	3.67	16.3	.25.0	0.83	338	\$0.78	
2500	1.0	1:37	0.60	1.09	4.06	14.8	25.0·	0.83	307	\$0.86	
3000	1.0	1.59	0.60	1,26	4,45	13.5	25.0	0:83	280	\$0.94	
3500	1.0	1.31	0.60	1.44	4.85	12.4	25.0	0.83	257	\$1.03	
4000	1.0	2.02	9.60	1.61	5.23	11.5	25.0	0.83	239	\$1.11	
4500 -	1.0	2.22	0.60	1.78	5.60	10.7	25.0	0.83	222	\$1.19	
5000	1.0	2.43	0.60	1.95	5.98	10.0	25.0	0.83	208	\$1.27	
5500	1.0	2.64	0.60	2.13	6.37	9.4	25.0	0.83	195	\$1:35	
6000	- 1:0	2.85	0.60	2.30	6.75	8.9	25.0	0.83	185	\$1.43	
6500	1.0	3.05	0.60	2,47	7.12	8.4	25.0	0.83	174	\$1.51	
7000	1.0	3.26	0.60	2.64	7:50	8.0	25.0	0.83	166	\$1.59	

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Appendix C (Continued) Calculations: for Moving Materials With a Caterpillar 637E Path-Pull Scraper, Fleet

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Case #2: 5% Assis	ning Ondo	Orade Londod (-5% grade + 4% rolling = -1% total)					Empty (5%	grade + 4% rollin	r = 9% total)	
One-Way Distance (PL)	Lond Time (Min.)	Travél Time Londod (Min.)	Manaver A Spred Time (Min.)	Travel Time Empty (Min.)	Total Cyclo Timo (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/kr)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)
\$00	1:0	0.36	0.60	0.42	2.38	25.2	25.0	0.83	523	\$0.5 0
1000	1.0	0.54	0.60	0.71	2.85	21.0	25.0	0.83	436	\$0.61
1500	1.0	0.71	0.60	0.98	3.29	18.2	25.0	0.83	378	\$0.70
2000	1.0	0.87	0.60	1:25	3.72	16.1	.25.0	0.83	334	\$0.79
2500	1.0	1.03	0.60	1.51	4.14	14.5	25.0	0.83		\$0.88
3000	1.0	1.19	0.60	1.78	4.57	13:1	25.0	0.83	272	\$0.97
3500	.1.0	1:36	0.60	2.05	5.01	12.0	25.0	0.83	249	\$1.06
4000	1.0	1.52	0.60	2.32	5.44	11.0	25.0	0.83	228	\$1.16
4500	1.0	1.68	0.60	2.59	5.87	10.2	25.0	0.83	212	\$1.25
5000	11.0	1.85	0.60	2.86	6.91	9.5	25.0	0.83	197	\$1.34
5500	1.0	2.01	0.60	3.12	6.73	8.9	25.0	0.83	185	\$1.43
6000	1.0	2:17	0.60	3,39	7.16	8.4	25.0	0.83	174	\$1.51
10	1.0	2.33	0.60	3.66	7.59	7.9	25.0	0.83	164	\$1.61
io	1.0	2.50	0.60	3.93	8.03	7:5	25.0	0.83	156	\$1.69

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Material	Movement By Sempers	

13: 10% Assisting Grade Looded (-10% grade + 4% rolling = -5% total)								Empty (10% grade + 4% rolling = 14% total)					
Onc-Way Distance (FL)	Lond Time (Min.)	Travel Time Loaded (Min.)	Mancuver & Spread Time (Min:)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (50 min/hr)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)			
500	1.0	0.34	0.60	0.51	2.45	24.5	25.0	0.83	508	\$0.52			
1000	1.0	0,51	0.60	0.96	3.07	19.5	25.0	0.83	405	\$0.65			
1500	1.0	0.67	0.60	1.41	3.68	16.3	25.0	0.83	338	\$0.78			
2000	1.0	0.83	0.60	1.85	4.28	14.0	25.0	0.83	291	\$0.91			
2500	1.0	0.99	0.60	2.30	4.89	12.3	25.0	0.83	255	\$1.03			
3000	1.0	1.16	0.60	2.74	. 5.50	10.9	25.0	0.83	225	\$1.17			
3500	. 1.0	1.32	0.60	3.19	6.11	9.8	125.0	0.83	203	\$1.30			
4000	1.0	- 1.48	.0.60	3.63	6.71	18.9	25.0	0.83	185	\$1.43			
4500	1.0	1.64	0.60	4.03	7.32	8.2	25.0	0.83	170	\$1.55			
5000	1.0	.1.81	0.60	-4.52	7.93	7.6	25.0	0.83	158	\$1.67			
5500	1.0	1.97	0.60	4.97	8.54	7.0	25.0	0.83	145	\$1.82			
6000	1.0	2.13	0.60	5.41	9.14	6.5	25.0	0.83	135	\$1.96			
(10)	1.0	2.30	0.60	5:86	9.76	6.2	25.0	0.83	129	\$2.05			
· 20	1.0	2.46	0.60	6.30	10.36	5.8	25.0	0.83	120	\$2.19			

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Appendix C (Continued) Calculations for Moving Materials With a Caterpillar 637B Push-Pull Scraper Fleet

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Case #4: 5% Resi	sing Grade	Los	led (5% grade +	5 rolling = 9	S tota)		Empty (-5% grade + 4% rolling) = -1% total)					
Oce-Way Distance (Pu)	Lond Time (Min.)	Travel Time Londod (bilb.)	Manauver & Spirad Time (Min.)	Travel Timo Empty (Adin.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Rector (50 min/tur)	Adjusted Productivity (BCY/Hr)	Operating Costs (\$/BCY)		
500	1.0	0.55	0.60	0.33	2.48	24.3	25.0	0.83	502	\$0.53		
1000	1.0	1.01	0.60	0.50	3.11	19.3	25.0	0.13	400	\$0.66		
1500	1.0	1.46	0.60	0.66	3.72	16.1	25.0	0.83	334	\$0.79		
2000	1.0	1.92	0.60	0.83	4,35	.13.8	25.0	0.83	286	\$0.92		
2500	1.0	2.38	0.60	0.99	4.97	12,1	25.0	0.83	251	\$1.05		
3000	1.0	2.83	0.60	1.15	5.58	10.8	25.0	0.83	224	\$1.18		
3500	1.0	3.29	0.60	131	6.20	9.7	25.0	0.83	201	\$1.31		
4000	1.0	3.75	0.60	1.48	6.83	8.8	25.0	0.83	183	\$1.44		
4500	1.0	4.21	0.60	1.64	7.45	8.1	25.0	0.83	168	\$1:57		
5000	1.0	4.66	0.60	1.80	8.06	7:4.	25.0	0.83	154	\$1.72		
5500	1.0	5.12	0.60	1.96	8.68	6.9	25.0	0.83	143	\$1.84		
6000	1.0	5.58	0.60	2.13	9.31	6.4	25.0	0.83	133	\$1.99		
10	1.0	6.04	0.60	2.29	9.93	6.0	25.0	0.83	125	\$2:12		
	1.0	6.49	0.60	2.45	10.54	5:7	25.0	0.83	118	\$2:23		

Material Movement By Scrapers

se #5: 10% Resisting Grade Loaded (10% grade + 4% rolling = 14% total)								Empty (-10% grade + 4% rolling = -6% total)					
One-Way Distance (FL)	Land Time (Min.)	Travel Time Loaded (Min.)	Manairvar & Spread Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Efficiency Factor (\$0 min/h/)	Adjusted Productivity (BCY/Hr)	Operating Costs (S/BCY)			
500 ,	1.0	0.75	0.60	0.32	2.67	22.5	25.0	0.83	467	\$0.56			
1000	1.0	1.43	0.60	0.49	3.52	17.0	25.0	0.83	353	\$0.75			
1500	1.0	2.12	0.60	0.65	4.37	13.7	25.0	0.83	284	\$0.93			
2000	1.0	2.81	0.60	0.81	5.22	11.5	25.0	0.83	238	\$1.11			
2500	1.0	3.49	0.60	0.98	6.07	9.9	25.0	0.83	205	\$1.28			
3000	1.0	4.18	0.60	1.14	6.92	8.7	25.0	0.83	181	\$1.46			
, 3500	1.0	4.87.	0,60	1.30	1.71	7.7	25:0	0.83	160	\$1.65			
4000	1.0	5.56	0.60	1.46	8,62	7.0	25.0	0.83	145	\$1.82			
4500	1.0	6.24	0.60	1.63	9.47	6.3	25.0	0.83	131	\$2.02			
5000	1.0	6.93	0.60	1.79	10.32	5.8	25.0	0.83	120	\$2.19			
5500	0	7.62	0.60	1.95	11.17	5.4	25.0	0.83	112	\$2.35			
6000	1.0	8.31	0.60	2.12	12.03	4,9	25.0	0.83	102	\$2.59			
(Ó.	1.0	8.99	0.60	2.28	12.87	4.7	25.0	0.83	98	\$2.70			
10.	1.0	9.68	0.60	2.44	13.72	4.4	25.0	0.83	91	\$2.89			

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Appendix D Calculations for Moving Materials. With a Caterpillar 36 CY Cable Shovel and Caterpillar 240T (793C) Trucks



Material Movement By Shovel-Truck Combination

1): 56 CY Shovel	56.0 LCY Heaped	
2) Caterpillar 793B - 240-Ton End Dumps	193.0 LCY/156.8 BC	Y
3) Material Density	2,850.0 LB/BCY	CPH 25
4) Operating Efficiency Factor	0.83 %	CPH 25
S) Rolling Resistance Factor	4.00 %	CPH 25
6). 56 CY Shovel Operating Costs (No Ownership Cost)	\$248.64	WME
7) 793C Lease + Operating Costs	\$193.15	WME
8) Labor Costa	\$18.75 Per Hour	WYDOT-WDD
9) Vs. of 1 = 14,000 Gal. Water Truck + 1 Operator	\$70.23 Per Hour	1/2 of 90% DQCRG + Operator
0) 1 - 16H Blade + 1 Operator	\$84.26 Per Hour	90% DOCRG + Operator
1) 1 - D9R + 1 Operator	\$120.99 Per Hour	90% DOCRG + Operator
2) 1 834B Rubber Tired Dozer + 1 Operator	\$105.15 Per Hour	90% DQCRG + Operator
3) Supervision Labor Costs	\$12.50 Per Hour	14 of WYDOT-WDD
(4) Supervisor Transportation	<u>\$4.39</u> Per Hour	14 of 90% DQCRG
S) Total Floet Hourty Costs (Escopt Trucka)	\$664.91 Per Hour	

TO USE TABLE: Locate your approximate grade by reference to case number. Determine cost per BCY by using distance column that approximates your distance. No calculations are necessary.

Case #1: Leve	el Ground		Lord	ed (0% grad	c + 4% roll	ing = 4% to	al resistance)		Empty (0% grade	+ 4% = 4% total)		
Onc-Way	Load Time (Min.)	Mancuver Tanc -(Min.)	Travel Time Londed (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payland (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjusted Shovel Productivity (BCY/Hr)	Number of Trucks Required	Operating Costs (S/BCY)
500	1.70	0.60	0,4	1.20	0.2	4.1	14.6	156.8	1912	4040	2.11	\$0.275
1000	1.70	0.60	0.7	1.20	0.4	4.6	.13.0	156.8	1704	4040	2:37	\$0.289
1500	1.70	0.60	1.0	1.20	0.6	5.1	11.8	156.8	1537	4040	2.63	\$0.303
2000	1.70	0.60	1.3	1.20	0.7	5.5	10.9	156,8	1425	4040	2.83	\$0.313
2500	1.70	0.60	1.6	1.20	0.9	6.0	10.0	156.8	1307	4040	3.09	\$0.327
3000	1.70	0.60	1.9	1.20	4.1	6.5	9.2	156.8	1206	4040	3.35	S0.340
3500	1.70	0.60	2.2	1.20	1/3	7.0	.8.6	156.8	1120	4040	3.61	\$0.354
4000	1.70	0.60	2.4	1.20	1.5	7:4	8.1	156.8	1059	4040	3.81	\$0.364
4500	1.70	0.60	2.7	1.20	1.7	7.9	7.6	156.8	992	.4040	4.07	\$0.378
5000	1.70	0.60	3.0	1.20	1.9	8.4	7.1	156.8	933	4040	4.33	\$0.392
-5500	1.70	0.60	3.2	1.20	2.1	8.8	6.8	156.8	891	4040	4.53	\$0.402
6000	1.70	0.60	3:5	1.20	2.3	9.3	6.S-	156.8	843	4040	4.79	\$0.416
6500	1.70	0.60	3.8	1:20	2.5	9.8	6.1	156.8	800	4040	5.05	\$0.430
7000	1.70.	0.60	4.1	1.20	2.7	10.3	5.8	156.8	761	4040	5.31	\$Ö.443

persting: Costs = (((/ Trucks x (Truck costs + Labor costs)) + Total Plot costs)/Shovel Productivity)

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Appendix D (Continued) Calculations for Moving Materials With a Caterpillar 56 CY Cablo Shovel and Caterpillar 2407 (793C) Trucks

ase #2: 5%	Resisting G	nade	Lord	ed (D % grad	c + 4% roll	ing = 9% to	al resistance)		Empty (-3% grade	+ 4% rolling = -1	% total)	
Oce-Way Distance (FL)	Lond Time (Min.)	Mentiver Time (Min.)	Travel Trac Londed (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cycle Time (Min.)	Trips Per Hour	Payload (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjusted Shovel Productivity (BCY/htr)	Number of Trucks Required	Operating Conta (\$/BCY)
500	1,70	0.60	0.8	1.20	0.4	4.7	12.8	156.8	1668	4040	2.42	\$0.292
1000	1.70	0.60	14	1.20	0.7	5.6	10.7	156.8	1398	4040	2.89	\$0.316
1500	1.70	0.60	2.2	1.20	1.0	6.7	9.0	156.8	1170	4040	3:45	\$0.346
2000	1.70	0.60	2.9	1.20	13	7.7	7.8	156.8	1019	4040	3.96	\$0.372
2500	1.70	0,60	3.6	1.20	1.6	8.7	6.9	156.8	902	4000	4.45	\$0,400
3000	1.70	0.60	4.3	1.20	1.9	9.7	6.2	156.8	810	4040	4.99	\$0,425
3500	1.70	0.60	5.0	1.20	2.2	10.7	5:6	156.8	731	4040	5.52	\$0.454
4000	1.70	0,60	5.7	1.20	2.5	11.7	5.1	156.8	669	4040	6.04	\$0.481
4500	1.70	0.60	6.4	1.20	2.8	12.7	4.7	156.8	615	4040	6.57	\$0.509
5000	1.70	0.60	7.1	1.20	312	13:8	4,4	156.8	570	4010	7.09	\$0.537
5500	1.70	0.60	7.8	1.20	3:5	14.8	4.1	156.8	531	4040	7.61	\$0.564
6000	1.70	0.60	ي.	1.20	3.8	15.8	3.8	156.8	497	4040	8,14	\$0.592
6500	1.70	0.60	9,2	1.20	4.1	16.8	3.6	156.8	-467	4040	8.66	\$0.619
<u> </u>	1.70	0.60	9.9	1.20	4.4	17.8	3.4	156.8.	440	4040	9,17	\$0.646

Material Movement By Shovel-Truck Combination

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Oue-Way Distance (FL)	Lond Time (Min.)	Mancuver Time (Min.)	Travel Time Londod (Min.)	Dump Time (Min.)	Travel Time Empty (Min.)	Total Cycie Time (Min.)	Trips Per Hour	Payload (BCY)	Adjusted Truck Productivity (BCY/Hr)	Adjusted Shovel Productivity (BCY/Hr)	Number of Trucks Required	Operating Costs (\$/BCY)
500	1.70	0.60	0.4	1.20	0.3	4:2	14:3	156.8	1867	4040	2.16	\$0.278
1000	1.70	0.60	0.7	1.20	0.5	4.7	12.7	156.8	1662	4040	2.43	\$0.292
.1500.	1.70	0.60	1.0	1.20	0.5	5.3	11:3	156.8	1479	4040	2,73	\$0.308
2000	1.70	0.60	13	1.20	1.0	5.8	10.3	156.8	1344	4040	.3:00	\$0.322
2500	1.70	0.60	1.6	1.20	1.3	6.4	9.4	156.8	1227	4040	3.291	\$0.337
3000.	1.70	0.60	1.9	1.20	1.6	7.0	8.6	156.8	1128	4040	3.58	\$0.352
3500	1.70	0.60	2.2	1.20	1.8	7.5	8.0	156.8	1044	4040	3.87	\$0.368
4000	1.70	0.60	2.5	1.20	2.1	8.1 ···	7.4	156;8	972	4040	4.16	\$0.383
4500	1.70	0.60	2:8	1.20	2.3	8.6	7.0	156.8	909	. 4040	4.44	\$0.398
\$000 .	1.70-	0.60	.3.2	1.20	2.6	9.3	6.5	156.8	845	4040	4.78	\$0.415
5500	1.70	0.60	3.5	1.20	2.8	9.8	6.1	156.8	797	4040	5.07	\$0.431
6000	1.70	0.60	3.8	1.20	3.1	10.4	· Š.8'	156.8	754	4040	5:36	\$0.446
6500	1.70	0.60	4.1	1.20	5. 4	11.0	5.5	156.8	715	4040	\$:65	\$0.461
	1.70	0.60	4.4	1.20	3.6	11.5	5.2	156.8	681	4040	5.93	\$0.476

Loaded (-5% grade + 4% rolling = -1% total resistance) Empty (5% grade + 4% = 9% total)

ase #3: 5% Assisting Orade.

Appendix E		
Calculations for Moving Material With a Caterpillar	D9N Doz	21

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Material Movement By Dozing

1) Caterpiller D9N Dozer With U Blade		
2) Operating Costs	\$94.60 Par Hour	90% of DQCRG
3) Labor Costs	\$18.75 Per Hour	WYDOT-WDD
4) Supervisor Labor Costs	\$3.13 Per Hour	1/8 of 90% of DOCRG
5) Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG
6) Total Hourty Costs	\$117.58 Per Hour	

O USE TABLE: Locate your approximate grade by referencing "Orade" column. Determine cost per LCY by using the distance that best approximates your distance.

	Distance (FL)	Productivity (LCY/Hr.)	Operator	Material	Visibility	Efficiency	Onde (0%)	Adjusted Productivity (LCY/Hr.)	Costa (S/LCY)
	50	2100	1.0	1.0	0.90	0.89	1.00	1575	\$0.075
	100	1200	1.0	.1.0	0.90	0.83	1.00	900	\$0.131
	150	900	1.0	1.0	0.90	0.83	1.00	675	\$0.174
	200	700	1.0	1.0	0.90	0.83	1.00	\$25	\$0.224
•	250	570	1.0	1.0	0.90	0.83	1.00	428	\$0.275
	300	480	1.0	1.0	0.90	0.83	1.00	360	\$0.327
,	150	410	1.0	1.0	0.90	0.83	1.00	308	\$0.382
	100	370	1.0	1.0	0.90	0.83	1.00	278	\$0.423
	450	350	1.0	1.0	0.90	0.83	1.00	263	\$0.447
	500	340	1.0	1.0	0.90	0.83	1.00	255	\$0,461

		Job Correction Factors!						•	
Distance (FL)	Productivity (LCY/Hs.)	Operator	Material	Vulbility	Efficiency	Grade (-10%)	Adjusted Productivity (LCY/Hr.)	Costs (\$/LCY)	
50	2100	1.0	1:0	0.90	0.83	1.20	1890	\$0.062	
100	1200	1.0	1.0	0.90	0.83	1.20	1080	\$0.109	
150	900	1.0	1.0	0.90	0.83	1.20	810	. \$0.145	
200	700	1.0	1.0	0.90	.0.83	1,20	630	\$0.187	
250	570	1.0	1:0	0.90	0.83	1.20	513	\$0.229	
300	480	1.0	1.0	0,90	0.83	1.20	432	\$0.272	
350	410	1.0	1.0	0.90	0.83	1.20	369	\$0.317	
400	370	1.0	1.0	0:90	0,83	1.20	333	\$0.353	
450	350	1.0	1.0	0.90	0.83	1.20	315	\$0.373	
500	340	1.0	1.0	0.90	0.83	1.20	.306	\$0.384	

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lob Correction Factors?
 Excellent
 = 1.00

 Good
 = 1.00

 Fair
 = 0.90

 S0 min/hr
 = 0.83
 Operator Material Visibility

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Appendix E (Continued) Calculations for Moving Material With a Catespillar D9N Dozzr

Material Movement By Dozing

			Job Correction Factors ¹			Ì		
Distance (PL)	Productivity (LCY/Hr.)	Operator	Material	Visibility	Efficiency	Grad: (-20%)	Adjusted Productivity (LCY/Hr.)	Costs (S/LCY)
50	2100	1.0	1.0	0.90	Ó.83	1.40	2205	\$0.053
100	1200	1.0	1.0	0.90	0.83	1.40	1250	\$0.093
150	900	1.0	1.0	0.90	0.83	1:40	945	\$0.124
200	700	1.0	1.0	0.90	0.83	1.40	735	\$0.160
250	570	1.0	1.0	0.90	0.83	1.40	599	\$0:196
300	480	1.0	1.0	0.90	0.83	1.40	504	\$0.233
350	410	1.0	1.0	0.90	0.83	1.40	431	\$0.273
400	370	1.0	1.0	0.90	0.83	1:40	389	\$0.302
450	350	1.0	1.0	0.90	0.83	1.40	368	\$0.320
500	340	1.0	1.0	0.90	0.83	1.40	357	\$0.329

Charles and the second		Job Correction Factors ¹					
Productivity (LCY/Hr.)	Operator	Material	Visibility	Efficiency	Grade (10%)	Adjusted Productivity (LCY/Hr.)	C. Glicon
2100	1.0	1.0	0.90	0,83	0.75	1181	\$0.100
1200	1.0	1:0	0.90	0.83	0.75	-675	\$0.174
900	1.0	1.0	0.90	0.83	0.75	506	\$0.232
700	1.0	1.0	0.90	0.83	0.75	394	\$0.298
570	1.0	1.0	0.90	0.83	0.75	321	SD.366
480	1.0	1.0	0.90	0.83	0.75	270	\$0.436
410	1.0	1.0	0.90	0.83	0.75	231	\$0.509
370	1.0	1.0	0.90	0.83	0.75	208	\$0.565
350	1.0	1.0	0.90	0.83	0.75	197	\$0.600
240	1.0	10	0.90/	0.83	0.75	191	\$0.616
	Productivity (LCY/Hr.) 2100 1200 900 700 570 480 410 370 350	Productivity (LCY/Hr.) Operator 2100 1.0 1200 1.0 900 1.0 900 1.0 700 1.0 570 1.0 450 1.0 410 1.0 370 1.0 350 1.0	Productivity (LCY/Hr.) Operator Material 2100 1.0 1.0 1200 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0 900 1.0 1.0	Job Correction Factors ¹ Productivity (LCY/Hr.) Operator Material Visibility 2100 1.0 1.0 0.90 1200 1.0 1.0 0.90 1200 1.0 1.0 0.90 900 1.0 1.0 0.90 900 1.0 1.0 0.90 700 1.0 1.0 0.90 570 1.0 1.0 0.90 410 1.0 1.0 0.90 570 1.0 1.0 0.90 350 1.0 1.0 0.90	Job Correction Factors ¹ Productivity (LCY/Hr.) Operator Material Visibility Efficiency. 2100 1.0 1.0 0.90 0.83 1200 1.0 1.0 0.90 0.83 900. 1.0 1.0 0.90 0.83 900. 1.0 1.0 0.90 0.83 900. 1.0 1.0 0.90 0.83 900. 1.0 1.0 0.90 0.83 900. 1.0 1.0 0.90 0.83 700 1.0 1.0 0.90 0.83 450 1.0 1.0 0.90 0.83 410 1.0 1.0 0.90 0.83 570 1.0 1.0 0.90 0.83 570 1.0 1.0 0.90 0.83 570 1.0 1.0 0.90 0.83 570 1.0 1.0 0.90 0.83 570 1	Job Correction Factors' Grade (LCY/Hr.) Grade (10%) 2100 1.0 1.0 0.90 0.83 0.75 1200 1.0 1.0 0.90 0.83 0.75 1200 1.0 1.0 0.90 0.83 0.75 900 1.0 1.0 0.90 0.83 0.75 900 1.0 1.0 0.90 0.83 0.75 900 1.0 1.0 0.90 0.83 0.75 900 1.0 1.0 0.90 0.83 0.75 900 1.0 1.0 0.90 0.83 0.75 700 1.0 1.0 0.90 0.83 0.75 570 1.0 1.0 0.90 0.83 0.75 410 1.0 1.0 0.90 0.83 0.75 570 1.0 1.0 0.90 0.83 0.75 570 1.0 1.0 0.90 0.83 0.75 <	Job Correction Factors ¹ Adjusted Productivity (LCY/Hr.) Adjusted Productivity (LCY/Hr.) 2100 1.0 Material Visibility Efficiency Grade (10%) Productivity (LCY/Hr.) 2100 1.0 0.90 0.83 0.75 1181 1200 1.0 1.0 0.90 0.83 0.75 675 900 1.0 1.0 0.90 0.83 0.75 506 900 1.0 1.0 0.90 0.83 0.75 506 700 1.0 1.0 0.90 0.83 0.75 394 570 1.0 1.0 0.90 0.83 0.75 321 480 1.0 1.0 0.90 0.83 0.75 231 480 1.0 1.0 0.90 0.83 0.75 231 480 1.0 1.0 0.90 0.83 0.75 231 480 1.0 1.0 0.90 0.83 0.75 208

¹ Job Correction Factors:

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Operator Material Visibility Efficiency

 Excellent
 = 1.00

 Good
 = 1.00

 Fair
 = 0.90

 50 min/hr
 = 0.83

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Appendix F Catculitions For Moving Mitcrial With a Caterpillar D11R Dozer

Material Movement By Dozing With D11R.

1) Catemillar D118 Dozer With U Blads (Operating Costs) \$723 \$5 per DataOperat		
2). Operating Costs	\$201.47 Per Hour	90% of DQCRG
3) Labor Costs	\$18.75 Per Hoar	WYDOT-WDD
4) Supervisor Labor Costs	\$3.13 Per Hour	1/8 of 90% of DQCRG
5) Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG
6) Total Hourty Costs	\$224.45 Per Hour	

TO USE TABLE: Locate your approximate grade by referencing "Grade" column. Determine cost per LCY by using the distance that best approximates your distance.

			Job Correction Factors						
	Distance (FL)	Productivity (LCY/Hr.)	Operator	Material.	Visibility	Bificiency	Grade (0%)	Adjusted Productivity (LCY/Hr.)	Costs (S/LCY)
	50 ·	3200	1.0	1.0	0.90	0.83	1.00	2400	\$0.094
	100	2700	1.0	1.0	0.90	0.63	1.00	2025	\$0.111
	.150	1800	1.0	1.0	0.90	0.83	1.00	1350	\$0.166
	200	1400	1.0	1.0	0.90	0,83	1.00	1050	\$0.214
	250	1150	1.0	1.0	0.90	0.83	1.00	863	\$0.260 ·
	,300	1000	1.0	1.0	0.90	0.83	1.00	750	\$0.300
	. 350	-850	1.0	1.0	0.90	0.83	1.00	638	\$0.352
	400	750	1.0	110	0.90	.0.83	1.00	563	\$0.400
	450	670	1:0	1.0	0.90	0.83	1.00	503	\$0.446
. <u></u>	\$00	600	1.0	1.0	0.90	0.83	1.00	450	\$0,500

	1	Job Correction Factors'							
Distance (FL)	Productivity (LCY/Hr.)	Operator	Material	Visibility	Efficiency	Grada (-10%)	Adjusted Productivity (LCY/Hr.)	Costs (S/LCY)	÷
50	3200	1.0.	1.0	0.90	0.83	1:20	2880	\$0.078	
100	2700	1.0	1.0	0.90	0.83	1.20	2430	\$0.092	
150	1800	1.0	A1.0	0.90	0.83	1.20	1620	\$0,139	
200	1400	1.0	1.0	0.90	0.83	1.20	1260	\$0.178	
250	1150	1.0	1.0	0.90	0.83	1.20	1035	\$0.217	
300	1000	1.0	1.0	0.90	0.83	1.20	900	\$0.249	
350	850 -	1:0	1:0**	· 0.90	0.83	1.20	765	\$0.293	
400	750	1.0	1.0	0.90	0.83	1.20	675	\$0.333	
450	670	1.0	1:0	0.90	0.83	1:29	603	\$0.372	
500	. 600	1.0	1.0	0.90	0.83	1.20	540	\$0.416	

Job Correction Fectors:

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 Operator
 Bacellent.
 ≈ 1.00.

 Material
 Good
 ≈ 1.00.

 Visibility
 Fair.
 ≈ 0.90

 Efficiency
 \$0.min/hr.
 ≈ 0.83.

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Appendix F (Continued) Calculations For Moving Material With a Caterpillar D11R Dozer

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			Job Correction Pactors ⁴					
Distance (FL)	Productivity (LCY/Hr.)	Operator	Material	Visibility	Bficianoy	Grade (-20%)	Adjusted Productivity (LCY/Hr.)	Costs (\$/LCY)
50	3200	1.0	1.0	0.90	0.83	1.40	3360	\$0.057
100	2700	1.0	1.0	0.90	. 0.83	1.40	2835	\$0.079
150	1800	1.0	1.0	0.90	0.13	1.40	1890	\$0.119
200	1400	1.0	1.0	0.90	0.83	1.40	1470	\$0.153
250	1150	1.0	1.0	0.90	0.83	1.40 **	1205	\$0.186
300	1000	1.0	1.0	0.90	0.83	1.40	1050	\$0.214
350	850	1.0	1.0	0.90	0.83	1.40	893	\$0.251
400	750	• 1.0 ⁷	1.0	0.90	0.83	1.40	788.	\$0.285
450	670	1.0	1.0	0.90	0.83	1.40	704	\$0.319
	600	1.0	1.0	0.90	0.83	1.40	.630	\$0:356

Material Movement By Dozing With D11R

			Job Correctio	m Factors'				
Distance (FL)	Productivity (LCY/Hr.)	Operator	Materia	Visibility	Efficiency	Grads (10%)	Adjusted Productivity (LCY/Hr.)	Con-
50	3200	1.0	1.0	0.90	0.83	0.75	1800	\$0.125
100	2700	1.0	1.0	0.90	0,83	0.75	1519	\$0.148
150.	1800	1.0	1.0	0.90	0.83	0.75	1013	\$0.222
200	1400	1.0	1.0	0.90	0.83	0.75	788	\$0.285
250	1150	1.0	1:0	0.90	0.83	0.75	647	\$0.347
300	1000	1.0	1.0	0.90	0.83	0.75	563	\$0.399
\$50	850	1.0	1:0,	0.90	0.83	0.75	478`	\$0.470
400	750	1.0	1.0	0.90	0.83	0,75	422	\$0.532
450	670 -	1.0	1.0	0,90	0.83	0.75	377	\$0.595
500	600	1.0	1.0	0.90	0.83	0.75	338	\$0.664

Job Correction Factors:

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Cuon Factors: Operator Eac Material Got Visibility Fain Efficiency 50 (

Excellent = 1.00 Good = 1.00 Fair = 0.90 50 min/hr = 0.83

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	A	ppendix	G		
Calculations for	Final Grading	g With a	Caterpillar	16H Motor	Grader

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Fina	l Grading	
	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE
Caterpillar 16H Motor Grader		
Speed in Miles Per Hour (Second Gear)	3.3 Miles/Hour	СРН 25
Width of Grading Per Pass	8 Feet	СРН 25
Feet Per Mile	5,280 Feet	
Square Feet Per Acre	43,560 Sq. Ft.	
Operating Efficiency Factor 50 Min./Hr.	0.83 %	СРН 25
rating Costs	\$65.51 Per Hour	90% of DQCRG
Labor Costs	\$18.75 Per Hour	WYDOT-WDD
Supervision Labor Costs	\$3.13 Per Hour	1/8 of 90% of DQCRG
Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG
Total Hourly Costs	\$88.49	
Grading Rate	×.	•
(3.3 Miles/Hour)x(5,280 Ft./Mile)x(8 Ft./Pass)	139,392 Ft ² /Hour	
(139,392 Ft ² /Hour)/(43,560 Ft ² /Acre)	3.2 Acres/Hour	
(3.2 Acres/Hour)x(0.83 Efficiency Factor)	2.66 Acres/Hour	
Operating Costs		
(\$88.49/Hour)/(2.66 Acres/Hour)	\$33.27 Per Acre	



Appendix H Cost Estimates for Handling Wire Fencing and Electrical Power Lines

FENCI	FENCING	
Construction 4-Strand Barbed	Overall Average - \$1.15/LF	Wyoming Highway Department Weighted Average Bid Prices, 1997
Removal	Overall Average - \$0.68/LF	Wyoming Highway Department, Average Bid Prices, 1997
	Power Line Removal	
Distribution Lines: Transmission Lines:	No Charge No Charge	From: Tri-County Electric From: Tri-County Electric

Note: Cost estimates for power line removal are based on phone contact with Tri-County Electric. Distribution lines are owned by Tri-County Electric and would be removed upon request at no charge by Tri-County Electric. Transmission lines (lines which go from the main metering point to various electrical substations and are not owned by Tri-County Electric) would be removed by Tri-County Electric at no cost for their salvage value.

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Asphalt Ripping (3"-4" Mat)				
	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE		
Caterpillar D9R Dozer With 3 Shank Ripper				
Speed in Miles Per Hour	1 Mile/Hour	CPH 25		
Width of Ripping Pass	3 Feet	СРН 25		
Feet Per Mile	5,280 Feet			
Square Feet Per Acre	43,560 Sq. Ft.			
Operating Efficiency Factor 50 Min./Hr.	0.83 %	СРН 25		
Sperating Costs	\$102.24 Per Hour	90% of DQCRG		
Labor Costs	\$18.75 Per Hour	WYDOT-WDD		
Supervision Labor Costs	\$3.13 Per Hour	1/8 of 90% of DQCRG		
Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG		
Total Hourly Costs	\$125.22			
Ripper Productivity		- 		
(1.0 Mile/Hour)x(5,280 Ft./Mile)x(3 Ft./Pass)	15,840 Ft ² /Hour			
(15,840 Ft ² /Hour)/(43,560 Ft ² /Acre)	0.36 Acres/Hour			
(0.36 Acres/Hour)x(0.83 Efficiency Factor)	0.299 Acres/Hour			
Operating Costs		· · · · · · · · · · · · · · · · · · ·		
(\$125.22/Hour)/(0.299 Acres/Hour)	\$418.80 Per Acre			

Appendix I Cost Estimate for Ripping Asphalt Using a Caterpillar D9R Dozer

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Appendix I1 Cost Estimate for Ripping Overburden Using a Caterpillar D10R Dozer

Overburden Ripping			
	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE	
Caterpillar D10R Dozer With Single Shank Ripper	· · · · · · · · · · · · · · · · · · ·		
Speed in Miles Per Hour	1 Mile/Hour	СРН 25	
Width of Ripping Pass	3 Feet	СРН 25	
Feet Per Mile	5,280 Feet		
Square Feet Per Acre	43,560 Sq. Ft.		
Operating Efficiency Factor 50 Min./Hr.	0.75 %	СРН 25	
Depth	2 Feet	СРН 25	
Operating Costs	\$134.07 Per Hour	90% of DQCRG	
Labor Costs	\$18.75 Per Hour	WYDOT-WDD	
Supervision Labor Costs	\$3.13 Per Hour	1/8 of 90% of DQCRG	
Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG	
Total Hourly Costs	\$157.05		
Ripper Productivity			
(1.0 Mile/Hour)x(5,280 Ft./Mile)x(3 Ft./Pass)	15,840 Ft ² /Hour		
(15,840 Ft ² /Hour)/(43,560 Ft ² /Acre)	0.36 Acre/Hour		
(0.36 Acre/Hour)x(0.75 Efficiency Factor)	0.27 Acre/Hour		
Operating Costs	·		
(\$157.05/Hour)/(0.27 Acre/Hour)	\$581.67 Per Acre		

A 75 percent Efficiency Factor was used to account for slowing, raising ripper, maneuvering and turn time.

Appendix J Cost Estimate for Culvert Removal

Curvent Remova		
	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE
Average Length of CMP Section	20 Feet	
Assumed Culvert Diameter	48 Inches	
Time to Cut One Band	10 Minutes	
Time to Load One 20' Section (2 People)	20 Minutes	
Average Haul, Dump and Return Time	30 Minutes	
Number of Sections of CMP Per Load	2	
Operating Efficiency Factor 50 Min./Hr.	0.83 %	
_ sr	\$18.75 Per Hour	WYDOT-WDD
Dump Truck (10-12 yd ³)	\$26.52 Per Hour	90% of DQCRG
Caterpillar 980F Front-End Loader	\$57.94 Per Hour	90% of DQCRG
Cost to Remove One 20' Section of CMP	•	
Labor Cost x Time to Cut One Band	\$3.13	
+ ((Labor Cost x 2) + FEL Cost) x Time to Load 1 Section	\$31.78	
+ (Labor Cost + Truck Cost) x Haul Time	\$22.64	
Cost to Remove One 20' Section of CMP (not including dirt removal)	\$57.55	

Culvert Removal

Note: Culverts may be smashed and buried in place when feasible.

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Appendix K Cost Estimates for Demolition and Removal of Railroad Spurs and Facilities Buildings

TASK	COST PER UNIT (\$)	REGIONAL COST ADJUSTMENT ¹	ADJUSTED COST PER UNIT (\$)
Track Removal	6.19/lin. ft.	84.2%	5.21/lin. ft.
Ballast Removal	2.54/cy	84.2%	2.14/cy
Building Demolition and Disposal ^{1, 2, 3}			
Mixture of Types	0.18/ft ³	84.2%	0.152/ft ³
Explosive Demolition, Concrete or Steel	0.18/ft ³	84.2%	0.152/ft ³
Disposal	6.47/cy	84.2%	5.45/cy
City Landfill Dump Charges	\$50.00/ton	84.2%	\$42.10/ton
crete Footings and Foundations			-
6" Thick With Rebar	9.65/sq. ft.	84.2%	8.13/sq. ft.
Footings - 2' Thick, 3' Wide	13.15/lin. ft.	84.2%	11.07/lin. ft.
Concrete Disposal On-Site	5.25/cv	84.2%	4.42/cv

- Note: Operators may also provide a verifiable cost estimate from a qualified contractor for these demolition tasks. This estimate may be used for one to three consecutive years, assuming few substantial changes in mine facilities.
- Costs From: 1998 Means Heavy Construction Cost Data
- ³ Based on Total Volume of Building, does not include disposal cost
- ¹ Based on Concrete Structures Volume Only, does not include disposal cost

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Appendix L Abandonment and Sealing of Cased Drill Holes and Monitor Wells

			TOTAL
TASKS	UNITCOST	UNITS	COST
DRILL HOLE RECLAMATION COSTS			
Site Locating	\$10.00/site		
Sealing Using High-Solids Bentonite Grout ^{1,2} ≤ 500' deep ≤ 1,000' deep	\$4.00/lin. ft. \$6.28/lin. ft.		
Capping Using a Pre-cast Concrete Cap (if needed)	\$7.50/hole		
Site Grading	\$30.00/site		
Seeding - Small Site (15' x 25')	\$1.00/site		
During & Seeding - Large Sites (100' x 100')	\$250.00/site		
YONITORING WELL RECLAMATION COSTS	•		
Site Locating	\$10.00/site		
Removal of Top Few Feet of Casing (Backhoe & Welder)	\$15.00/well		
Sealing Using High-Solids Bentonite Grout ^{1,2} < 500' deep < 1,000' deep	\$4.00/lin. ft. \$6.28/lin. ft		
Site Smoothing (Hand Work) & Seeding	\$5.00/site		

losts based on industry sources.

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Assumes a hole/well size of 5" diameter.

Gassy or artesian wells would require class G neat cement plugging @ \$6.46/ft. for wells up to 500' deep and \$7.64/ft. for holes over 500' deep.

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Appendix M Cost Estimate for Rough Grading Backfill Using Caterpillar D9R Dozer or Caterpillar 834B

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ITEMS	CATERPILLAR D9R DOZER	CATERPILLAR 834B RUBBER TIRED DOZER	COMMENT/SOURCE
Speed in Miles Per Hour (First Gear)	2.0 Miles/Hour	4.0 Miles/Hour	СРН 25
Width of Dozer Pass	14 Feet	14 Foot	CPH 25
Feet Per Mile	5,280 Feet	5,280 Feet	
Square Feet Per Acre	43,560 Sq. Ft.	43,560 Sq. FL	
Operating Efficiency Factor 50 Min./Hr.	0.83%	0.83%	CPH 25
Operating Costs	\$102.24 Per Hour	\$86.40 Per Hour	90% of DQCRG
Labor Costs	\$18.75 Per Hour	\$18.75 Per Hour	WYDOT-WDD
Supervision Labor Costs	\$3.13 Per Hour	\$3.13 Per Hour	1/8 of 90% of DQCRG
rvisor Transportation	\$1.10 Per Hour	\$1.10 Per Hour	1/8 of 90% of DQCRG
Total Hourly Costs	\$125.20	\$109.38	
SCARIFICATION RATE			
(2.0 Miles/Hour)x(5,280 Ft./Mile)x(14 Ft./Pass) ¹ (4.0 Miles/Hour)x(5,280 Ft./Mile)x(14 Ft./Pass) ²	147,840 Ft ² /Hour	295,680 Ft ² /Hour	
(147,890 F ² /Hour)/(43,560 F ² /Acre) ¹ (295,680 F ² /Hour)/(43,560 F ² /Acre) ²	3.39 Acres/Hour	6.79 Acres/Hour	
(3.39 Acres/Hour)x(0.83 Efficiency Factor) ¹ (6.79 Acres/Hour)x(0.83 Efficiency Factor) ²	2.82 Acres/Hour	5.66 Acres/Hour	
OPERATING COSTS			
(\$125.20/Hour)/(2.82 Acres/Hour) ¹ (\$109.38/Hour)/(5.66 Acres/Hour) ²	\$44.40 Per Acre	\$19.33 Per Acre	•

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Caterpillar D9R Dozer

Caterpillar 834B Rubber Tired Dozer

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Appendix N Cost Estimates for Demolition and Removal of One "Standard" Surface Water Monitoring Station

	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE
Assumed Time to Remove One Station	8 Hours	
Labor	\$18.75 Per Hour	WYDOT-WDD
Dump Truck (10-12 yd ³)	\$26.52 Per Hour	90% of DQCRG
Caterpillar 980F Front-End Loader	\$57.94 Per Hour	90% of DQCRG
Cost to Remove One Surface Water Station = (Labor Cost x Time to Remove Station) + (Labor Cost + Truck Cost) x Time to Remove Station + (Labor Cost + Loader Cost) x Time to Remove Station	\$150.00 \$362.16 \$613.52	
Cost to Remove One Surface Water Station =	\$1125.68	

Appendix O Cost Estimates for Demolition and Removal of One "Standard" Meteorological or Air Quality Monitoring Site

•.

	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE
Assumed Time to Remove One Station	4 Hours	
Labor	\$18.75 Per Hour	WYDOT-WDD
Dump Truck (10-12 yd ³)	\$26.52 Per Hour	90% of DQCRG
Caterpillar 428B (2WD) Front-End Loader	\$15.07 Per Hour	90% of DQCRG
Cost to Remove One Meteorological or Air Quality Station = (Labor Cost x Time to Remove Station) + (Labor Cost + Truck Cost) x Time to Remove Station + (Labor Cost + Loader Cost) x Time to Remove Station	\$75.00 \$181.08 \$135.28	
(to Remove One Meteorological or Air Quality Station =	\$391.36	1

Appendix P Cost Estimate for Scarification of Compacted Surfaces

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	INPUT, UNIT AS INDICATED	COMMENT/ SOURCE
CATERPILLAR 16H MOTOR GRADER		
Speed in Miles Per Hour (First Gear)	2.4 Miles/Hour	СРН 25
Width of Scarifying Pass	12 Feet	СРН 25
Feet Per Mile	5,280 Feet	
Square Feet Per Acre	43,560 Sq. Ft.	
Operating Efficiency Factor 50 Min./Hr.	0.83%	СРН 25
Operating Costs	\$65.51 Per Hour	90% of DQCRG
Labor Costs	\$18.75 Per Hour	WYDOT-WDD
- pervision Labor Costs	\$3.13 Per Hour	1/8 of 90% of DQCRG
Supervisor Transportation	\$1.10 Per Hour	1/8 of 90% of DQCRG
Total Houriy Costs	\$88.49	
SCARIFICATION RATE		
(2.4 Miles/Hour)x(5,280 Ft./Mile)x(12 Ft./Pass)	152,064 Ft ² /Hour	
(152,064 Ft ² /Hour)/(43,560 Ft ² /Acre)	3.49 Acres/Hour	
(3.49 Acres/Hour)x(0.83 Efficiency Factor)	2.90 Acres/Hour	
OPERATING COSTS		
(\$88.49/Hour)/(2.90 Acres/Hour)	\$30.51 Per Acre	

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General Revegetation Activity	Chicolate According To Specific Permit Commitments
) Seedbed Preparation	
Ripping	\$
Chisel Plowing	5
Disking	15
Harrowing or Cultipacking	S
) Drill Seed Stubble Mulch Mix	
Seed Costs	\$
Drill Seeding	·\$
Mowing Prior to Planting Permanent Seed Mix	· s
b) Seeding Permanent Mixes: Detail for each seed mix, if different seed mixes will be applied. Th individual mix should then be proportioned on the basis of acreage per parcels to derive a single	e costs/acre for each weighted average cost/acre.
Drill Seeding	\$
Broadcast Seeding	s
jeed Costs	s
) Mulching	
Mulch Purchase	S
Hydromulch Application	S
Straw Mulch Placement and Crimping	S
i) Fertilizer	
Fertilizer Purchase by Defined Composition	S:
Application	s
) Fencing	
Construction	S
Removal	S
Subtotal	s
7) Maintenance Operations at 10% of Total Revegetation Costs: This cost addresses standard husbandry practices applied over the minimum 10-year bonding period, such as remedial seeding, mowing, selective weed treatment, etc. The 10 percent figure is derived from historical operator experience for the Powder River Basin.	\$
Total Revegetation Cost Per Acre	s



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ATTACHMENT E-6-3 QUOTES AND PRICES ---EQUIPMENT RATES

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HRI ALBUQUERQUE HRI, INC.

Crownpoint Office P. O. Box 777 Physical Address X mile W of Crownpoint Crownpoint, New Mexico 87313 Voice: 505-786-5845 Fax: 505-786-5555

MARK

BACKHOE 1400 Day 550 work 1650 Monizit (RUST TRACTY PENTAL ALBUY/REM. 200 boy 600 wet 1800 MONTH ROAD MACHINERY ABY / FAR MINT ESCAUATOPS (TRACK HOE) 400 lom 54 HP 1200 work 3600 may Ch ROAD MARHINEN 330 / Om 1330 - week 3990 man 7h Pur Renfel ABY FARM ay M + 35% For Fuel | operator | DElivery I HAVE CALL IN TO AMERICAN CEMOIL COUP ALBUY FOR PUDE ON BULLE CEMPENT DEL TO CHUrchrock 505-753-6269 (Peler (Anitoup) 3300 culunde X 21 SACES pryend = 69,300 SHEES. entine S.n. A.

7. Building Decommissioning

7.1. Introduction and Description

All radiologically contaminated buildings, and other structures will be decontaminated prior to final reclamation to unrestricted release standards in accordance with NRC requirements, or removed to the appropriate disposal facilities. Decontamination will include acid, and water washdown of structures, and concrete. The resulting waste water will be disposed by brine concentration, and evaporation. Equipment which is not decontaminated will be dismantled, and disposed in an U.S. NRC licensed waste disposal facility, or utilized at another NRC licensed uranium facility. All uncontaminated foundations will be removed, or broken, and buried in place.

7.2 Budget Assumptions

The Building Decommissioning Budget is formatted with the underlying assumptions integrated into the tabulation. The budget figures distinguish individually costs associated with decontamination, demolition, transportation and disposal costs.

Buildings sizes were estimated using the schematic diagram COP Figure 2.1-2. At the Crownpoint location wall heights were estimated. HRI used Wyoming Department of Environmental Quality guideline costs to estimate demolition costs for non-contaminated structures. Concrete demolition cost was estimated by local contractor (See Attachment E-7-3).

HRI assumed that 100 % of the buildings would be released for unrestricted disposal after decommissioning. For concrete floors it was assumed that 100% of the CR Satellite would meet release standards. These assumptions were used to determine disposal costs.

Management will be provided from the site staff who will be available six months after restoration. No credit is given for salvage value of any buildings.

All restricted and unrestricted disposal was priced at the bulk rate as shown in Attachment E-5-2.

A contingency was included for health and safety supplies such as disposable uniforms and respirators.

As shown in Attachment E-7-1, the total cost for building demolition and removal is projected to be \$98,775.

ATTACHMENT E-7-1 BUILDING DECOMMISSIONING BUDGET

Building and Demolition and Disposal

	~331	Crownpoint offices will be left intact after the project ends		
		Description	Satallita	Cost
.l.	Dec	ontamination Costs	Satembe	GOAL
	A.	Wall decontamination		
		Area to be decontaminated (ft ²)	12167	
		Application rate (gallons/ft)	1	
		HCI acid wash, including labor (\$/gallon)	\$0.50	
	-	Subtotal wall decontamination costs	\$6,083	\$6,083
	В.	Concrete floor decontamination		
		Area to be decontaminated (117)	10491	
		Application rate (gallons/it) HCL sold/wesh individing (shor/\$/sollion)	4 • ድር ፡ ድር	
		Subtotal concrete floor decontamination costs	\$20:002 \$20:082	.820.082
			\$20 <u>;</u> 802.	·\$20,502
11.	Den A	nolition Costs Building		
	e . W.,	Drver bldg, demolition unit cost of \$0.75/ft ³ for additional		
		radiation safety precautions.		
		Volume of building (ft ³)	209820	
		Demolition unit cost per WDEQ Guideline No. 12 (\$/ft ³)	\$0.15	
		Drver building demolition unit cost (\$/ft ³)	••••	
		Subtotal building demolition costs	\$31,893	\$31,893.
	B.	Concrete floor	• • •	• • • • • • •
		Area of concrete floor (ft ²)	10491	
		Demolition unit cost (ft3) per local estimate	\$1.20	
		Subtotal concrete floor demolition costs	\$12,589	\$12,589
III.	Disp	osal Costs		
	A.	Building		
		Volume of building (cy)	7771	
			ê07 00	
		Building will collaps to 10% of standing volume	\$27.00 777	
		Percentage (%) on site	100	
		Subtotal unrestricted disposal costs	\$20,982	\$20,982
	B .	Concrete floor	- • .	•••
		Area of concrete floor (ft ²)	10491	
		Average Thickness of concrete floor (ft)	0.5	
		Volume of concrete floor (ft ³)	5246	
		Volume of concrete floor (cy)	194	
		1 Unrestricted		
		Percentage (%)	100	
		Volume for disposal (ft [*])	194	
		Disposal unit cost \$/cy	\$27.00	
		Subtotal on-site disposal costs	\$5,246	\$5,246
III.	Hea	Ith and Safety Costs		
	I OTA			\$1,000
TOT	AL BU	ILDING DEMOLITION AND DISPOSAL COSTS		\$98,775
)		

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ATTACHMENT E-7-2 BUDGET BACKUP

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RELEASE STANDARDS

Limits for Release to Uncontrolled Areas

Nuclide	Average ^a	Maximum ^b	<u>Removable</u> ^C
U-nat	5,000 dpm/100 cm2	15,000 dpm/100 cm2	1,000 dpm/100 cm ²
226-Ra	100 dpm/100 cm2	300 dpm/100 cm ²	20 dpm/100 cm ²

a. Averaged over no more than 1 m^2 .

b. Applies to an area of not more than 100 cm².

c. Determined by smearing with dry filter, or soft absorbent paper, applying moderate pressure and assessing the amount of radioactive material on the smear.

Source: Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors," and "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use, or Termination of License for Byproduct, Source, or Special Nuclear Material."

ATTACHMENT E-7-3 QUOTES AND PRICES

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8. Surface Reclamation

8.1. Introduction and Description

The purpose of the surface reclamation program will be to reestablish the sites to their premining topographic conditions, stabilize the site with self-sustaining vegetative cover, and to restore all land disturbed by mining, and related activities to a productive condition for livestock grazing, wildlife habitat consistent with the present, and/or historical use of the area. It is anticipated that future land use will be similar to current uses.

8.2. Budget Assumptions

The Surface Reclamation Budget is formatted with the underlying assumptions integrated into the tabulation. The budget figures distinguish individually costs associated with wellfield area reclamation, wellfield road.

Wellfield sizes and road lengths were estimated using the schematic diagram COP Figure 1.4-3. Unit costs for road, wellfield, pond were calculated by HRI (See Attachment E-8-2).

After all of the equipment is removed the entire wellfield area will be scanned to assure that no residual contamination remains on the soil. Scans will be conducted according to the according to Procedure shown in Attachment E-6-2, and the hot spots characterized, picked up and disposed of at a NRC licensed facility. The on site management would conduct these surveys.

All disposal was priced at the bulk rate as shown in Attachment E-6-4.

As shown in Attachment E-8-1, the total cost for final surface reclamation is \$291,161.

ATTACHMENT E-8-1 SURFACE RECLAMATION BUDGET

Wellfield and Satellite Surface Reclamation

	10/0116	Description		Unit	Total
1.	wein	Wellfields rea (acres)		181	
		Disking/seeding unit cost (\$/acre)		\$200	
	Subto	tal reclamation costs for wellfield		4200	\$36,200
					••
I.	Wellf	ield Road Reclamation			
		Length of wellfield roads (1000 ft)		5	
		Wellfield road reclamation unit cost (\$/1000 ft)		\$690	
	Subto	tal wellfield road reclamation costs			\$3,450
11.	Pond	Decomissioning (2 X 350')			
		Assumptions:			
		Sediment disposal of 6 inches (ft3)		26797	
		Pond dimension are 350 ft x 350 ft. x 20 ft. or 3 acres		3	
		Disposal of inner and outer liners			
		Soll below the liners is not contaminated		0700	
		Polded liner volume each (its).		2700 \$27.75	
		Buldezer beurly rate (w/operator)		\$37.75 \$27.75	
	٨	Bomoval and loading		\$31.13	
	Ω.	1 Equipment			
		Number of backhoes		1	
		Number of hours		40	
		Number of buildozers		1	
		Number of hours		40	
		2 Labor			
		Number of persons		3	
		Number of hours		40	
		\$/hr/person		\$15.00	
	_	Total removal and loading costs		\$4,820.00	
	В.	Transportation and disposal			
		Transportation and disposal unit costs (\$/ft3)		\$3.83 \$113 EG2	
	Subto	total pond, reclamation costs (1 ponds)		\$113,000 \$119,292	
	Subto	otal pond reclamation costs (1 ponds)		φ110,303	\$236,767
v	Soil				
	Assu	notions:			
		Acres of plant area	6		
		Surveys by staff			
		Depth of contaminated soil (in)	2		
		Percent of wellfield contaminated	1		
		Soil analysis each	\$100		
	Α.	Survey costs			
		50 soil sample analysis	\$5,000		
		Flags, and supplies	\$250		
	Б	Suprotal survey costs	\$5,250		
	в.	Dispusal costs Backhoe one week	¢4 =40		
		Volume to dispessal	\$1,510		
		NRC disposal unit cost (ff3)	430		
		Subtotal NBC-licensed facility disposal costs	\$1.677		
	Plant	area soil D & D costs	ψ1,011		\$6,927
	Final	Sattellite Area Reclamation			
		Assumptions:			
		Area of disturbance (acres)		10	
	Α.	Ripping overburden with dozer			
		Ripping unit cost per WDEQ Guideline No. 12, App.11 (\$/acre)		\$581.67	
		Subtotal ripping costs		\$5,817	
	В.	Disking and seeding			
		Disking/seeding unit cost (\$/acre)		\$200.00	
		Subtotal disking/seeding costs		\$2,000	
	Subto	otal surface reclamation costs			\$7,817
OT.		LEIELD AND SATELLITE SURFACE RECLAMATION COSTS			\$291 161
~					Ψ2.J 1, 10 I

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ATTACHMENT E-8-2 BUDGET CALCULATIONS

POND VOLUMES ROAD REMOVAL

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PROGRAM TO CALCULATE THE VOLUME CONTAINED WITHIN A RECTANGULAR POND WITH KNOWN SLOPE AND DEPTH

ALL DIMENSIONS ARE IN FEET

THE TOP OF THE POND MEASUREMENTS ARE:

350
350
20
3

W=	BOTTOM WIDTH	230
L=	BOTTOM LENGTH	230

DEPTH	GALLONS	CUBIC FEET	CUBIC YARDS
0.50	200,438	26,797	992
1.00	406,104	54,292	2,011
1.50	617,086	82,496	3,055
2.00	833,392	111,418	4,127
2.50	1,055,148	141,083	5,225
3.00	1,282,401	171,444	6,350
3.50	1,515,220	202,570	7,503
4.00	1,753,671	234,448	8,683
4.50	1,997,822	267,089	9,892
5.00	2,247,740	300,500	11,130
5:50	2,503,492	334,692	12,396
6.00	2,765,147	369,672	13,692
6.50	3,032,770	405,451	15,017
7.00	3,306,429	442,036	16,372
7.50	3,586,193	479,438	17,757
8.00	3,872,127	517,664	19,173
8;50	4,164,299	556,725	20,619
9.00	4,462,777	596,628	22,097
9.50	4,767,629	637,384	23,607
10.00	5,078,920	679,000	25,148
	•		

Liner Size

375X375



WELLFIELD ROAD RECLAMATION

Assumptions:

.

1. Gravel road base removed at cost of \$0.60/cy/1000 ft (WDEQ Guideline No. 12, Appendix C)

2. Gravel road base: average depth = 0.5 ft, average width = 15 ft

3. Roads scarified prior to topsoil application at cost of \$30.51/acre (WDEQ Guideline No. 12, Appendix P)

4. Grading of scarified roads prior to topsoil application at cost of \$33.27/acre (WDEQ Guideline No. 12, Appendix G)

5. Topsoil applied at cost or \$0.60/cy/1000 ft (WDEQ Guideline No. 12, Appendix C, surface grade: level ground)

6. Stripped topsoil: average depth = 0.67 ft, average width = 25 ft

7. Discing/seeding cost of \$200/acre

Costs per 1000 ft of road

	Width (ft)	Thick (ft.)	<u>Yd3</u>	<u>\$/Yd3</u>	Total
Road base removal	15	0.5	278	\$0.60	\$166.67
Topsoil application	25	0.67	620	\$0.60	\$372.22
	Width (ft)		Acres	\$/Acres	Total
Scarification	25		0.6	\$30.51	\$17.51
Grading	25		0.6	\$33.27	\$19.09
Disking/seeding	25		0.6	\$200.00	\$114.78

TOTAL WELLFIELD ROAD RECLAMATION

<u>\$690.28</u>

ATTACHMENT E-8-3 QUOTES AND PRICES

.

DISKING/SEEDING

Assumption:

1. Based on actual contractor costs

TOTAL DISCING/SEEDING COSTS PER ACRE = \$200.00

9. Contingency/Profit

Contractor profit has been included at 15% of the total cost for groundwater restoration, groundwater stability analysis, well plugging and equipment removal and 25% of the total cost for wellfield D & D, building D & D, and surface reclamation.

Shown in Section 10 Contingency/Profit is \$2,501,941.

10. Summary

CROWNPOINT URANIUM PROJECT Restoration Action Plan for the Crownpoint Site

Cost Summary

Category	Project Total	Contingency/ Profit 15%	Contingency/ Profit 25%
Groundwater Restoration	\$10,890,592	\$1,633,589	
Groundwater Stability Analysis	\$427,160	\$64,074	
Well Plugging	\$3,951,287	\$592,693	
Equipment Removal	\$62,019	\$9,303	
Wellfield D & D	\$419,192		\$104,798
Building D & D	\$98,775		\$24,694
Surface Reclamation	\$291,161		\$72,790
Totals	\$16,140,185	\$2,299,659	\$202,282
Contingency/Profit			\$2,501,941
Total Surety			\$18,642,126

HRI CROWNPOINT URANIUM PROJECT Financial Assurance Plan Project Summary

Category	Project Total	Contingency/ Profit	Totals
Churchrock Section 8	\$8,593,794	\$1,345,278	\$9,939,072
Churchrock Section 17	\$4,686,497	\$709,578	\$5,396,075
Unit 1	\$11,618,016	\$1,792,017	\$13,410,033
Crownpoint	\$16,140,185	\$2,501,941	\$18,642,126
Totals	\$41,038,492	\$5,720,472	\$47,387,306

ABBREVIATIONS/ACRONYMS

\$	Dollars
\$/Kgal	Dollars per 1000 gallons
avg	average
ft	feet
ff2	square feet
:ft3	cubic feet
gal	gallons
gpm	gallons per minute
H&S	Health and Safety
H2S:	Hydrogen Sulfide.
H2SO4	Sulfuric Acid
HÇI	Hydrochloric Acid
Нр	Horsepower
Kgal	1000 gallons
Kwh	Kilowatt-hours
HaOH	Caustic Soda
OD	Outside Diameter
PPE	personal protective equipment
PV	Pore Volume
regm't	requirement
RO	Reverse Osmosis
WDEQ	Wyoming Department of Environmental Quality
WDW.	Waste Disposal Well
yd3	cubic yards
уг	year

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