

September 25, 2013

ATTN: Document Control Desk

Mr. Drew Persinko, Deputy Director Decommissioning and Uranium Recovery Licensing Directorate Division of Waste Management and Environmental Protection Office of Federal and State Materials and Environmental Management Programs Mailstop T8 F5 U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

FedEx # 8771 0139 7415

RE: NRC License SUA-1548, Docket No. 40-8964 Smith Ranch-Highland Uranium Project Revised 2013-14 Surety Estimate Updates and Request for Additional Information – 2012-13 Financial Assurance Estimates (TAC J00677)

Dear Mr. Persinko:

As previously discussed with Mr. Doug Mandeville of the NRC, Power Resources, Inc. d/b/a/ Cameco Resources (Cameco) is herein submitting a revision to the 2013-14 Surety Estimate Updates for the Smith Ranch and Highland Uranium Projects that were previously submitted to the NRC under cover dated July 30, 2013. These updates have been revised as a result of discussions with the Wyoming Department of Environmental Quality regarding assumptions and appropriate unit costs to be applied to plug and abandonment of drill holes.

As a result of changes associated with drill hole plug and abandonment and a correction to an error in the Reverse Osmosis (RO) and Degasser Removal unit cost in the Smith Ranch estimate, the revised estimates result in proposed surety amounts of \$129,929,600 and \$81,122,100 for the Smith Ranch and Highland projects, respectively. These proposed amounts represent an overall (combined) decrease of \$1,723,073 from the current NRC-approved amounts of \$120,044,303 and \$92,730,470.

To facilitate review of the proposed 2013-14 surety updates, attached are copies of a cost comparison of the 2012-13 vs 2013-14 surety updates, a summary document that describes new activities and adjustments to the 2013-14 surety estimates and (June 2013) updates to the water balance/restoration schedules for each project.

CAMECO RESOURCES Smith Ranch-Highland Operation Mail: P.O. Box 1210 Glenrock, WY 82637 USA

Tel: (307) 358-6541 Fax: (307) 358-4533 www.cameco.com Under cover dated May 29, 2013, Cameco received a Request for Additional Information (RAI) following NRC's review of the 2012-13 surety estimates, with a recommendation that the RAI comments be addressed in the 2013-14 surety updates. While these comments were addressed by Cameco during preparation of the 2013-14 updates, Cameco will be providing specific responses to the RAI comments under separate cover.

If you have questions or need additional information prior to Cameco's response to the 2012-13 financial assurance RAIs, please feel free to contact me directly at (307) 316-7586.

Sincerely,

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Scott A. Bakken Manager, SHEQ Systems & Compliance

SB/sb

- Att: Smith Ranch Project, 2013-14 Surety Estimate Update, Revision 1 Highland Uranium Project, 2013-14 Surety Estimate Update, Revision 1
- cc: D. Mandeville, USNRC w/Att File SR 4.6.4.1 w/Att File HUP 4.6.4.1 w/Att
- ec: CR-Cheyenne

Smith Ranch Project

WDEQ/LQD Permit to Mine No. 633 - NRC License No. SUA-1548

2013-2014 Surety Estimate Update

The 2013-2014 Surety Estimate is based on the standardized uranium in-situ leach (ISL) bond format developed by the Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD), and, where applicable, the unit costs provided in WDEQ/LQD Guideline No. 12 (October 2012). The 2013-2014 Surety Estimate results in a proposed surety of \$129,929,600, which is a decrease of \$19,740,334 from the current WDEQ-approved 2012-13 estimate of \$149,669,934.

The attached 2013-14 Surety Estimate is based on the costs to complete ground water restoration, surface reclamation and decommissioning by a third party and contains all worksheets, master costs and unit cost derivations. A cost comparison of the 2012-13 vs 2013-14 surety estimates is also attached to facilitate review of this year's surety update. This comparison shows the dollar adjustments associated with individual cost components and is consistent with the changes described in the Surety Adjustments section below.

New Activities

The 2013-2014 Surety Estimate reflects costs associated with new development and restoration activities during the report period and planned operations during the next one-year surety period.

Restoration

Restoration activities continued in Mine Units 1 and 4 during the report period. Based on the status of restoration activities in these mine units, the number of planned pore volume (PV) treatments was reduced from 2 to 1 (Reverse Osmosis with Chemical Reductant) in Mine Unit 1 and from 0.9 to 0.6 (Ground Water Sweep) and 4.0 to 3.5 (Reverse Osmosis) in Mine Unit 4/4A. The costs associated with these changes are reflected in the Surety Adjustments section below.

Planned Operations

The 2013-14 surety estimate has been updated to incorporate final wellfield designs for mine units in development and add costs associated with new development and production (start-up) during the next surety period. For Mine Unit 10, these changes include a reduction in the number of header house pattern areas from 12 to 9. As a result, costs associated with ground water restoration, wellfield buildings and surface reclamation have been adjusted in the current estimate and are reflected in the Surety Adjustments section below.

During the next surety period, Cameco Resources (Cameco) anticipates development and production (start-up) from Mine Units 7 and 27. Updating the surety estimate with applicable

costs, including ground water restoration for Mine Unit 27, results in an increase of approximately \$2,700,000 (before any escalators). Cameco also plans to install 60 monitor wells in Mine Unit 10-Extension in preparation for hydrologic baseline testing and future development of this mine unit. Updating the surety estimate with applicable costs results in an increase of approximately \$150,000 (before any escalators).

Surety Adjustments

Water Balance/Schedule Update

Cameco's water balance/schedule for the Smith Ranch Project was updated in June 2013 (see attached) to accompany the 2013 Annual Report to the WDEQ/LQD and 2013-14 Surety Estimates to the WDEQ/LQD and U.S. Nuclear Regulatory Commission (NRC). The water balance/schedule is an important aspect of the surety estimate as the number of years to restore ground water in each mine unit are reflected directly in various wellfield (GWR-WF Sheet) and site-wide (GWR-SITE Sheet) cost components of the surety estimate.

To facilitate preparation and review of the 2013-14 surety update, a new Restoration Schedule section was added to the wellfield data (WF DATA) worksheet to provide a link (data input) between the water balance/schedule and various cost components of the surety estimate. The Restoration Schedule section identifies the number of years associated with pre-restoration (i.e., the number of years a wellfield maintains bleed prior to active restoration), restoration (e.g., ground water sweep, reverse osmosis, etc.) and stability in each mine unit based on the 2013 update to the water balance/schedule.

In summary, the 2013 update to the water balance/schedule results in a ground water restoration period of 18 years, which is a decrease of 6 years from the 2012 update. Consistent with the current approved schedule, the proposed schedule continues to assume nine PVs of treatment including one PV of ground water sweep (GWS) and eight PVs of reverse osmosis (RO) treatment. Provided below is a summary of major changes to the 2013 water balance/schedule that resulted in a reduction in the restoration period from 24 to 18 years.

- Adjustment to PV treatments remaining based on progress of restoration to date;
- Adjustment to flow rates for wellfields in restoration based on current and planned flows;
- Sequencing of RO timelines to occur concurrently with GWS using a phased-approach in each mine unit. Previously, the schedule assumed extraction of one full PV of GWS throughout the entire mine unit prior to commencing RO treatment;
- Correction to RO timeline for Mine Unit 3, which previously assumed an RO unit operating period of 209 days per year vs 350 days per year that is assumed for all other mine units;
- Addition of 50 gallons per minute (gpm) waste water disposal capacity for Deep Disposal Well (DDW) #7 commencing in 2014;
- Addition of 50 gpm waste water disposal capacity for DDW #8 commencing in 2015; and
- Addition of 25 to 75 gpm waste water disposal capacity through Highland facilities commencing in 2016 following construction of the Smith Ranch-Highland connecting pipeline.

Total Restoration and Reclamation Cost Estimate (TOTALS Sheet)

The 2013-14 surety update was revised by adjusting the overall contingency (as shown on the TOTALS worksheet) from 25% to 15% and applying additional escalators for contractor profit and overhead to individual master costs as appropriate (see Master Costs section below for additional information). Footnotes were added to the TOTALS worksheet to provide applicable regulatory references for the 15% contingency and 10% contractor profit and overhead line items. An additional footnote was added to clarify that the cost estimate reflects both WDEQ and NRC requirements and that no salvage value was assumed in calculation of the overall estimate.

Master Costs (MASTER COSTS Sheet)

As noted above, the 2013-14 surety update was revised by applying additional profit and overhead to master costs as appropriate. These costs and applicable percentages include a 40% net benefits escalator for labor, 10% profit and overhead for equipment (based on rates obtained from Equipment Watch Rental Rate Blue Book) and 10% profit and overhead for unit costs obtained from WDEQ/LQD Guideline No. 12. Other master costs, such as utility costs, chemical/material costs, analytical costs and waste disposal, are based on actual costs of third-party service providers that include profit and overhead.

The 2013-14 surety update was also updated to incorporate applicable pump efficiencies in the Master Costs sheet and Unit Cost calculations as appropriate. These efficiencies include 80% for all down-hole pumps and 90% for all surface pumps.

The 2013-14 surety estimate also reflects updated master costs for disposal of construction and demolition (C&D) debris and 11e.(2) byproduct material. These costs include an increase in C&D debris disposal based on 2013 costs and decrease in 11e.(2) byproduct material based on existing contracts and disposal options.

Ground Water Restoration (GWR-WF and GWR-SITE Sheets)

The 2013-14 surety update results in an estimate of \$82,473,177 in ground water restoration costs, which is an increase of approximately \$13,300,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Ground Water Restoration – Wellfield Costs

Ground Water Sweep	Adjustment to GWS unit cost from \$2.21 to \$1.90 per 1000 gallons (kgal). Reduced PV treatments for Mine Unit 4/4A from 0.9 to 0.6. Added Mine Unit 27. Net adjustment: \$117,737 decrease.
Reverse Osmosis	Corrected typographical error resulting in the addition of 4.5 PV treatments for Mine Unit 2. Reduced PV treatments for Mine Unit 4/4A from 4.0 to 3.5. Added Mine Unit 27. Unit cost adjustment to

account for pumping recovery fluids from wellfield to RO and pumping RO permeate from satellite to wellfield. Net adjustment: \$3,783,819 increase. RO with Reductant Reduced PV treatments for Mine Unit 1 from 2 to 1. Added Mine Unit 27. Unit cost adjustment to account for pumping recovery fluids from wellfield to RO and pumping RO permeate from satellite to wellfield. Net adjustment: \$2,746,318 increase. Mechanical Integrity Tests Revision to time period (years) based on updated water balance. Unit cost adjustment based on productivity and equipment requirements. Net adjustment: \$888,954 decrease. Wellfield Refurbishment Adjustment in unit cost for header house upgrades from \$16K to \$32K per header house. Net adjustment: \$955,799 increase. Monitoring and Sampling Revision to time period (years) based on updated water balance. Added pre-restoration period to account for excursion monitoring costs until wellfield moves into restoration. Decrease in wells requiring sampling based on permit/license requirements. Decrease in analytical costs based on third-party laboratory fees. Net adjustment: \$4,233,741 decrease. Header House Heating Added costs for Mine Units 7 and 27. Revision to time period (years) based on updated water balance. Updated electrical costs. Net adjustment: \$1,238,272 increase. Ground Water Restoration – Site-Wide Costs **Building Utility** Updated annual heating costs based on actual operating costs. Reduced time period for Satellite SR-1 from 24 to 16 years. Reduced time period for Reynolds Satellite from 24 to 6 years.

- Reduced time period for all remaining facilities from 24 to 18 years. Net adjustment: \$5,618,911 decrease.
- Booster Pump Operation Updated annual operating cost from approx. \$12K to \$156K and adjusted time period from 24 to 18 years. Net adjustment: \$2,507,471 increase.
- Infrastructure, etc. Updated annual operating cost from approx. \$62K to \$92K and adjusted time period from 24 to 18 years. Net adjustment: \$173,760 increase.
- Deep Disposal Well MIT Updated MIT cost from approx. \$42K to \$32K. Increased number of wells from seven to nine. Adjusted number of MITs per well

	from 4 to 3 based on updated restoration schedule. Net adjustment: \$615,663 decrease.
Capital	Added costs associated with installation of DDWs SRHUP #8, REY #2 and REY #3. Added costs associated with installation of RO units at Satellite SR-2 and the Reynolds Satellite. Added costs for construction of pipeline from Satellite SR-2 to Mine Unit 15 and the Smith Ranch-Highland connecting pipeline. Net adjustment: \$11,876,248 increase.
Vehicle Operation	Reduced time period from 24 to 19 years (i.e., end of stability period). Net adjustment: \$573,630 decrease.
Labor	Allocated 50% of supervisory labor to Smith Ranch with remaining 50% to Highland. Added one Environmental/Health Physics Tech, two Operator/Laborer and two Maintenance Tech positions. Reduced time period from 24 to 19 years (i.e., end of stability period). Net adjustment: \$2,067,158 increase.

Well & Drill Hole Abandonment (WA Sheet)

The 2013-14 surety update results in an estimate of \$17,539,778 in well and drill hole abandonment costs, which is a decrease of approximately \$22,177,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Well Abandonment	Updated inventory of in-service wells. Added abandonment costs for planned replacement wells associated with wellfield refurbishment. Adjustment for wells pending bond release using new WDEQ/LQD Guideline No. 12 unit cost for removal and disposal of casing. Net adjustment: \$2,176,794 decrease.
Contaminated Soil	Updated inventory of in-service wells. Unit cost adjustment that includes reduced 11e.(2) byproduct material disposal costs. Net adjustment: \$379,853 decrease.
Drill Hole Abandonment	Revised assumption that only 20% of drill holes may require topping off (i.e., sealing) within upper 100 feet of drill hole. Updated number of drill holes projected for 2011-12 and 2012-13 based on actual number of holes drilled. Added projected drill holes for 2013-14. Net adjustment: \$20,044,814 decrease.

Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)

The 2013-14 surety update results in an estimate of \$4,997,354 in wellfield building and equipment removal and disposal costs, which is a decrease of approximately \$488,000 from the

2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Wellfield Piping Unit cost adjustment based on productivity associated with wellfield piping removal (vs buried trunkline) and use of chipper during removal/disposal process. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$475,085 decrease. Well Pumps/Tubing Updated inventory of in-service wells. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$174,029 increase. **Buried Trunkline** Unit cost adjustment assuming use of chipper during piping removal. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$15,270 decrease. Header Houses Revised assumption in header house volume from 800 to 1600 cubic feet. Unit cost adjustment for disposal of C&D debris. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$186,391 decrease.

Wellfield & Satellite Surface Reclamation (WF REC Sheet)

The 2013-14 surety update results in an estimate of \$987,961 in wellfield and satellite surface reclamation costs, which is an increase of approximately \$106,000 from the 2012-13 estimate. In summary, no major changes are included in the 2013-14 surety update.

Equipment Removal & Disposal (EQUIP Sheet)

The 2013-14 surety update results in an estimate of \$1,041,973 in equipment removal and disposal costs, which is an increase of approximately \$513,750 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Removal and Loading	Adjustments to unit costs for tanks and piping for consistency with
	Highland surety estimate. Net adjustment: \$524,525 increase.

Building Demolition & Disposal (BLDGS Sheet)

The 2013-14 surety update results in an estimate of \$4,000,657 in building demolition and disposal costs, which is an increase of approximately \$972,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Disposal Application of 0.33 conversion factor to account for air space in buildings and determine C&D debris volume for disposal. Unit

cost adjustment for disposal of C&D debris. Net adjustment: \$744,844 increase.

Miscellaneous Reclamation (MISC REC Sheet)

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The 2013-14 surety update results in an estimate of \$1,941,337 in miscellaneous reclamation costs, which is an increase of approximately \$1,063,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Potential Ground WaterAdded investigation costs for Casing Leak Investigation (CLI)Mitigation (CLI)activities and abandonment costs associated with potential shallow
well installations. Net adjustment: \$940,661 increase.

Smith Ranch Project WDEQ/LQD Permit to Mine No. 633 - NRC License No. SUA-1548 Comparison of 2012-13 vs 2013-14 Surety Estimates

	2012-13	2013-14	
Cost Component	Surety Estimate	Surety Estimate	Adjustment
Groundwater Restoration (GWR-WF and GWR-SITE Sheets)	\$69,172,968	\$82,473,177	\$13,300,209
Groundwater Restoration - Wellfield Costs			
Ground Water Sweep	\$2,529,945	\$2,412,208	(\$117,737)
Reverse Osmosis	\$4,929,627	\$8,713,446	\$3,783,819
Reverse Osmosis with Chemical Reductant	\$4,702,575	\$7,448,893	\$2,746,318
Mechanical Integrity Testing	\$3,082,752	\$2,193,798	(\$888,954)
Wellfield Refurbishment	\$5,663,344	\$6,619,143	\$955,799
Monitoring and Sampling	\$10,402,776	\$6,169,035	(\$4,233,741)
Header House Heating	\$2,692,440	\$3,930,712	\$1,238,272
Subtotal	\$34,003,459	\$37,487,235	\$3,483,776
Groundwater Restoration - Site-Wide Costs			
Building and DDW Utility	\$11,438,185	\$5,819,274	(\$5,618,911)
Booster Pump Operation	\$299,856	\$2,807,327	\$2,507,471
Infrastructure, Equipment Maintenance, Replacement and Repair	\$1,488,000	\$1,661,760	\$173,760
Deep Disposal Well MIT	\$1,469,538	\$853,875	(\$615,663)
Capital	\$0	\$11,876,248	\$11,876,248
Vehicle Operation	\$4,780,800	\$4,207,170	(\$573,630)
Labor	\$15,693,130	\$17,760,288	\$2,067,158
Subtotal	\$35,169,509	\$44,985,942	\$9,816,433
Well & Drill Hole Abandonment (WA Sheet)	\$39,717,062	\$17,539,778	(\$22,177,284)
Well Abandonment	\$17,468,832	\$15,292,038	(\$2,176,794)
Removal of Contaminated Soil Around Wells	\$918,146	\$538,293	(\$379,853)
Drill Hole Abandonment	\$20,482,966	\$438,152	(\$20,044,814)
Waste Disposal Well Abandonment	\$847,118	\$1,271,295	\$424,177
Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)	\$5,485,081	\$4,997,354	(\$487,727)
Wellfield Piping	\$3,423,347	\$2,948,262	(\$475,085)
Well Pumps and Downhole Tubing	\$186,962	\$360,991	\$174,029
Buried Trunkline	\$1,013,985	\$998,715	(\$15,270)
Wellhead Covers	\$69,131	\$84,121	\$14,990

Smith Ranch Project

WDEQ/LQD Permit to Mine No. 633 - NRC License No. SUA-1548

Comparison of 2012-13 vs 2013-14 Surety Estimates

	2012-13	2013-14	
Cost Component	Surety Estimate	Surety Estimate	Adjustment
Header Houses	\$791,656	\$605,265	(\$186,391)
Wellfield & Satellite Surface Reclamation (WF REC Sheet)	\$881,887	\$987,961	\$106,074
Wellfield Pattern Areas	\$462,329	\$563,144	\$100,815
Wellfield Roads	\$238,521	\$252,671	\$14,150
Laydown Areas	\$44,314	\$53,766	\$9,452
Fence Removal	\$63,242	\$65,474	\$2,232
Satellite Areas	\$73,481	\$52,906	(\$20,575)
Equipment Removal and Disposal (EQUIP Sheet)	\$528,223	\$1,041,973	\$513,750
Removal and Loading	\$447,318	\$971,843	\$524,525
Transportation and Disposal	\$80,905	\$70,130	(\$10,775)
Building Demolition and Disposal (BLDGS Sheet)	\$3,028,249	\$4,000,657	\$972,408
Decontamination	\$133,127	\$113,517	(\$19,610)
Demolition	\$1,674,234	\$1,921,408	\$247,174
Disposal	\$1,220,888	\$1,965,732	\$744,844
Miscellaneous Reclamation (MISC REC Sheet)	\$878,476	\$1,941,337	\$1,062,861
CPF/Office Area	\$112,790	\$119,619	\$6,829
Access Roads	\$163,697	\$271,519	\$107,822
Waste Water Pipelines	\$481,415	\$507,505	\$26,090
Settling Basin/Storage Pond Reclamation	\$120,574	\$102,033	(\$18,541)
Potential Ground Water Mitigation (CLI)	\$0	\$940,661	\$940,661
Subtotal Restoration and Reclamation Cost Estimate	\$119,735,947	\$112,982,237	(\$6,753,710)
Contingency, Profit and Overhead	\$29,933,987	\$16,947,336	(\$12,986,651)
Total Restoration and Reclamation Cost Estimate	\$149,669,934	\$129,929,600	(\$19,740,334)

Total	Restoration and Reclamation Cost Estimate			
I.	Groundwater Restoration (GWR-WF and GWR-S	ITE Sheets)		\$82,473,177
II.	Well & Drill Hole Abandonment (WA Sheet)		· · · · · · · · · · · · · · · · · · ·	\$17,539,778
III.	Wellfield Buildings & Equipment Removal & Dispe	osal (WF BLDGS S	sheet)	\$4,997,354
IV.	Wellfield and Satellite Surface Relclamation (WF B	REC Sheet)		\$987,961
V.	Equipment Removal & Disposal (EQUIP Sheet)			\$1,041,973
VI.	Building Removal & Disposal (BLDGS Sheet)			\$4,000,657
VII.	Miscellaneous Reclamation (MISC REC Sheet)			\$1,941,337
	Subtotal Restoration and Reclamation Cost Estima	te		\$112,982,237
	Contractor Prof	it & Overhead (10	%) ¹ See Master Costs	
		Contingency (15	%) ² 15%	\$16,947,336
			TOTAL ³	\$129,929,600
¹ , Per V	WDEQ/LQD Guideline No. 12, Section 12(b)			
² , Per V	WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 1	3 and NRC License Co	ondition 9.5 (SUA-1548)	
³ , Costs	s reflect both WDEQ & NRC requirements. No salvage value as	sumed.		

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			Mine Unit	Mine Unit		· · · · · · · · · · · · · · · · · · ·			and the second second second	· · · · · · · · · · · · · · · · · · ·	Mine Unit 10-			
Ground Water Restoration -Wellfield	Mine Unit 1	Mine Unit 2	3/Ext	4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Ground Water Sweep Costs														
Estimated PV's	0	1	1	0.6	1	1	1	1	1	1	0		0	
Total kgals for GWS	0		152,825	71,530	137,426	52,669	84,209	78,562	136,376	190,435	0	and the second se	V	104,73
Bleed to Deep Disposal Well (%)	100		100	100	100		100		100	100,499	100			
Groundwater Sweep Unit Cost (\$/kgal)	\$1.90	\$1.90	\$1,90	\$1.90	\$1,90		\$1.90		\$1,90	\$1.90	\$1.90			\$1.90
Subtotal Ground Water Sweep Costs per Wellfield	\$0.00										\$0.00			
Total Ground Water Sweep Costs	\$2,412,208										• • • • •		\$ 0.00	
II. Reverse Osmosis Costs														
II. Reverse Osmosis Costs Estimated PV's		4.5	4.5	3.5	4.5	4.5	4.5	4.5	4.5	4.5				
Total Kgals for RO	0		687.713	417.256	618 417	237.011	378.941		4.5	4.5	0			4.5
Wellfield Pumping Cost	\$0.19	and a second second second second	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19		\$0.19	\$0.19	\$0.19			
Reverse Osmosis Unit Cost (\$/kgal)	\$0.58		\$0.58	\$0.58	\$0.58		\$0.58		\$0.58	\$0.58	\$0.58			
Bleed to Deep Disposal Well (%)	20%		20%	20%	20%	20%	20%	20%	20%	20%	20%			20%
Brine Volume for Disposal	0	99,707	137,543	83,451	123.683	47.402	75,788	70,706	122.738		20%			94,262
DDW Disposal Cost(\$/kgal)	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1,06	\$1.06			\$1.00
Permeate Volume for Re-Use	0	398,826	550,170	333,805	494,734	189,608	303,152	282.823	490,954	685,566	\$1.00			377.050
Satellite Pumping Cost	\$0,66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66			\$0,66
Subtotal Reverse Osmosis & Disposal Costs per Wellfield	\$0,00		\$1,032,364,75		\$928.341.30		\$568.849.36			\$1,286,428,15		\$1.007 465 05		
Total Reverse Osmosis Costs	\$8,713,446	4110,212.10		4020,000.70	0020,011.00	4000.170.00	\$500,045.50	4000,102,10	\$721,240.33	\$1,200,420.15	\$0.00	\$1,007,405.05	\$0.00	\$101,515.55
III. Reverse Osmosis with Chemical Reductant Costs														ļ
Estimated PV's	62,837		3.5	3.5	3.5 480,991		3.5				0.0		2 (2001)	
Total kgals for RO	02,837	387,748	5.54,888	417.256	480,991	184,342	294,732	274,967	477,316	666,523	0	521,987	0	366,576
Wellfield Pumping Cost Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)	\$0,67	\$0.67	\$0.67	0	\$0.67	\$0.67	0 \$0.67		\$0.67	\$0.67				60.0
Bleed to Deep Disposal Well (%)	20%	20%	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67			\$0.67
Brine Volume for Disposal (kgal)	12,567	77,550	106,978	83.451	96,198	36.868	58,946	54,993	95.463	133.305	20%		20%	73.315
DDW Disposal Cost(\$/kgal)	\$1,06	\$1.06	\$1.06	\$1.06	50,198 \$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06		\$1.06	\$1.06
Permeate Volume for Re-Use	\$50.270	\$310,198	\$427.910	\$333.805	\$384 793	\$147.473	\$235 785	\$219 974	\$381,853	\$533,218	\$1.08		\$1.00	\$293,261
Satellite Pumping Cost (\$/kgal)	\$30,270	\$0.66	\$9,66	\$333,803	\$384,793	\$147,473	\$235,785	\$219,974	\$0.66	\$333,218	\$0.66			\$293,201
Subtotal RO with Chemical Reductant per Wellfield	\$100.224.86	\$618,456,28	\$853,144,21	\$665,522,26	\$767,179.43		\$470,096.00			\$1,063,101,70	\$0.00			
Total Reverse Osmosis Costs	\$7,448,893	3018,430,28	\$655,144.21	\$005,522,20	\$707,179,43	\$294.024.23	\$470,090.00	3436,371.07	\$701.517.81	\$1,005,101.70	\$0.00	\$632,307.14	\$0,00	\$364,067.75
IV. Mechanical Integrity Testing (MIT) Costs								1000	ويوجعه والانجاب المحم	and the second second second	Contraction of the second			J
Pre-Restoration, Restoration and Stability Period (yrs)	2	8	11	7	10		14		18		0		0	17
Number of ProductionWells	95		207	229	416				260		0			135
Number of MITs required per Well	0.4	1.6	2.2	1.4	2.0		2.8		3.6		0.0			3.4
MIT Cost per Production Well	\$201.65	\$201.65 233	\$201.65 280	\$201.65 371	\$201.65 835	\$201.65	\$201.65 280	\$201.65 175	\$201.65 398	\$201.65 380	\$201.65		\$201.65	\$201.65
Number of Injection Wells	0.4			3/1		0 2.6			398		0.0			250
Number of MITs required per Well MIT Cost per Injection Well	\$130.60	1.6 \$130,60	2.2	\$130,60	2.0 \$130.60	\$130,60	2.8 \$130.60	\$130.60	\$130,60	3.8 \$130,60	\$130,60			3.4
Subtotal MIT Mine Unit	\$16,020.97	\$130,60	\$130,60	\$130,60	\$385,871,46	\$130.00			\$130.60		\$130,00		\$130.00	\$130.60
Total MIT Costs	\$16,020.97	\$91,920.69	\$1/2,2/9.78	\$132,481.39	\$385,871.40	\$0.00	\$198,938.85	\$128,454.00	\$3/3,865.21	\$.549,500.21	\$0.00	\$138,899.82	\$0.00	\$203,365.65
	32,193,798				Street in the second									
V. Wellfield Refurbishment Costs														
Well Replacement (#)	0	60	100	60	121	0	0	0	0	0	0		0	C
Replacement (\$/well)	\$14,763	\$14,763	\$14,763	\$14.763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763
Bellhole Refurbishment (#)	0	7	11	14	0	0	0	0	0	0	0	0	0	C
Refurbishment (\$/bellhole)	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530
Header House Refurbishment (#)	0	5	5	11	23	0	0	0	0	0	0	0	0	0
Refurbishment (\$/header house)	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000
Subtotal Refurbishment Cost per Wellfield	\$0	\$1,084,490	\$1,697,130	\$1.315.200	\$2,522,323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Wellfield Refurbishment Cost	\$6,619,143													
VI. Monitoring and Sampling Costs														
A. Pre-Restoration Monitoring														
1. Excursion Monitoring (M, MO and MU wells, twice per month)									1					
# of Wells	49	50	52	-90	83	42	51	53	69	90	0	70	0	44
Total # samples	0	1200	7488	0	3984	9072	9792	13992	16560	21600	0	0	0	10560
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30.00	\$30.00	\$30,00	\$30,00	\$30.00	\$30,00	\$30.00	\$30.00	\$30,00	\$30,00	\$30,00	\$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	\$0.00	\$36,000.00	\$224,640.00	\$0.00	\$119,520.00	\$272.160.00	\$293,760.00	\$419,760.00	\$496,800.00	\$648,000.00	\$0.00	\$0.00	\$0.00	\$316,800.00
Total Pre-Restoration Monitoring Costs	\$2,827,440				AT THE COLOR OF SALES		CONTRACTOR OF STREET	and the second se	- 10 C					

[Mine Unit	Mine Unit							Mine Unit 10-			
Ground Water Restoration -Welffield	Mine Unit 1	Mine Unit 2	3/Ext	4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
B. Restoration Monitoring														
1 Sampling Prior to Start-up (MP Wells)														
# of Wells	U	31	27	10	22	10	13	11	14	20	0	15	0	7
Modified Guideline 8 (\$/sample)	\$249.00	\$249,00	\$249,00	\$249.00	\$249.00	\$249,00	\$249,00	\$249,00	\$249,00	\$249,00	\$249.00	\$249,00	\$249,00	\$249.00
2. Restoration Progress Monitoring (MP Wells, every	2 months)													
# of Wells	19	31	27	30	22	10	13	11	14	20	0	15	0	7
Total # sanules	114	1116	648	1080	924	180	390	198	588	960	0	540	0	252
Restoration Progress Parameters (\$/sample)	\$50,00	\$50,00	\$50.00	\$50,00	\$50.00	\$50.00	\$50.00	\$50,00	\$50,00	\$50,00	\$50,00	\$50,00	\$50,00	\$50,00
3. Excursion Monitoring (M, MO and MU wells, eve	ry 2 months)													
# of Weils	68	50	52	90	83	42	51	53	69	50	0	70	0	44
Total # samples	408	1800	1248	3240	3486	756	1530	954	2898	4320	U	2520	0	1584
UCL Parameters (\$/sample)	\$30.00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00
Subtotal Restoration Monitoring Costs per Mine Unit	\$17,940.00	\$117,519,00	\$76,563,00	\$153,690,00	\$156,258.00	\$34.170.00	\$68,637.00	\$41,259.00	\$119,826.00	\$182,580.00	\$0,00	\$106,335.00	\$0,00	\$61,863,00
Total Restoration Monitoring Costs	\$1,136,640,00													
C. Stability Monutoring														
1 Beginning of stability (MP wells)														
# of Wells	19	31	27	.30	22	10	11	11	II II	20	0	15	U	7
Modified Guideline 8 (\$/sample)	\$249.00	\$249,00	\$249.00	\$249.00	\$249,00	\$249.00	\$249,00	\$249.00	\$249.00	\$249,00	\$249.00	\$249.00	\$249.00	\$249,00
2 Quarterly sampling (MP wells)														
# of Wells	19	31	27	30	22	10	13	11	14	20	0	15	0	7
Total # samples	76	124	108.	120	88	40	52	-++	56	80	0	60	0	28
Modified Guideline 8 (\$/sample)	\$249.00	\$249.00	\$249.00	\$249.00	\$249.00	\$249.00	\$249,00	\$249.00	\$249.00	\$249,00	\$249.00	\$249.00	\$249.00	\$249,00
3 Monitor Well Sampling (M welts, every 2 months)														···· ···
# of Wells	25	24	24	57	39	18	28	28	43	49	0	40	0	20
Total # samples	150	144	144	342	234	108	168	168	258	294	0	240	0	120
UCL Parameters (\$/sample)	\$30.00	\$30,00	\$30,00	\$30,00	\$30,00	\$30.00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30,00	\$30.00
Subtotal Stability Monitoring Costs per Mine Unit	\$28,155.00	\$42,915,00	\$37,935,00	\$47,610,00	\$34,410,00	\$15,690,00	\$21,225,00	\$18,735,00	\$25,170,00	\$33,720,00	\$0.00	\$25,875,00	\$0.00	\$12,315,00
Total Stability Monitoring Costs	\$343,755.00													
D. Other Laboratory Costs														
Radon Sampling	\$26,400.00	\$105,600,00	\$145,200.00	\$92,400.00	\$132,000,00	\$171,600.00	\$184,800,00	\$198,000,00	\$237,600,00	\$250,800,00	\$0,00	\$92,400,00	\$0,00	\$224,400,00
Subtotal Monitoring and Sampling Costs per Mine Unit	\$72,495.00	\$302,034,00	\$484,338.00	\$293,700 00	\$442,188,00	\$493,620.00	\$568,422.00	\$677,754,00	\$879,396.00	\$1,115,100,00	\$0,00	\$224,610.00	\$0,00	\$615,378,00
Total Monitoring and Sampling Costs	\$6,169,035													
VII. Header House Heating Costs	6	5					- <u> </u>				0			
Number of Header Houses per Unit(s) Pre-Restoration and Restoration Period (vrs)	6	5	10		13	10	9		13		0	<u> </u>	-	,
			10	6		12			17	18	0	Ú		16
Electrical Heating Costs (\$/yr)	\$3,222 \$19,331	\$3,222 \$112,766	\$3,222	\$3,222	\$3.222	\$3,222	\$3,222	\$3,222	\$3.222	\$3.222	\$3.222	\$3.222	\$3.222	\$3.222
Subtoral Header House Heating Cost per Wellfield		\$112,766	\$322,189	\$212,645	\$376,962	\$386,627	\$376,962	\$315,746	\$712,039	\$521,947	\$0	\$212,645	\$0	\$360,852
Total Header House Heating Costs	\$3,930,712													
TOTAL RESTORATION COST PER WELLFIELD	\$208,072	\$3,168,082	\$4,852,018	\$3,381,918	\$5,684,158	\$1,630,203	\$2,343,377	\$2,240,601	\$3,909,163	\$4.698.158	\$0	\$2.699.750	\$0	\$2,671,135
TOTAL WELLFIELD RESTORATION COSTS	\$37,487,235													
						1								

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Gr	ound Water Restoration - Site Wide									
1.	Building Utility Costs	СРР	Main Office	Maint Shop	Pumphouse	Sat SR-1	Sat SR-2	Sat Reynolds		
	Electricity Unit Cost (\$/yr)	\$27,976	\$23,538	\$5,293	\$9,279	\$37,985	\$37,985	\$37,985		
	Propane (\$/yr)	\$187	\$0	\$0	\$0	\$0	\$36,423	\$36,423		
	Natural Gas (\$/yr)	\$78,354	\$0	\$0	\$0	\$8,639	\$0	\$0		
	Number of Years	18	18	18	18	16	18	6	·•	
	Subtotal Utility Cost per Building	\$1,917,307	\$423,691	\$95,282	\$167,028	\$745,992	\$1,339,353	\$446,451		
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7									
	*Yrs for Satellite Reynolds assumes end of restoration for MU-2									
	Total Building Utility Costs	\$5,135,104								
H.	Deep Disposal Well Utility Costs	SR-1	SR-2	REY-I	REY-2	REY-3	SRHUP #6	SRHUP #7	SRHUP #8	SRHUP #10
	Electricity Unit Cost (\$/yr)	\$4,223	\$4,223	\$4,223	\$4,223	\$4,223	\$4,223	\$4,223	\$4,223	\$4,223
	Propane (\$/yr)	\$0	\$0		\$Ú	\$0	\$0	\$0	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Number of Years	18	18	18	18	18	18	18	18	18
	Subtotal Utility Cost per Building	\$76,019	\$76,019	\$76,019	\$76,019	\$76,019	\$76,019	\$76,019	\$76,019	\$76,019
	Total Deep Disposal Well Utility Costs	\$684,170								
ш	Booster Pump Operation Costs									
	Restoration Period (vrs)	18								
	Booster Pump Operating Cost (\$/yr)	\$155,962.62								
•	Total Booster Pump Operating Cost	\$2,807,327								
		\$2,007,527			· ······					
IV.	Infrastructure, Equipment Maintenance,									
	Replacement and Repair Costs									
	Annual Maintenance Cost	\$92,320		*Based on plann	ed expenditures (2013)				
	Restoration Period (yrs)	18								
	Total Cost	\$1,661,760								
V.	Deep Disposal Well MIT Costs									
•.	Five-year MIT Costs for Disposal Wells	\$31,625.00								
	Number of DDWs	9				· · · · ·				
	Number of MITs per DDW	3								
	Total DDW MIT Cost	\$853,875								
VI.	Capital Costs									
	*Estimates based on planned expenditures (2013)									
	Deep Disposal Well SRHUP #7	\$3,400,000								
	Deep Disposal Well REY #2	\$3,400,000								
	Deep Disposal Well REY #3	\$3,400,000			<u></u>					
	RO Installation (Satellite SR-2)	\$600,000								
	RO Installation (Reynolds Satellite)	\$600,000								
	Satellite SR-2 to Mine Unit 15 Pipeline	\$266,376								
-	SR-HUP Connecting Pipeline	\$209,872								

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Total Capital Costs	\$11,876,248		
VII Vehicle Operation Costs			
Number of Pickup Trucks (Gas)	10		
Truck Cost (\$/hr)	\$22.14		
Average Operating Time (hrs/yr)	1000		
Restoration and Stability Period (yrs)	19		
Total Vehicle Operation Cost	\$4,207,170		
VII Labor Costs			
Assumptions:			
Number of Environmental Managers/RSOs	0.5	*Management positions split between Smith Ranch and Highland	
	\$64.40		
Number of Restoration Managers	0.5	*Management positions split between Smith Ranch and Highland	
\$/hr	\$56.00		
Number of Environmental Techs/HPTs	2		
\$/hr	\$35.00		
Number of Operators/Laborers	7		
\$/hr	\$36.40		
Number of Maintenance Technicians	2		
\$/hr	\$32.20		
Hrs/yr	2080		
Restoration and Stability Period (yrs)	19		
Total Labor Cost	\$17,760,288		
TOTAL SITE-WIDE RESTORATION COSTS	\$44,985,942		

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			Mine Unit	Mine Unit		Mine Unit					Mine Unit 10-		ľ		
Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	3/Ext	4/4A	Mine Unit 15	15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	Other
I. Well Abandonment (Wellfields)												· · · · · · · · · · · · · · · · · · ·	-		
A. Sealing Costs						Inc in MU-15									
Total # of Wells per Wellfield	308	479	652	750	1505	0	510			682		728		431	21
Production, Injection and Perimeter Well Average Depth (ft) Well Abandonment (Sealing) Costs (\$/ft)	500 \$2,75	850 \$2.75	750 \$2.75	850 \$2,75	450	500 \$2.75		864	950	9(K)	(x)v	800		825	950
Subtotal Scaling Costs per Wellfield	\$423,5(8)	\$1.119.663	\$1,344.750	\$1,753,125		\$2.75		\$2 75 \$779.328		\$2.75 \$1,687,950	\$2 75 \$148,5(if)	\$2.75 \$1.601.600		\$2.75 \$977,8311	\$2.75 \$54 863
B Casing Removal and Diposal Costs	342.1.5.07	31.119.001	31,344.739	\$1,73,14	\$1,8024,18	30	\$1.332.373	\$779.528	\$1,945,7187	\$1,087,950	3148,587	\$1.001.000	20	\$977,831	\$54 803
Total # of Wells per Wellfield (In Service)	308	479	652	750	1505	0	510	328	744	682	60	728		431	21
# of Previously Abandoned Wells Pending Release	124	100	70	88		0		11	89	4	0	19			0
Total # of Wells for Casing Removal and Disposal	432	579	722	838	1626	U	638	339	833	686	60	747		431	21
Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33		\$33	\$33	\$33	\$33			\$33	\$33
Subtotal Casing Removal and Diposal Costs per Wellfield	\$14,256	\$19,107	\$23,826	\$27,654	\$53,658	\$U		\$11,187	\$27,489	\$22,638	\$1,980			\$14,223	\$693
Subtotal Well Abandonment Costs per Wellfield	\$437,756	\$1,138,770	\$1,368,576	\$1,780,779	\$1,916,096	\$ 0	\$1,353,429	\$790,515	\$1,971,189	\$1,710,588	\$150,480	\$1.626,251	\$0	\$992,054	\$55,550
Total Well Abandonment Costs	\$15,292,038														
II. Removal of Contaminated Soil Around Wells															
# of Production and Injection Wells	255	427	587	660	1372	0	451	274	658	590	U	640	0	385	
Removal of Contaminuted Soil Around Wells (\$/well) Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$\$5.40	\$85.46	\$85.46	\$85.46		\$85.46	\$85.46	
Total Contaminated Soil Removal/Disposal Costs	\$21,791 \$538,293	\$36,490	\$50,163	\$56,402	\$117.247	\$0	\$38,541	\$23,415	\$56,231	\$50,420	\$0	\$54,692	\$0	\$32,901	
III. Delineation Hole Abandonment	\$336,293			-											
A Drift Hole Plug and Abandonment											·				
# of Drill Holes Pending Bond Release															
2007478	<u> </u>										· ·				
2009-10	638										· ·				
2010-11	821										· <u> </u>				
2011-12	0														
2012-13	594														
# of Projected Dnll Holes													-		
2013-14	900														
Total # of Dnll Holes	3064														
% of Drill Holes Requiring Bentomte Top 100 ft	20%														
Total Footage Requiring Abandonment (ft) Hole Abandonment (\$/t)	\$3.30												·		
Subtotal Plug and Abandonment Costs	\$202,224					·									<u> </u>
B Incidental Costs	32172,22.4														
Total # of Drill Holes	3064								-						
Site Location (\$/hole)	\$11														
Capping (\$/hole)	\$11														
Small Sne Grading and Seeding (\$/site)	\$ 55														
Subtotal Incidental Costs	\$235,928														
Total Delineation Hole Abandonment	\$438,152		l												
IV. Waste Disposal Well Abandonment	SR-1	SR-2	SRHUP #6	SRHUP #7	SRHUP #8	SRHUP #10	REY-1	REY-2	REY-3						
A. Well Sealing									_						
Total Depth of Well	10,097	9,996	9,600	9,400	9,700	9,550	9,950	9,950	9,950						
Scaling Cost Per Foot	\$13.62	\$13.62	\$13.62	\$13 62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62						
*Scaling costs per foot includes surface reclamation costs Subtotal Plugging Costs per Well	\$137,521	\$136,146	FL20 7/2	\$134,838	\$132,114	\$130,071		6136.510	0126.51						
B. Pump Dismantling and Decontamination	\$137,321		\$130,752	\$1,54,838	\$132.114	\$1.0,071	\$135,519	\$135,519	\$135,519						
Number of Pumps			,			-	n	2							
Pump Dismontling and Disposal Cost	\$2,788	\$2,788	\$2,788	\$2,788	\$2,788	\$2,788	\$2,788	\$2,788	\$2,788						
Subtotal Dismantling and Decon Costs per Well	\$5.576 06	\$5.576.06	\$5 576 06	\$5,576.06	\$5,576.06	\$5,576.06	\$5.576.06	\$5.576.06	\$5,576.06				[
C. Tubing String Disposal (NRC-Licensed Facility)		_													
Length of Tubing String (ft)	8,271	8.257	8,910	9,100	8,910	8.800	8.217	8,217	8,217						
Diameter of Tubing String (inches)	2.875	2 875	2 875	2 875	2 875	2 875	2 875	2.875	2 ×75						
Volume of Tubing String (ft ³)	. 193	192	207	212	207	205	194	191	191						
Transportation and Disposal Unit Cost (\$/fi3)	\$7 32	\$7.32	\$7.32	\$7 32	\$7 32	\$7 32	\$7.32	\$7.32	\$7.32						
Subtotal Tubing String Disposal Costs per Well Total Waste Disposal Well Abandonment Costs	\$1,410 \$1,271,295	\$1,408	\$1,519	\$1.552	\$1,519	\$1,501	\$1,401	\$1,401	\$1,401			~			
													<u> </u>		
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	\$17,539,778		_												

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10- Ext		Mine Unit 21	Mine Unit
			SIEX	1/1/3	Mille Olik 13	1.5/4	white Olin K	K-North	Mille Olin 7	white Chit 16	EM	wine Ont 27	Mine Ont 21	wine Unit
I. Wellfield Piping Number of Header Houses per Wellfield			10											
Length of Piping per Header House (ft)	13800	13800	10	11		10		13800	13	13800	13800	13800		
*Based on 46 wells per header house (iii) *Based on 46 wells per header house with 300 ft pipeline per well	13600	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	1380
Approximate Total Length of Piping (ft)	82800	69000	138000	151800	179400	138000	124200	96600	179400	124200	0	151800	0	9660
A. Removal and Loading	82800	0,000	138000	131800	1/9400	136000	124200	50000	179400	124200	U	151800	<u>/</u> 0	9660
Wellfield Piping Removal Unit Cost (\$/ft of pipe)	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.86	\$1.80	5 \$1.86	\$1.8
Subtotal Wellfield Piping Removal and Loading Costs	\$153,731		\$256,218	\$281,840	\$333,083	\$256,218		\$179,352		\$230,596				
B. Transport and Disposal Costs (NRC-Licensed Facility)	2.2.1				••••••				0.001000	\$230,370		\$201,040		9179,5
Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2		2	
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.01	0.011	0.0
Chipped Volume per Wellfield (ft [*])	888	740	1480	1628	1923	1480		1036	1923	1332	0	1628		
Volume for Disposal Assuming 10% Void Space (ft ³)	977	814	1628	1790	2116	1628	1465	1139	2116	1465	0	1790	0	
Transportation and Disposal Unit Cost (\$/(t3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5 77	\$5 7
Subtotal Wellfield Piping Transport and Disposal Costs	\$5,637	\$4,697	\$9,393	\$10,328	\$12,209	\$9,393	\$8,453	\$6,572	\$12,209	\$8,453	\$0	\$10,328	\$ \$0	\$6,57
Subtotal Wellfield Piping Costs per Wellfield	\$159,368	\$132,806	\$265,611	\$292,168	\$345,292	\$265,611	\$239,049	\$185,924	\$345,292	\$239,049	\$0	\$292,168	\$ \$0	\$185,92
Total Wellfield Piping Costs	\$2,948,262													
II. Well Pumps and Tubing														
*Pump and tubing removal costs included under ground water restoration labor														
*60% of production/injection wells contain pumps and/or tubing														
A. Pump and Tubing Transportation and Disposal						Inc in MU-15				and a second second	State of the second section of the second		Contraction in the	
Number of Production Wells	95	164	257	259	477	0	171	99	260	210	0	220	0 0	13
Number of Injection Wells	160			401	896	0		175	398					
Number of Monitor Wells	52			90		0		53						
1 Pump Volume		50	02	50	150	0				21	00	0.	, v	
Number of Production Wells with Pumps	57	98	154	155	286	0	103	59	156	126	0	132	0	8
Pump Volume (ft3)	0.43		0.43	0.43	0.43	0.43		0.43	0.43	0.43	0.43			
Pump Volume per Wellfield (ft ³)	24.7	42.5	66.7	67.1	123.9	0.0		25.6	67.6					
2. Tubing Volume														
Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	839	925	875	875	775	575	80
*Based on average well depth minus 25 ft													and the second s	
Tubing Length per Wellfield (ft)	145,825	393,525	470,525	618,750	638,350	0	471,750	274,353	681.725	595.875	52,500	561,875	0	343,20
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2	
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1 25	1 25	1 25	1 25	1 25	1 2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0 011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.01
Chipped Volume per Wellfield (ft ³)	1563	4219	5045	6634	6844	0		2941	7309	6389	563			
Volume of Pump and Tubing (ft ³)	1588	4261	5112	6701	6968	0		2967	7377	6444	563			
Volume for Disposal Assuming Void Space (ft ³)	1746	4688	5623	7371	7665	0	5613	3263	8114	7088	619	6689	0	408
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77		\$5.7
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	\$10,074	\$27,049	\$32,443	\$42,529	\$44,225	\$0	\$32,386	\$18,827	\$46,816	\$40,896	\$3,571	\$38,594	\$0	\$23,58
Fotal Pump and Tubing Disposal Costs	\$360,991													
III. Buried Trunkline (Includes S for fiber optic cable removal)														
Assumptions														
Length of Trunkline Trench (ft)	5075	7600	4790	12565	19085	7500	0	17198	11565	9050	0	20000	0	540
A. Removal and Loading				and I										
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3 71	\$3.71	\$3.71	\$3.7
Subtotal Trunkline Removal and Loading Costs	\$18,845	\$28,221	\$17,787	\$46,658	\$70,868	\$27,850	\$0	\$63,861	\$42,944	\$33,605	\$0	\$74,266	\$0	
B. Transport and Disposal Costs (NRC-Licensed Facility)														
1. 3* HDPE Trunkline											1			
Piping Length (ft)	5075	7600	4790	12565	0	0	U	0	0	0	U	0	0	
Chipped Volume per foot of pipe (ft3/ft)	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.0233	0.023
Chipped Volume (ft ³)	118	177	112	293	0	0	0	0	0	0	0	0	0	an said and
2. 6" HDPE Trunkline														
Piping Length (ft)	2410	10000	4820	7320	28170	2320	2288	3466	4800	6850	0	6500		
Chipped Volume per foot of pipe (ft3/ft)	0.0834	0.0834	0.0834	0.0834	0 0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834		0.083
Chipped Volume (ft [*])	201	834	402	610	2349	193	191	289	400	571	0	542	0	
3. 8" HDPE Trunkline														
Piping Length (ft)	4100	0	1100	4240	4000	6266	1104	948	15980	5000	0	0		
Chipped Volume per foot of pipe (ft3/ft)	0.1413	0 1413	0 1413	0 1413	0.1413	0 1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413		0.14
Chipped Volume (ft ³)	579	0	155	599	565	885	156	134	2258	707	0	0	0	50
4. 10" HDPE Trunkline					and the second second									
Piping Length (ft)	0	5200	3660	4680	6000	1400	0	1028	2800	2000	0	800		200
Chipped Volume per foot of pipe (ft3/ft)	0.2196	0 2196	0 2196	0 2196	0 2196	0 2196	0.2196	0.2196	0.2196	0.2196	0.2196	0 2196		0.219
Chipped Volume (ft ³)	0	1142	804	1028	1317	307	0	226	615	439	0	176	0	43

			Mine Unit	Mine Unit		Mine Unit					Mine Unit 10-		· · · · · · · · · · · · · · · · · · ·	
Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 1	Mine Unit 2	3/Ext	4/4A	Mine Unit 15	15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
5. 12" HDPE Trunkline														
Piping Length (ft)	1460	0	0	5270	0	1080	0	2866	4110	0	0	2000	0	(
Chipped Volume per foot of pipe (ft3/ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0 3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0,308
Chipped Volume (ft ³)	451	0	0	1627	0	333	0	885	1269	0	0	618	0	and the second se
6. 14" HDPE Trunkline														
Piping Length (ft)	740	0	0	0	0	6200	0	0	1830	0	0	0	0	4000
Chipped Volume per foot of pipe (ft3/ft)	0 3723	0.3723	0.3723	0.3723	0 3723	0 3723	0.3723	0.3723	0 3723	0 3723	0.3723	0.3723	0.3723	
Chipped Volume (ft ³)	276	0	0	0	0	2308	0	0	681	0	0	0	0	
7. 16" HDPE Trunkline											and the state			
Piping Length (ft)	1440	0	0	3620	0	0	2010	2210	1420	0	0	0	0	1
Chipped Volume per foot of pipe (ft3/ft)	0.4864	0.4864	0 4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	and the second
Chipped Volume (ft ³)	700	0	0	1761	0	0.1001	978	1075	691	0.1001	0.1001	0.1001	0,4004	
8 18" HDPE Trunkline		9		1701	0	0	278	1075	091	Ű	0	0	0	
Piping Length (ft)	0	0	0	0	24170	0	2086	18600	7640	6550	0	25000	0	<u> </u>
Chipped Volume per foot of pipe (fi3/ft)	0.6155	0.6155	0.6155	0.6155		0.6155	0.6155	0.6155	0.6155	0.6155	0.6155		0.6155	
Chipped Volume (ft ⁵)	0,0155		0 0155			00133	1284	11448	4702	4032	0.0133		0.0133	
Total Chipped Volume (ft ³)	2325	2153	1472	5918		4028	2608	14057	10617	5748	0		0	
Volume for Disposal Assuming Void Space (R ⁴)	2558	2368	1472	6509		4028	2869	15463	11678	6323	0		0	
	\$5.77	\$5.77	\$5.77		\$5.77	\$5.77		\$5.77	\$5.77					
Transportation and Disposal Unit Cost (\$/ft3)	\$14,759	\$13,663	\$9,347	\$5.77 \$37,555	\$121,275		\$5.77			\$5 77	\$5.77	\$5.77	\$5.77	
Subtotal Trunkline Transport and Disposal Costs	\$14,759 \$33,604		\$9,347		\$121,275	\$25,566 \$53,416	\$16,553	\$89,218 \$153,079	\$67,379	\$36,482	\$0		\$0	
Trunkline Decommissioning Costs per Wellfield		\$41,884	\$27,134	\$84,213	\$192,143	\$53,416	\$16,553	\$153,079	\$110,323	\$70,087	\$()	\$180,401	\$0	\$35,878
Total Trunkline Decommissioning Costs	\$998,715				Contraction and the second		in the second second	- management and	aca. so engla	iner a certain	n	Land the second second	and the second second	L
IV. Wellhead Cover Removal														-
Number of Wells	308	479	652	750	1505	0	510	328	744	682	60	728	0	431
Well Head Removal, Decontamination, and Disposal Cost	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	
Subtotal Wellhead Removal Costs	\$3,610	\$5,614	\$7.642	\$8,791	\$17,640	\$0	\$5,978	\$3,844	\$8,720	\$7,994	\$703	\$8,533	\$0	
Total Well Head Removal and Disposal Costs	\$84,121													
														and the second second
V. Header Houses (Includes Booster Stations)											1			
Booster Houses	0	0	1	1	6	0	3	0	1	0	0	0	0	C
Total Quantity	6	5	11	12	19	10	12	7	14	9	0	11	0	7
Average Header House Volume (ft ³)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
A Removal														
Total Volume (ft ³)	9600	8000	17600	19200	30400	16000	19200	11200	22400	14400	0	17600	0	11200
Demolition Cost	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0,306	\$0.306	\$0.306	\$0.306	\$0.306
Subtotal Building Demolition Costs	\$2,936	\$2,446	\$5,382	\$5,871	\$9,296	\$4,893	\$5,871	\$3,425	\$6,850	\$4,404	\$0	\$5,382	\$0	\$3,425
B. Survey and Decontamination					1999 (1997) (199				100 C 100 C 100 C					
Cost per Header House	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621
Subtotal Survey and Decontamination Costs	\$3,728	\$3,107	\$6,835	\$7,457	\$11,806	\$6,214	\$7,457	\$4,350	\$8,699	\$5,592	\$0	\$6.835	\$0	\$4,350
C. Disposal						4								1
Total Volume for Disposal - Incl. 33% Factor (cy)	117	98	215	235	372	196	235	137	274	176	0	215	0	137
Volume for Disposal Assuming Void Space (cy)	129	108	237	258		215	258	151	301	194	0	237	0	151
Disposal Cost, Landfill (cv)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal Off-Site County Landfill Disposal Costs	\$5,440	\$4,554	\$9,994	\$10,879	\$17,246	\$9.066	\$10,879	\$6.367	\$12,692	\$8,180	\$0	\$9,994	\$0	
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2 5'D)	500	500	500	500	500	500	500	500	500	500	500	500	500	
11e (2) Disposal Cost (ft3)	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal 11e.(2) Disposal Costs	\$17,414	\$14,512	\$31,926	\$34,829	\$55,146	\$29,024	\$34,829	\$20,317	\$40,634	\$26,122	\$0.80	\$31,926	\$0	
Subtotal Header House Removal and Disposal Costs per Wellfield	\$29,518	\$24.619	\$54,137	\$59,036	\$93,494	\$49,197	\$59,036	\$34,459	\$68,875	\$44,298	\$0	\$54,137	\$0	
Total Header House Removal and Disposal Costs	\$605,265	##7,017	w77,137	\$57,030	@703979	191	\$57,000	a.+.+.)/	900,873	\$77,296	30	as 4 ,137	30	9.14,437
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	\$236,174	\$231,972	\$386,967	\$486,737	\$692,794	\$368,224	\$353,002	\$396,133	\$580,026	\$402,324	\$4,274	\$573,833	\$0	\$284,894
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	\$4,997,354													(

Mine Unit 1	Mine Unit 2	Mine Unit 3/Ext	Mine Unit 4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10	Mine Unit 10- Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
50.9	1013	8.00	125.1	1173	11.5	83.3	65.4	88.7	99.5	0.0	81.0	0.0	68
20.1	1001.0	22.0	140.1	111.2		0.0.2	00.4	00.7	12.0	0.0	01.0	0.0	
\$548	\$548	\$548	\$5.18	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$54
		\$54,075	000,024		\$=33777	\$45,010	\$33,020	940,307	\$54,504	arci		40	\$11,41
Secontra			Ultra Ultra an de velig										
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6.2		11.2	92.4	19.8	13.6	9.6	2.8	12.7	16.2	0	1.56.00	0	16
												\$1,416	
	\$14,305	\$15,863	\$130,867	\$28,043	\$19,262	\$13,597	\$3,966	\$17,987	\$22,944	\$0	\$22,944	\$0	\$22,94
\$252,671													
1	1	2	2	1	1	2	2	1	1		1		
0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.6
500	500	500	500	500	500	500	500	500	500	500	500	5()()	50
													\$1,33
\$1,331	\$1,331	\$2,661	\$2,661	\$1,331	\$1,331	\$1,996	\$1,996	\$1.331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,33
		2,162	2,162										1,08
\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.1
\$1,284	\$1,284	\$2,568	\$2,568	\$1,284	\$1,284	\$1.926	\$1,926	\$1.284	\$1.284	\$1,284	\$1.284	\$1,284	\$1,28
												100 March 100 Ma	
\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$54
\$548	\$548	\$1,095	\$1,095	\$548	\$548	\$822	\$822	\$548	\$548	\$548	\$548	\$548	\$54
\$3,163	\$3,163	\$6,324	\$6,324	\$3,163	\$3,163	\$4,744	\$4,744	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,16
\$53,766													
\$39,809	\$74,579	\$76,866	\$205,715	\$95,437	\$46,818	\$63,951	\$44,538	\$69,717	\$80,611	\$3,163	\$70,468	\$3,163	\$63,57
\$869,581			C 10402 C 10447										
												0	8,67
	\$4,076	\$2,601	\$8,817	\$2,490	\$0	\$8,191	\$8,191	\$7,704	\$7,601	\$0	\$6,946	\$0	\$3,05
\$65,474										1997 - 200 -			
SR-1	SR-7	REV											
JR-1	SR-2	NL I										the second second second	
2 70	5.00	5.00								A.	· · · · · · · · · · · · · · · · · · ·		
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			<u>.</u>										
\$3.593	\$0,053	\$0,055											
1255	8075	0077											
\$6,176	\$11,438	\$11,438											
\$548	\$548	\$548											
									and the second		10 · · · · · · · · · · · · · · · · · · ·	1	
\$1.479	\$2,738	\$2,738											
\$11.248	\$2,738 \$20,829	\$2,738 \$20,829											
	50.9 \$548 \$27,865 \$5563,144 6 \$8,781 \$252,671 1 0.67 \$00 \$1.331 \$1.331 1.081 \$1.331 1.081 \$1.331 1.081 \$1.331 \$1.331 1.081 \$1.331 \$1.331 1.081 \$1.333 \$1.335 \$1.335 \$1.335 \$1.422	50.9 104.3 \$548 \$548 \$27,865 \$57,111 \$563,144 - 6.2 10.1 \$1,416 \$1,416 \$8,781 \$14,305 \$252,671 - 1 1 0.67 0.67 \$000 \$000 \$1,331 \$1,331 \$1,331 \$1,331 \$1,331 \$1,331 \$1,331 \$1,331 \$1,284 \$1,484 \$548 \$548 \$53,163 \$3,163 \$53,766 - 16,487 \$1,580 \$5,803 \$4,076 \$55,803 \$4,076 \$56,474 \$8R-1 \$8,270 \$000 1 1 1000 \$000 \$1,330,59 \$1,330,59 \$3,593 \$6,653 4356 \$8067 \$1,42 \$1,42 \$1,42 \$1,438	Mine Unit 1 Mine Unit 2 3/Ext 50.9 104.3 99.8 \$5.48 \$5.48 \$5.48 \$27.865 \$57.111 \$54.679 \$563.144	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{tabular}{ c c c c c c c } \hline Mine Unit 1 & Mine Unit 2 & J/Ext & 4/4A & Mine Unit 15 \\ \hline 0 & 104.3 & 99.8 & 125.1 & 117.3 \\ \hline 55.48 & $548 & $548 & $51416 & $1,418 & $1,081 & $2,162 & $2,162 & $1,42 & 1	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Mine Unit 1 Mine Unit 2 3/Ext 4/4A Mine Unit 15 15.4 Mine Unit K 50/9 104.3 99.8 125.1 117.3 44.5 83.3 \$548 \$548 \$548 \$548 \$548 \$548 \$548 \$548 \$27,865 \$57,111 \$54,679 \$68,524 \$64,231 \$24,393 \$45,610 \$563,144	Mine Unit 1 Mine Unit 2 JEA JEA Mine Unit 15 ISA Mine Unit K K-North 509 1013 998 125 1173 345 833 654 519 1013 998 1251 1173 445 833 654 548 5548 5548 5548 5548 5548 5548 5548 527,865 557,111 554,679 566,524 564,231 524,393 545,610 \$35,828 54416 51,416 51,416 51,416 \$1,413 \$1,433 \$1,313 \$1,313 \$1,313	Mine Unit 1 Nine Unit 2 37.5xt 4/4.A Mine Unit 15 15.A Mine Unit K K-North Mine Unit 9 50 0 1043 99.8 1251 117.3 444.5 83.3 654 885.7 5548 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.937 \$513.9	Mine Unit 1 Mine Unit 2 JEX J4A Mine Unit 15 15A Mine Unit X K-North Mine Unit 9 Mine Unit 10 500 1013 998 1251 1173 44.5 853 654 887 995 5548 5549 5549 5549 5549 5549 5549 5549 5549 5549 5549 5549 5549 5548	Nine Uar 1Nine Uar 2JExJExJMaNine Uar 15ISANine Uar 14Nine Uar 10Ext30010139981251117344.58336.5488.770.055435548554855485548554855485548554855485548527.8657.11546.70569.52564.23524.30545.60535.88554855485548556.1470.11546.7059.6251.41651.4169.062.812.76.676.1111.129.9410.1811.6651.41651.41651.41651.41651.41651.41658.247514.0051.40651.41651.41651.41651.41651.41651.41651.41651.41658.24710.7010.67 <td< td=""><td>Numethation Numethation Numethation</td><td>Immer Internal Immer I</td></td<>	Numethation	Immer Internal Immer I

Equipment Removal and Loading	CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2	Satellite Reynolds
I. Removal and Loading Costs									
A. Tankage									
Number of Tanks	14	51	0	14	15	3	3	10	1
Volume of Tank Construction Material (ft ³)	900	1340	300	560	260	164	164	397	39
Tank Removal Cost	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.1
Subtotal Tankage Removal and Loading Costs	\$129,709	\$193,122	\$43,236	\$80,708	\$37,471	\$23,636	\$23,636	\$57,144	\$57,21
B. PVC/Steel Pipe									10.972
PVC Pipe Footage	4800	5000	0	6000	1500	0	0	4000	400
Average PVC Pipe Diameter (inches)	3	3	3	3	3	3	0	3	
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.02
Volume of Shredded PVC Pipe (ft ³)	112	116	0	140	35	0	0	93	(
Steel Pipe Footage	1100	0	0	0	0	80	0	0	1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
Average Steel Pipe Diameter (inches)	6	0	0	0	0	8	0	0	
Volume (ft ³)	216	0	0	0	0	30	0	0	
Pipe Removal Cost	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93	\$8,93	\$8.93	\$8.93	\$8.9
Subtotal PVC/Steel Pipe Removal and Loading Costs	\$52,682	\$44,646	\$0	\$53,575	\$13,394	\$714	\$0	\$35,717	\$35,71
C. Pumps									
Number of Pumps	22	43	0	16	12	2	0	13	
Average Volume (ft ³ /pump)	4.93	4.93	0	4.93	4.93	4.93	4.93	4,93	4.9
Volume of Pumps (ft ³)	108	212	0	79	59	10	0	64	
Pump Removal Cost	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$10
Subtotal Pump Removal and Loading Costs	\$11,678.69	\$22,924.83	\$0.00	\$8,542.74	\$6,380.02	\$1,081.36	\$0.00	\$6,920.70	\$6,920.7
D. Drver				1-1-1-1					
Dryer Volume (ft ³)	0	0	1,000	0	0	0	0	0	
Dryer Removal Costs	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.7
Subtotal Dryer Dismantling and Loading Cost	\$0	\$0	\$14,709	\$0	\$0	\$0	\$0	\$0	5
E. RO Units									
Number of RO Units (500 gpm)									
Current	0	1	0	1	0	0	0	0.25	
Planned	0	0	0	0	0	0	0	1	
Number of Degasser Units									
Current	0	0	0	1	0	0	0	0	
Planned	0	1	0	0	0	0	0	1	inter an inter an
RO/Degasser Average Volume (ft3/Unit)	250	250	250	250	250	250	250	250	25
RO and Degasser Removal Cost	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.0
Subtotal RO Unit Removal and Loading Costs	\$0.00	\$2,512.43	\$0.00	\$2,512.43	\$0.00	\$0.00	\$0.00	\$2,826.49	\$2,512.4
Subtotal Equipment Removal and Loading Costs per Facility	\$194,069	\$263,205	\$57,945	\$145,338	\$57,245	\$25,431	\$23,636	\$102,608	\$102,36
otal Equipment Removal and Loading Costs	\$971,843								
I. Transportation and Disposal Costs (NRC-Licensed Facility)									
A. Tankage									
Volume of Tank Construction Material (ft ³)	900	1340	300	560	260	164	164	397	39
Volume for Disposal Assuming Void Space (ft ³)	990	1474	330	616	286	180	180	436	43
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.3
Subtotal Tankage Transportation and Disposal Costs	\$7,250	\$10,795	\$2,417	\$4,511	\$2,095	\$1,318	\$1,318	\$3,193	\$3,20
B. PVC / Steel Pipe			,	,	,555				

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n - An Ar anna an annan ann annan ann annan ann ann ann ann an a	CPP	Central	Dryer	Satellite				Satellite	Satellite
Equipment Removal and Loading	IX Plant	Plant	Building	SR-1	Pilot ISL	Pumphouse	Bone Yard	SR-2	Reynolds
Volume of Shredded PVC Pipe (ft ³)	111.8	116.4	0.0	139.7	34.9	0.0	0.0	93.1	93.1
Volume for Disposal Assuming Void Space (ft ³)	123	128	0	154	38	0	0	102	102
Volume of Steel Pipe (ft ³)	216	0	0	0	0	30	0	0	C
Volume for Disposal Assuming Void Space (ft ³)	238	0	0	0	0	33	0	0	(
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5,77
Subtotal PVC Pipe Transportation and Disposal Costs	\$2,083	\$739	\$0	\$889	\$219	\$190	\$0	\$589	\$589
C. Pumps									
Volume of Pumps (ft ³)	108	212	0	79	59	10	0	64	64
Volume for Disposal Assuming Void Space (ft ³)	119	233	0	87	65	11	0	70	70
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal Pump Transportation and Disposal Costs	\$871	\$1,706	\$0	\$637	\$476	\$81	\$0	\$513	\$513
D. Dryer									
Dryer Volume (ft ³)	0	0	1000	0	0	0	0	0	C
Volume for Disposal Assuming Dryer Remains Intact (ft ³)	0	0	1000	0	0	0	0	0	C
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Total Dryer Transportation and Disposal Costs	\$0	\$0	\$7,323	\$0	\$0	\$0	\$0	\$0	\$0
E. RO/Degasser Units	i ili aaaaaaa a		2	. The second in the second second					
Volume of RO Units (ft ³)	0	500	0	500	0	0	0	562.5	500
Volume for Disposal Assuming Volume Reduction (ft ³)	0	550	0	550	0	0	0	618.75	550
Transportation and Disposal Unit Costs	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal RO Unit Transportation and Disposal Costs	\$0	\$4,028	\$0	\$4,028	\$0	\$0	\$0	\$4,531	\$4,028
Subtotal Equipment Transportation and Disposal Costs per Facility	\$10,204	\$17,268	\$9,740	\$10,065	\$2,790	\$1,589	\$1,318	\$8,826	\$8,330
Total Equipment Transportation and Disposal Costs	\$70,130								
III. Health and Safety Costs									
Radiation Safety Equipment Accounted for on GW REST	P		te serie de la competencia de						
Total Health and Safety Costs									
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY	\$204,273	\$280,473	\$67,685	\$155,403	\$60,035	\$27,020	\$24,954	\$111,434	\$110,696
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	\$1,041,973								

	CPP IX Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings	DDW SRHUP #10 Buildings
Building Demolition and Disposal													15x30	20x24
I. Decontamination Costs										·····		-		1
A Wall Decontamination														
Area to be Decontaminated (fl ²)	10,810	15,900	9,6081	0	1,152	570	4,826	12,000	0	n	0	0	720	704
HCI Acid Wash, including labor (\$/ft2)	\$0.94	\$0.94	\$0.94	\$0,94	\$0.94	\$0.94	\$0,94	\$0.94	\$0.94	\$0.94				
Subtotal Wall Decontamination Costs	\$10 [99	\$15,002	\$9,058	\$ (1	\$1,087	\$543	\$4,553	\$11.322	\$()	\$ 0	\$0	\$0	\$679	\$664
B. Concrete Floor Decontamination Area to be Decontaminated (1 ²)	11,550	16,500	3,500		1,678	8,39	7,028	17,477					450	
HCI Acid Wash, including Libor (\$/ft2)	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0,53	7.028 \$0.53	\$0,53	0 \$0,53	() \$0,53			450 \$0.53	480 \$0.53
Subtotal Concrete Floor Decontamination Costs	\$6.066	\$8,665	\$1,838	30 55 \$0;	\$881	\$441	\$3.691	\$9,178	50.55 S0	<u>\$0.55</u>			\$0.53	
C. Deep Well Injection Custs	40,000	20,005	\$1,020		4001		33,071	\$7,170	, .c.			1.10	0050	
Total kgals for Injection (1 gal used per ft2)	22.36	32.4	13.1	0	2 83	1415	11.854	29 477	0	0	0	0	1.17	1.184
Deep Well Injection Unit Cost (\$Agals)	\$1.06	\$1.06	\$1.06	\$1.06	\$1 OG	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06
Subtotal Deep Well Injection Costs	\$24	\$34	\$14	\$0	\$3	\$I	\$13	\$31	\$0	\$0	\$0	\$0	\$1	\$1
Subtotal Decontamination Costs per Building	\$16,289	\$23,701	\$10,910	\$ 0	\$1,971	\$985	\$8.257	\$20 531	\$0	\$0	\$0	\$0	\$916	\$917
Fotal Decontamination Costs	\$113,517													
II. Demolition Costs													• • •	
A Building														
Height of Building (ft)	30	35	35	15	to	10	25	18	10	0	0	- u	8	10
Volume of Building (f) ³)	346,500	577,5(4)	122,500	120 000	16,780	8,390	175,700	314,586	8.320	0	0	0	36(0)	4800
Demolition Cost	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31		\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	\$0.31	
Subtotal Building Demolition Costs	\$105,960	\$176,600	\$37,401	\$36.696	\$5,131	\$2,566	\$53,729	\$96,200	\$2,544	\$4)	\$0	\$0	\$1,101	\$1.468
B. Concrete Floor														
Area of Concrete Floor (lt ²)	11.550	16,500	3,5(8)	8,000	1,578	839	7.028	17 477	218	400	375	400	450	
Demolition Cost	\$5.84 \$67.464	\$5.84 \$96.377	\$5 84	\$5 84	\$5.84 \$9.801	\$5 84	\$5.84	\$5.84	\$5 84	\$5.84	\$5.84	\$5 84	\$5.84	
Subtotal Concrete Floor Demolition Costs C. Concrete Footing	\$67,464	\$96,377	\$20,444	\$46.728	\$9,801	\$4,901	\$11.051	\$102,083	\$4,860	\$2,336	\$2,190	\$2,336	\$2.628	\$2,804
Length of Concrete Footing (ft)	430	514	237	358	164	116		529	115	80	77	80	85	88
Demolition Cost	\$21.76	\$21.76	\$21.76	\$21.76	\$21 76	\$21.76	\$21.76	\$21.76	\$21 76	\$21.76	\$21.76		\$21.76	
Subtotal Concrete Footing Demolition Costs	\$9,353	\$11,179	\$5,149	\$7,784	\$3,565	\$2,521	\$7,296	\$11,506	\$2,510	\$1,741	\$1,685	\$1,741	\$1,846	\$1,907
Subtotal Demolition Costs per Building	\$182.777	\$284,156	\$63,054	\$91,208	\$18,497	\$9,988	\$102,076	\$2(19,789	\$9,914	\$4.077	\$3,875		\$5.575	\$6,179
Fotal Demolition Costs	\$1,921,408													<u>+_</u>
III. Disposal Costs														
A Building														
Volume of Buildang (cv)	12833	21389	4537	4444	621	311	6507	11651	308	0	0	0	133	178
Off-site County Facility														
Percentage (%)	[00]	100	LCO	100	100	100	[00	100	100	100	1(8)	100	100	1(H)
Total Volume for Disposal - Incl. 33% Factor (cy)														
Volume for Disposal (cubic yards)	4235	7058	1497	1467	205	103	2147	3845	102	0			44	
Disposal Unit Cost (\$/ey]	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42 17	\$42 17	\$42.17	\$42.17			\$42 17	
Sublotal county facility off-Site Disposal Costs	\$178,576	\$297,626	\$63,133	\$61.844	\$8,64N	\$4,324	\$90,551	\$162,128	\$4,288	\$0	<u>\$0</u>	\$0	\$1,855	\$2,474
B Concrete Floor Area of Concrete Floor (f ²)	11.550	16 600	3,500	8,000	1.476	839	7.034	17 (77		400	175	4(0)	17/1	480
Area of Concrete Floor (II ⁺) Average Thickness of Concrete Floor (ft)	0.75	16,500	0.75	0.75	1,678	4 75	7,028	17,477	832	401	375	400	450	480
Volume of Concrete Floor (11)	8062.3	12375	2625	6000	1258.5	629 25	5271	13107.75	624	3(8)	281.25	300	337.5	360
Volume of Concrete Floor (cy)	321	458	97	222	47	23	195	485	23	(#), []	10			
1. Off-site County disposal								100					•	
Percentage (%)	75	75	75	100	100	1 CHJ	100	75	100	100	100		75	75
Volume for Disposal (cy)	241.	344	73	222	47	23	195	364	23	11	10		9	10
Disposal Unit Cost (\$/cv)	\$42.17	\$42.17	\$42 17	\$42.17	\$42.17	\$42 J7	\$42.17	\$42 17	\$-12 17	\$42.17	\$42.17		\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs	\$10,146	\$14,495	\$3,075	\$9.370	\$1,965	\$983	\$8,232	\$15,353	\$475	\$469	\$439	\$ 464	\$395	\$422
2 NRC-Licensed Facility														
Percentage (%)	25	25	25	0	0	0	0	25	0.	0	0	0	25	
Volume for Disposal (II') Transportation and Disposal Unit Cost (\$/fi')	2166 \$5.80	3094 \$5.80	656 \$5 80	0 \$5.80	0 \$5 80	0 \$5.80	0 \$5 80	3277 \$5 80	0 \$5.80	0 \$5 80	0 \$5 80	0 \$5 X0	84 \$5,80	90 \$5.80
Subtotal NRC-Licensed Facility Disposal Costs	\$12,571	\$17.959	\$5.80	\$5 80 \$0	\$5 80 \$0	<u> </u>	\$5 80 \$0	\$19,022	\$5 80 \$0	\$5 80 \$0	\$5 80	\$5 ×0 \$0	<u>\$5.80</u> \$490	\$5 80
Subtotal Concrete Floor Disposal Costs	\$12,571	\$32,454	\$6,884	\$9 370	\$0 \$1.965	\$983	\$8,232	\$34,375	\$975	\$0 \$469	\$0 \$439	\$469	\$190	\$522 \$944
C. Concrete Fosting	/1/	4,4,2,0	20,064	37 376	COP, 16	3783	20,232	د/د.+دي	±7/3	3409		P4034	1083	3744
Length of Concrete Footing (ft)	430	514	237	358	164	116	335	529	115	80	77	80	85	88

							CPP IX Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings	DDW SRHUP #10 Buildings
Buildi	ng De	emoli	tion and	Disposal	1				Panang				chop bunding					01110	15x30	20x24
		A۱e	rage Wid	th of Concret	e Footing (ft)		1	1	I	I	1	1	1	1	1			I	l	1
		Vol	une of C	oncrete F <u>ooti</u>	ng (ft*)		1720		947	1431	655			2115					339	
I		Vol	ume of C	oncrete Footi	ng (cy)		64		35	53	24			78				12	13	
⊢				it Cost (\$/cv)			\$42.17		\$42.17	\$42.17	\$42.17			\$42.17		\$42.17		\$42.17	\$42.17	
				te Fonting Di			\$2 685 \$203.978	\$3,210 \$333,290	\$1,478	\$2.235 \$73.449	\$1,024	\$724 \$6,031		\$3,303	\$721	\$500	\$484	\$5(H) \$969	\$530	\$547
	uptor.	at Dis	posar C	sts per Build	ng T		\$1,965,732	\$333,290	\$71,495	\$73.449	\$11,637	\$0,031	\$100,878	\$199,806	\$5,984	7404	\$923	\$909	\$3.270	\$3.965
			sal Cost	•			\$1,703,752													
<u>IV. H</u>	ealth	<u>h and</u>	Safety C	Costs	Accounted for	on GW REST														
SUBTO	DTAL	LBU	LDING	DEMOLITIC	N AND DISPO	SAL COSTS	\$403.044	\$641,147	\$145,459	\$164.657	\$32,105	\$17,004	\$211.211	\$430,120	\$15,898	\$5,046	\$4,798	\$5 046	\$9.761	\$11,061
TOTA	LBL	ILD	ING DE	MOLITION	AND DISPOS	AL COSTS	\$4,000,657													-
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	DDW REY-1 Buildings	DDW WellHead Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Revnolds	Construction Shop	CPP Lab Addition	DDW SRHUP #7 Buildings	DDW SRHU #8 Buildings
Building Demolition and Disposal	20x24	9 ca 858	160X120		160X120	160X120	50X80	25X40	20524	20x24
Decontamination Costs										
A. Wall Decontamination										·
Area to be Decontaminated (ft ²)	704	0	U	3100	U	0	0	1300	704	70
HCI Acid Wash, including Jabou (\$/ft2)	\$0.94	\$0,94	\$0.94	\$0,94	\$0.94	\$0.94	\$0,94	\$0.94	\$0.94	\$0.9
Subtotal Wall Decontamination Costs	\$664	\$0	SO	\$2,925	\$0	\$0	\$0	\$1,227		
B Concrete Floor Decontamination										
Area to be Decontaminated (ft ²)	392	0	19200	2750	19200	0	υ	10(8)	-180	48
HCLAcid Wash, including labor (\$/ft2)	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.5
Subtotal Concrete Floor Decontamination Costs	\$206	\$0	\$10,083	\$1,444	\$10,083	SO	\$0	\$525	\$252	\$25
C Deep Well Injection Costs										
Fotal kgals for Injection (1 gal used per ft2)	1 096	0	19.2	5.85	19.2	0		2.3	L.184	
Deep Well Injection Unit Cost (\$Agals)	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	
Subtotal Deep Well Injection Costs	\$1	\$0	\$20	\$6	\$20	\$0	\$0	\$2	\$1	
Subtotal Decontanunation Costs per Building	\$871	\$0	\$10,103	\$4,375	\$10,103	\$0	\$0	\$1,754	\$917	\$91
Total Decontamination Costs										
I. Demolition Costs		1			·					1
A Building										
Height of Building (11)	10	10	24	20	24	24	20	25	10	1
Volume of Building (ft ³)	3920	5760	460,800	55,000	460,800	460,800	80,000	25,000	4800	480
Demolition Cost	\$0.31	\$0.31	\$0.31	\$0,31	\$0.31	\$0.31	\$0.31	\$0,31	\$0.31	\$0.3
Subtotal Building Demolition Costs	\$1,199	\$1,761	\$140,913	\$16.819	\$140,913	\$140,913	\$24,464	\$7,645	\$1,468	\$1,46
B Concrete Floor										
Area of Concrete Floor (ft ²)	392	448	19,200	2,750	19,200	19,200	4 000	1.(630)	480	
Demolition Cost	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5 84	\$5 84	\$5.84	\$5.84	\$5.8
Subtotal Concrete Floor Demolition Costs	\$2.290	\$2,617	\$112.147	\$16.063	\$112,147	\$112,147	\$23,364	\$5.841	\$2,804	\$2,80
C Concrete Footing										
Length of Concrete Footing (ft)	79	85	554	210	554	554	253	126	88	
Denolition Cost	\$21.76	\$21.76	\$21.76	\$21.76	\$21 76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.7
Subtotal Concrete Footing Demolition Costs	\$1,723	\$1,842	\$12,060	\$4,564	\$12,060	\$12,060	\$5,504	\$2,752	\$1,907	\$1,90
Subtotal Demolition Costs per Building	\$5,212	\$6,220	\$265,120	\$37,446	\$265,120	\$265,120	\$53,332	\$16,238	\$6,179	\$6,17
otal Demolition Costs										
II. Disposal Costs										
A Building										
Volume of Building (cy)	145	213	17067	2037	17067	17067	2963	926	178	17
Off-site County Facility										
Percentage (%)	100	[(8)]	100	Iuo	[LH)	100	100	100	100	10
Total Volume for Disposal - Incl. 33% Factor (ey)										
Volume for Disposal (cubic yards)	48	70	5632	672	5632	5632	978	306	59	
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42 17	\$42.17	\$42.17	\$42.17	\$42.17	
Subtotal county facility off-Site Disposal Costs	\$2,020	\$2,969	\$237,483	\$28,345	\$237,483	\$237,483	\$41,230	\$12,884	\$2,474	\$2.47
B. Concrete Floor										
Area of Concrete Floor (ff ²)	392	448	19,200	2.750	19,200		4,000	I, (RX)	480	48
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0,75	0,75	
Volume of Concrete Floor (113)	294	336]44(8)	2062.5	14400	14400	3000	750	360	
Volume of Concrete Floor (cy)	11	12	533	76	533	533	111	28	13	I
1 Uff-site County disposal										
Percentage (%)	75	100	75	75	75	75	100	90	75	
Volume for Disposal (cy)	×	12	400	57	400	400	111	25	10	1
Disposal Unit Cost (\$/ey) Subtotal county facility off-Site Disposal Costs	\$42.17 \$344	\$42 17 \$525	\$42 17 \$16,867	\$42.17 \$2,416	\$42.17 \$16,867	\$42.17 \$16,867	\$42.17 \$4.685	\$42.17 \$1,054	\$42.17 \$422	\$42.1 \$42
2. NRC-Licensed Facility		\$525	\$10,867	<u> </u>	\$10,867	\$16,867	34,085	\$1,054	3411	543
	25	0	25	25	25	- 25	0	10	25	2
Volume for Disposal (1) ³		0	3600	25 516	3600	25 3600	0	75		
Transportation and Disposal Unit Cost (\$/	\$5.80	\$5 80	\$5 80	\$5.80	\$5.80	\$5.80	\$5.80	\$5,80	\$5 80	
Subtotal NRC-Licensed Facility Disposal Costs	\$427	50	\$20,897	\$2,993	\$20,897	\$20,897	\$5.80	\$435	\$522	\$52
Subtotal Concrete Floor Disposal Costs	\$771	\$525	\$37,764	\$5,409	\$20,897	\$37,764	\$4.685	\$1,489	\$944	
C Concrete Footing			\$37,704	33,4114	531,1134	337,794	\$4.063	31,467	p744	
Length of Concrete Footing (ft)	79	85	554	210	554	554	253	126	88	1
Average Depth of Concrete Footing (ft)	4					4		4	3 1	

1								DDW	a . m.		a . w.					
							DDW REY-1 Buildings	WellHead Buildings	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition	DDW SRHUP #7 Buildings	#8 Buildings
uilding				Disposal			20x24	9 ca 8x8	160X120		160X120	160X120	50X80	25X40	20x24	20x24
					e Footing (tt)		1	1	I	1	1	1	1	1	1	
_				nerete Footin			317	339	2217	839	2217	2217	1012	506	351	35
				terete Footir			12	13	82	31	82	82	37		13	
-		Dispos	<u>ii Unit</u>	Cost (\$/ev)			\$42 17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	
_	Sub	btotal C	mercle	Footing Di-	sposal Costs		\$495	\$529	\$3,462	\$1.310	\$3,462	\$3,462	\$1,580	\$790	\$547	\$54
Sub	total	Dispos	al Cos	s per Buildi	ing		\$3.286	\$4,023	\$278,709	\$35,064	\$278,709	\$278,709	\$47,495	\$15,163	\$3,965	\$3.96
Tota	alD	isposal	Costs													
V. Hea	ulth :	and Sal	etv Co	sts	Accounted for	on GW REST										
	1 1		T													
UBTOT	AL	BUILD	ING D	EMOLITIO	N AND DISPO:	SAL COSTS	\$9,369	\$10,243	\$553,932	\$76.885	\$553,932	\$543,829	\$100.827	\$33,155	\$11,061	\$11,06
OTAL	BUI	ILÐING	; DEM	OLITION	AND DISPOSA	AL COSTS										
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scellaneous Reclamation										
CPP/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation										
Concrete Pad= 0.3 acres										
Total Area = 10.57 acres		2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		10000 C 1000	1.000	20	the second second		
A. Concrete Pad										
Area of Concrete Pad (ft ²)	13068									
Demolition Cost	\$5.84									
Average Thickness of Concrete Floor (ft)	0.50					and the state design as				
Volume of Concrete Floor (ft ³)	6,534									
Volume of Concrete Floor (cy)	242									
Concrete Disposal On Site (\$/cy)	\$9.08								and the second	
Subtotal Concrete Pad Demolition and Disposal Costs	\$78,526						1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	10		
B. Gravel Road Base Removal									······	
Average haul distance (ft)	1000									
Gravel Road Base Area (acres)	8.0								11	
Average Road Base Depth (ft)	0.5									
Volume of Road Base (cv)	6453									
Moving Materials	\$1.42									
Subtotal Gravel Road Base Removal Costs	\$9,150							Seattle and Section and Section 2.1		
C. Ripping Overburden with Dozer	\$9,150					and the second second	and the second second			
C. Ripping Overburden with Dozel Overburden Surface Area (acres)	10.6									
Ripping Cost (per acre)	\$1,330,59									
Subtotal Ripping Overburden Costs	\$1,330.39									
D Topsoil Application	\$14,004									
Area of surface disturbance (ft ²)	460426									
Average thickness of topsoil (ft)	400420									
Average unckness of topsol (n) Average haul distance (ft)	2000									
	2(RA)									
Surface grade (%)	0.000									
Volume of Topsoil (cy)	8,526									
Moving Materials	\$1.42							The second s	et	
Subtotal Topsoil Application Costs	\$12,090									
E. Discing/Seeding										
Surface Area (acres)	10.57									
Discing/Seeding Unit Cost (\$/acre)	\$548								energia de la composición de las	
Subtotal Discing/Seeding Costs	\$5,789									
Total CPP/Office/Yard Area Reclamation	\$119,619									
Access Road Reclamation (includes culverts)									Access SRHUP 10	
Access Road Reclamation (includes culverts)	CPP Access Rd.	CPP to SAT 3	Access to WF	MU-15 Access	SR2 Access	Reynolds Access	Access SRHUP 7	Access SRHUP 8	from MU-4	
A Assumptions		761			F.4.1				in the second	
Surface grade	1%	5%	5%	0%	5%		0%	0%	0%	
Length of Road (ft)	5,173	15,827	15,557	10,560	8,500	2,500	1,500	11,250	2,500	
Width of Road (ft)	40	30	14	30	30		20	20	20	
Area of road (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1	
B. Ripping and Hauling Asphalt										
Assumptions										
Average Haul Distance (feet)	500	500	500	500	500	500	500	500	500	
		0.5	0.5	0.5	0.5		0.5	0.5	0.5	
Average Thickness of Asphalt (ft)	0.5					\$969.18	\$969.18	\$969.18	\$969.18	
Average Thickness of Asphalt (ft) Ripping Cost (per acre)	\$969.18	\$969 18	\$969.18	\$969.18	\$969.18				926	
Average Thickness of Asphalt (ft) Rupping Cost (per acre) Volume of Asphalt (cy)	\$969.18	\$969 18 8793	4033	5867	4722	1389	556	4167		
Average Thickness of Asphalt (ft) Ripping Cost (per arc;) Volume of Asphalt (cy) Moving Materials	\$969.18 3832 \$1.84	\$969.18 8793 \$1.84	4033 \$1.84	5867 \$1.84	4722 \$1.84	1389 \$1.84	556 \$1.84	\$1 84	\$1.84	
Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy)	\$969.18	\$969 18 8793	4033	5867	4722	1389	556			
Average Thickness of Asphalt (ft) Ripping Cost (oper arc;) Volume of Asphalt (cy) Moving Materials	\$969.18 3832 \$1.84	\$969.18 8793 \$1.84	4033 \$1.84	5867 \$1.84	4722 \$1.84	1389 \$1.84	556 \$1.84	\$1 84	\$1.84	
Average Thickness of Asphalt (ft) Ripping Cost (per arc) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt	\$969.18 3832 \$1.84	\$969.18 8793 \$1.84	4033 \$1.84	5867 \$1.84	4722 \$1.84	1389 \$1.84	556 \$1.84	\$1 84	\$1.84	
Average Thickness of Asphalt (ft) Ripping Cost (per are;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal	\$969.18 3832 \$1.84 \$11,647	\$969.18 8793 \$1.84 \$26,726	4033 \$1.84 \$12,259	5867 \$1.84 \$17,832	4722 \$1.84 \$14,353	1389 \$1.84 \$4,222 1000	556 \$1.84 \$1,689	\$1 84 \$12,665	\$1.84 \$2,814	
Average Thickness of Asphalt (ft) Ripping Cost (per acre;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal Average haul distance (ft) Gravel Road Base Node (htt)	\$969.18 3832 \$1.84 \$11,647 1000	\$969.18 8793 \$1.84 \$26,726 1000	4033 \$1.84 \$12,259 1000	5867 \$1.84 \$17,832 1000	4722 \$1.84 \$14,353 1000	1389 \$1.84 \$4,222 1000 20	556 \$1.84 \$1,689 [000	\$1 84 \$12,665 1000 20	\$1.84 \$2,814 1000 20	
Average Thickness of Asphalt (ft) Ripping Cost (per are;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B Gravet Road Base Kemoval Average haul distance (ft) Gravet Road Base Widh (ft) Gravet Road Base Area (acres)	\$969.18 3332 \$1.84 \$11,647 1000 30	\$969.18 8793 \$1.84 \$26,726 1000 20	4033 \$1.84 \$12,259 1000 10	5867 \$1 84 \$17,832 1000 20	4722 \$1.84 \$14,353 1000 20	1389 \$1.84 \$4,222 1000	556 \$1.84 \$1,689 [000 20	\$1.84 \$12,665 1000	\$1.84 \$2,814 1000	
Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Kemoval Average haul distance (ft) Gravel Road Base Width (ft) Gravel Road Base Depth (ft)	\$969.18 3832 \$1.84 \$11,647 1000 300 3.56 0.75	\$969.18 8793 \$1.84 \$26,726 1000 20 7.27 0.5	4033 \$1.84 \$12,259 1000 10 3.57 0.5	5867 \$1 84 \$17,832 1000 20 4.85 0.5	4722 \$1.84 \$14,353 1000 20 3.90 0.5	1389 \$184 \$4,222 1000 20 1.15 0	556 \$1.84 \$1,689 1000 20 0.69 0	\$1 84 \$12,665 1000 20 5.17 0	\$1.84 \$2,814 1000 20 1.15 0	
Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal Average haul distance (ft) Gravel Road Base Vath (ft) Gravel Road Base Area (acres) Average Road Base Depth (ft) Volume of Road Base (cy)	\$969.18 3832 \$1.84 \$11,647 1000 30 3.56 0.75 4.311	\$96918 8793 \$184 \$26,726 1000 20 727 0.5 5862	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2881	5867 \$1 84 \$17,832 1000 20 4.85 0.5 3911	4722 \$1.84 \$14,353 1000 20 3.900 0.5 3148	1389 \$1.84 \$4,222 1000 20 1.15 0 0 0	556 \$1.84 \$1,689 1000 20 0.069 0 0 0 0	\$1 84 \$12,665 1000 20 5.17 0 0 0	\$1.84 \$2,814 1000 20 1.15 0 0	
Average Thickness of Asphalt (ft) Ripping Cost (per are;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravet Road Base Kemoval Average haul distance (ft) Gravet Road Base Widh (ft) Gravet Road Base Vera (acres) Average Road Base Depth (ft) Volume of Road Base (cy) Moving Materials	\$969.18 3832 \$1.84 \$11,647 1000 30 3.56 0.75 4.311 \$1.42	\$96918 8793 \$184 \$26,726 1000 20 727 0.5 5862 \$142	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2881 \$1.42	5867 \$1.84 \$17,832 1000 20 4.85 0.5 3911 \$1.42	4722 \$1.84 \$14,353 1000 20 3.90 0.5 3.148 \$1.42	1389 \$1.84 \$4,222 1000 20 1.15 0 0 \$1.42	556 \$1.84 \$1,689 1000 20 0,69 0 0 \$1.42	\$1 84 \$12,665 1000 20 5.17 0 0 0 \$1.42	\$184 \$2,814 1000 20 1.15 0 0 \$1.42	
Average Thickness of Asphalt (ft) Ripping Cost (per acre;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal Average haul distance (ft) Gravel Road Base Vidth (ft) Gravel Road Base Area (acres) Average Road Base Vidth (ft) Volume of Road Base (cy) Moving Materials Subtotal Gravel Road Base (cy)	\$969.18 3832 \$1.84 \$11,647 1000 30 3.56 0.75 4.311	\$96918 8793 \$184 \$26,726 1000 20 727 0.5 5862	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2881	5867 \$1 84 \$17,832 1000 20 4.85 0.5 3911	4722 \$1.84 \$14,353 1000 20 3.900 0.5 3148	1389 \$1.84 \$4,222 1000 20 1.15 0 0 0	556 \$1.84 \$1,689 1000 20 0.069 0 0 0 0	\$1 84 \$12,665 1000 20 5.17 0 0 0	\$1.84 \$2,814 1000 20 1.15 0 0	
Average Thickness of Asphalt (ft) Ripping Cost (per acc) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Nemoval Average haul distance (ft) Gravel Road Base Valth (ft) Gravel Road Base Valth (ft) Of average Road Base Depth (ft) Volume of Road Base (cy) Moving Materials Subtotal Gravel Road Base Removal Costs C Ripping Overburden with Dozer	\$969.18 3832 \$1.84 \$11,647 1000 30 3.56 0.75 4.311 \$1.42 \$6,112	\$96918 8793 \$184 \$26,726 1000 20 7 27 0.5 5862 \$142 \$8,312	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2881 \$142 \$4,085	5867 \$1 84 \$17,832 1000 20 4.85 0.5 3911 \$1.42 \$5,546	4722 \$1.84 \$14,353 1000 20 3.90 0.5 3148 \$1,42 \$4,464	1389 \$1.84 \$4,222 1000 20 1.15 0 0 \$1.42 \$0	556 \$1.84 \$1,689 (000 20 0.69 0 0 \$1.42 \$0	\$1 84 \$12,665 1000 20 5.17 0 0 \$142 \$0	\$184 \$2,814 1000 20 1.15 0 0 \$1.42 \$0	
Average Thickness of Asphalt (ft) Ripping Cost (per acre;) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal Average haut distance (ft) Gravel Road Base Width (ft) Gravel Road Base Vera (acres) Average Road Base Depth (ft) Volume of Road Base (cy) Moving Materials Subtotal Gravel Road Base (cy) Moving Materials Subtotal Gravel Road Base Area (acres) C. Ripping Overburden with Dozet Overburden Surface Area (acres)	\$969.18 3832 \$1.84 \$11,647 1000 3.365 0.75 4.311 \$1.42 \$6,112 \$6,112 4.8	\$96918 8793 \$184 \$26,726 1000 727 0.5 5862 \$142 \$8,312 10.9	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2.2881 \$1.42 \$4,085 \$.0	5867 \$1 84 \$17,832 1000 20 4.85 0.5 3911 \$142 \$5,546 7.3	4722 \$1.84 \$14,353 1000 20 3.90 0.5 3.3148 \$1.42 \$4,464 5.9	1389 \$184 \$4,222 1000 20 1.15 0 0 \$1.42 \$0 1.7	556 \$184 \$1,689 (000) 20 0.69 0 0 \$142 \$0 0.7	\$1 84 \$12,665 1000 20 5.17 0 0 \$1.42 \$0 5.2	\$1.84 \$2.814 1600 20 1.15 0 \$1.42 \$0 \$0 \$1.42	
Average Thickness of Asphalt (ft) Ripping Cost (per arc) Volume of Asphalt (cy) Moving Materials Subtotal Ripping and Hauling Asphalt B. Gravel Road Base Removal Average haul distance (ft) Gravel Road Base Width (ft) Gravel Road Base Vidth (ft) Volume of Road Base Depth (ft) Volume of Road Base Depth (ft) Volume of Road Base (cy) Moving Materials Subtotal Gravel Road Base Removal Costs C. Ripping Overburden with Dozer	\$969.18 3832 \$1.84 \$11,647 1000 30 3.56 0.75 4.311 \$1.42 \$6,112	\$96918 8793 \$184 \$26,726 1000 20 7 27 0.5 5862 \$142 \$8,312	4033 \$1.84 \$12,259 1000 10 3.57 0.5 2881 \$142 \$4,085	5867 \$1 84 \$17,832 1000 20 4.85 0.5 3911 \$1.42 \$5,546	4722 \$1.84 \$14,353 1000 20 3.90 0.5 3148 \$1,42 \$4,464	1389 \$1.84 \$4,222 1000 20 1.15 0 0 \$1.42 \$0	556 \$1.84 \$1,689 (000 20 0.69 0 0 \$1.42 \$0	\$1 84 \$12,665 1000 20 5.17 0 0 \$142 \$0	\$184 \$2,814 1000 20 1.15 0 0 \$1.42 \$0	

Smith Ranch 2013-14 Surety Estimate_Rev1.xlsx

Miscellaneous Reclamation			-							
Average haul distance (ft)	1500	1500	1500	1500	1500	1500	1500	1500	1500	
Topsoil Surface Area (ft ²)	206920	474810	217798		255000	75000	30000		50000	
Depth of Topsoil (ft)	0.3058		0.3058		0.3058	0 3058	0.3058		0.3058	
Volume of Topsoil (cy)	2344		2467		2888	849	340		566	
Moving Materials	\$1.42		\$1.42		\$1.42	\$1.42	\$1.42		\$1.42	
Subtotal Topsoil Application Costs	\$3,323		\$3,498		\$4,095	\$1,204	\$482		\$803	
E. Discing/Seeding										
Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1	
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548		\$548	\$548	\$548		\$548	
Subtotal Discing/Seeding Costs	\$2,602	\$5,970	\$2,738	\$3,983	\$3,206	\$943	\$377	\$2,829	\$629	
Multiplier for Projected Additions	0	(1	1	0	0	0	0	0	0	
Subtotal Reclamation Costs per Access Road	\$30,005		\$58,467	\$42,126	\$33,907	\$8,660	\$3,464	\$25,980	\$5,773	
Total Access Road Reclamation Costs	\$271,519									
	Trunk Line #1	Trunk Line #2	Trunk Line #3	Trunk Line #4	Trunk Line	WF 4 to CPP -	Waste Transfer	Waste Transfer	Waste Transfer	SR to HUP DDW
III. Trunk Lines	(CPP to MU-4)	(CPP to SR-1)	(MU-15 to SR-1)	(O-Sand Pilot)	(SR-2 to CPP)	projected	SR2 to MU-15	SR2 to SRHUP 8	SR1 to SRHUP 7	Pipeline
		N	Included in MU 15		A	1.5.4.5.5.5				
			WF REC							
Length of Trench (ft)	7750	8500		5500	2500	10000	12000	10000	7000	970
A. Removal and Loading										
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.7
Subtotal Trunkline Removal and Loading Costs	\$28,778	\$31,563	\$0	\$20,423	\$9,283	\$37,133	\$44,560	\$37,133	\$25,993	\$36,019
B. Transport and Disposal Costs (NRC-Licensed Facility)									- 14	
1 2" HDPE Trunkline										
Piping Length (ft)	7750	8500	0	22000	0	0	0	0	0	(
Chipped Volume Reduction (It3/ft)	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.010
Chipped Volume (ft ³)	83	91	0	236	0	0	0	0	0	(
1. 4" HDPE Trunkline										
Piping Length (ft)	0	0	0	0	15000	10000	12000		7000	(
Chipped Volume Reduction (ft3/ft)	0,0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385		0.0385	0.038:
Chipped Volume (ft ⁴)	0	0	0	0	577	385	462	385	269	(
2 6" HDPE Trunkline										
Piping Length (ft)	7750	17000		0	0	0	0		0	9700
Chipped Volume Reduction (ft3/ft)	0.0834	0.0834		0.0834	0.0834	0.0834	0.0834	0.0834	0.0834	0.0834
Chipped Volume (ft ³)	646	1.418	0	0	0	0	0	0	0	809
3. 12" HDPE Trunkline										
Piping Length (ft)	0	6000	0	0	0	0	0		0	
Chipped Volume Reduction (ft3/ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.308
Chipped Volume (ft ³)	0	1,853	0	0	0	0	0	0	0	(
4 16" HDPE Trunkline	15500	11000	0	155(8)	15500		0	0		
Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864	0.4864		0.4864	0.4864
Chipped Volume (ft ³)	7,539	5,350		7,539	7,539	0.4604	0.4604		0.4004	0.400-
5. 18" HDPE Trunkline	1,337	5,500	U	1,339	1.3.59	v	0	0	0	
Piping Length (t)	0	0	i i i i i i i i i i i i i i i i i i i	0	2320	0	0	0	0	
Chipped Volume Reduction (ft3/ft)	0.6155	0 6155	0.6155	0.6155	0.6155	0.6155	0.6155		0.6155	0.615
Chipped Volume (fi ³)	0.0155	00155	0.0135	0.0155	1,428	0 01 0 0	0.0155	0.0100	00135	0.010.
Total Volume Chipped (ft [*])	8,268	8,712			9,544	385	462		269	809
Volume for Disposal Assuming Void Space (ft ³)	9,095	9,583	0	8,552	10,498	423	508		296	890
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5 77	\$5.77	\$5.77	\$5.77		\$5.77	\$5.77
Subtotal Transport and Disposal Costs	\$52,476	\$55,292			\$60,571	\$2,441	\$2,931		\$1,708	\$5,135
C. Discing/Seeding										-2111
Width of Pipeline Trench (ft)	4	4	4	4	4	5	5	5	5	
Area of Pipeline Trench (acres)	0.7	0.8	0.0	0.5	0.2	1.1	1.4	1.1	0.8	1,1
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548		\$548	\$548	\$548	\$548		\$548	\$548
Subtotal Discing/Seeding Costs	\$390	\$427	\$0	\$277	\$126	\$629	\$754		\$440	\$610
Subtotal Reclamation Costs per Pipeline	\$81,644	\$87,282	\$0	\$70,043	\$69,980	\$40,203	\$48,245	\$40,203	\$28,141	\$41,764
Total Pipeline Reclamation Costs	\$507,505									
IV. Settling Basin/Storage Ponds Reclamation	Storage Ponds	Settling Pond								Contract Contract
A. Soil Sampling and Monitoring	Storage Fonds	Setting Fond								
A. Soil sampling and Monitoring Number of Soil Samples	15	15								
\$/Sample	\$255	\$255								
Subtotal Soil Sampling and Monitoring Costs	\$3,825	\$3,825								
B. Liner/Subsoil Removal and Disposal	00,020	0.7,025	and equilibria the second state of a	1111 - 111 -						

	T		···				1	1
Miscellaneous Reclamation								
Thickness of clay liner (ft)	1	0.5		 				
Thickness of contaminated subsoil (ff)	1	0.5						
Width of Pond (ft)	200	252						
Length of Pond (ft)	100	432						
Depth of Pond (ft)	10	20						
Surface area of pond (ff ²)	20000	108864						
1 Removal and Loading								
Volume of Clay Liner (cv)	1481	4032						
Clay Liner Removal and Loading Unit Cost (\$/cv)	\$5.12	\$5.12						
Subtotal Liner Removal and Loading Costs	\$7,580	\$20.629						
2. Transportation and Disposal								
Volume of Clay Liner (ft [*])	1481	4032						
Volume of Geotextile Liner (ft [*])	52	0						
Volume of Geotextile Liner i 40% void (ft [*])	87	0						<u> </u>
Transportation and Disposal Unit Cost (\$/ft ⁺)	\$5.80	\$5,80						
Subtotal Liner Transportation and Disposal Costs	\$9,103	\$23,405		 1	1			<u> </u>
Subtotal Liner Removal and Disposal Costs	\$16.683	\$44,034		 -				
C. Grade and Contour	\$10,000	344,0,14		 1				· · · ·
C. Orade and Contour Volume of Embankment Material (CY)	7,407	80,640		 				
Average Grade (%)	7.407	80,040		 				······
Distance (II)	50	100						
Material Moving Unit Cost per WDEQ Guideline No 12, App E (\$/ev)				 -				
	\$0 176	\$0 297						
Sublotal Grade and Contour Costs	\$1,304	\$23,950		 -				
D Topsoil Application				 · · · · · · · · · · · · · · · · · · ·				
Area of surface disturbance (ft [*])	20000	105899	·	 - <u> </u>				
Average thickness of topsoil (ft)	ļ	1		 		·		
Average haul distance (ft)	1000	1(KA)						
Surface grade (%)	()%;	3%						
Volume of Topsoil (cv)	741	4,033		 				
Topsoil Unit Cost per WDEQ Guideline No 12, App C (\$/cy)	\$1,418	\$1418		 				
Subtotal Topsoil Application Costs	\$1,050	\$5,719						
E Discing/Seeding								
Area of surface disturbance (acres)	0.5	2.5						_
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548						
Subtotal Discing/Seeding Costs	\$274	\$1,369		 				
Subtotal Redamation Costs	\$23,136	\$78,897						
Total Settling Basin/Ponds Reclamation Costs	\$102,033							
Total Settling Basin/Ponds Rectamation Costs V. Potential Ground Water Mitigation for Casing Leak Investigation				 				
V. Potential Ground Water Mitigation for Casing Leak Investigation				 				l
A CLI Investigation Costs	\$933,577	Hased on planned	expenditures (June 2013)	 			-	
B Ground Water Pump and Treat Costs				 				
Subtotal Ground Water Pump and Treat Costs	SO			 				
C Well Abandonment (CLI Shallow Wells)				 				
# of Monitoring Wells (Current)	0							
Average Well Depth (it)	n							
# of Monitoring Wells (Planned)	8					1		
Average Well Depth (ů)	250							
Total Well Depth (ft)	2,000							
Well Abandonment (\$/it)	2.75							
Small Site Grading and Seeding (\$/stic)	\$55							
Remove and Dispose Casing (\$/well)	\$33			 1				
Concrete Pedestal Disposal (\$/cach)	\$110			 				
Subtotal Well Abandonment Costs	\$7,084		· · · · · · · · · · · · · · · · · · ·	 				
Total CLI Ground Water Mitigation Costs	\$940,661			 				
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TOTAL MISCELLANEOUS RECLAMATION COSTS	\$1,941,337							

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	Mine Unit-1	Mine Unit-2	Mine Unit- 3/Ext	Mine Unit- 4/4A	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit K-North	Mine Unit 9	Mine Unit 10	10-Extension	Mine Unit 27	Mine Unit 21	Mine Unit 7
Pore Volume Calculations														
Flare Factor	1.56	1.05	116	1.14	1.48	1.68	1.21	1.30	1.52	1.45	0	1.82	0	1.74
Wellfield Area (ft2)	1,108,034	2,271.426	2.174,453	2,725,270	2,554,278	970,206	1,813,644	1,424,902	1,931,533	2.167,666	0	1,764,110	0	1,490.217
Wellfield Area (acres)	25.44	52.14	49.92	62.56	58.64	22.27	41.64	32.71	44.34	49.76	0.00	40.50	0.00	34.21
Affected Ore Zone Area (ft2)	1,108,034	2.271.426	2.174,453	2,725,270	2.554,278	970,206	1,813,644	1,424,902	1,931,533	2,167,666	0	1,764,110	0	1.490.217
Avg. Completed Thickness	18.0	23.0	30.0	19.0	18,0	16.0	19.0	21.0	23.0	30.0	0.0	23.0	0.0	20.0
Porosity	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	31,113,595	54,854,938	75,670,964	59,029,348	68,045,966	26,079,137	41,695,676	38,899,825	67,526,394	94,293,471	0	73,845,645	0	51,859,552
Kgallons per Pore Volume	62.837	110,785	152,825	119,216	137.426	52,669	84,209	78,562	136,376	190,435	0	149,139	0	104,736
Restoration Schedule (Based on Annual Water Balance/So	chedule Update)					1 2 1 40 et 2000		an and the set of the						-
Pre-Restoration Period (vrs)	0	1	6	0	2	9	8	11	10	10	0	0	0	10
Restoration Period (vrs)	1	6	4	6	7	3	5	3	7	8	0	6	0	6
Stability Period (vrs)	1	1	1	1	1	1	1	1	1	1	0	1	0	1
Total # of Years	2	8	11	7	10	13	14	15	18	19	0	7	0	17
End of Restoration (vrs)	18				1		1	1	1	1	-			1
End of Stability (vrs)	19													1
Number of Header Houses per Wellfield														
Current	6	5	10	11	13	10	9	7	13	9	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	11	0	7
Total Estimated	6	5	10	11	13	10	9	7	13	9	0	11	0	7
Average Header House Volume (ft3)	1600	-	10		10						<u> </u>			
Number of Wells (In Service) per Wellfield														-
Production Wells (P)						Inc in MU-15	-							
Current	95	134	207	229	416	0	171	99	260	196	0	0	0	27
Planned	0	0	0	0	0	0	0	0	0	14	0	220	0	108
Total Estimated	95	134	207	229	416	0	171	99	260	210	0	220	0	135
Injection Wells (I)		101	207		110				200	=				1 100
Current	160	233	280	371	835	0	280	175	398	341	0	0	0	29
Planned	0	0	0	0	0	0	0	0	0	39	0	420	0	221
Total Estimated	160	233	280	371	835	0	280	175	398	380	0	420	0	250
Restoration Wells (R)	100	200	200	571	055	v	200	175	570	500	Ý	720		250
Current	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monitor Wells (M. MO, MU, etc.)	v	U	0	0	U	0	U	0	U	U.	0	U	Ų.	0
Current	52	50	54	90	130	0	59	53	79	91	0	85	0	44
Planned	0	0	8	0	0	0	0	0	0	0	60	0	0	0
Total Estimated	52	50	62	90	130	0	59	53	79	91	60	85	0	44
Other Wells (Pumping Wells, etc.)		50	02	90	130	0	39		19	91	00	6.5	0	44
Current	1	2	3	0	3	0	0	1	7	1	0	3	0	2
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0
						and the second se		0	7					
Total Estimated Wellfield Refurbishment (I or P)	1	2	3	0	3	0	0	1	/	1	0	3	0	2
Planned	0	60	100	60	121	0	0	0	0	0	0	0	0	0
			100									2	0	
Number of In Service Wells per Wellfield Total Number of Wells	308	479	652	750	1505	0	510	328	744	682	60	728	0	431
Well Completion Details Average Well Depth (ft)	500	850	750	850	450	500	950	864	950	900	900	800	600	825
Average Diameter of Casing (inches)	5	5	5	5	4.5	4.5	4.5	4.5	5	5	5	0	0	5
Wellfield Fencing														
Length of Fencing (ft)	16.487	11580	7388	25047	7074	0	23271	23271	21887	21595	0	19732	0	8674
	1 31 107				1	d	1	1						diama di second

Labor Costs		Rate (\$)	Net Benefits*	Units	Source
Environmental Manager/RSO		\$46.00	\$64.40	hour	MSEC**
Restoration Manager		\$40.00	\$56.00	hour	MSEC
Environmental Tech/HPT	······	\$25.00	\$35.00	hour	MSEC
Operator/Laborer		\$26.00	\$36.40	hour	MSEC
Maintenance Tech		\$23.00	\$32.20	hour	MSEC
*Includes additional 40% net benefits based on InfoMine USA cost data for			ines - Western U.S. (Tab	le 5)	
**Mountain States Employers Council, 2012 Survey, Mining Industry Con	npensation & Benefits				· · · · · · · · · · · · · · · · · · ·
Utility Costs	• · · · · ·	Rate (\$)	Profit & Overhead	Units	Source
Electrical Costs		\$0.0597	included	kWhr	Actual Costs-2013
Kilowatt to Horsepower		0.746	included	Kw/HP	N/A
Efficiency - Downhole Pumps		80%	included	Percent	N/A
Efficiency - Surface Pumps		90%	included	Percent	N/A
Natural Gas - CPP/Main Office Area		\$78,354.10	included	year	Actual Costs-2012
Natural Gas - Satellite SR-1		\$8,639.18	included	year	Actual Costs-2012
Propane - CPP/Main Office Area		\$186.90	included included	year	Actual Costs-2012
Propane - Satellite SR-2		\$36,423.19	Included	year	Actual Costs-2012
Chemical & Materials Costs		Rate (\$)	Profit & Overhead	Units	Source
Antiscalant for RO (Hypersperse)		\$3.9050	included	pound	Actual Costs-2013
Antiscalant for RO (ScaleTrol)	·	\$4.5177	included	pound	Actual Costs-2013
Sodium Tripolyphosphate		\$1.0893	included	pound	Actual Costs-2013
EDTA Tetrasodium Dihydrate		\$1.8774	included	pound	Actual Costs-2013
Sodium Sulfide		\$0.5520 \$0.1992	included	pound	Quote-2013
Hydrochloric AcidBarium Chloride	ł	\$0.7970	included included	pound pound	Actual Costs-2013 Actual Costs-2013
Iron Aggregate		\$0.5516	included	pound	Actual Costs-2013
Silica Sand	+ · · · · · · · · · · · · · · · · · · ·	\$0.1407	included	pound	Actual Costs-2013
Pea Gravel		\$0.0190	included	pound	Actual Costs-2013
Analytical Costs		Rate (\$)	Profit & Overhead	Units	Source*
Modified Guideline 8 Excursion Parameters (UCL)	·····	\$249.00 \$30.00	included included	analysis analysis	Quote: 2012-13 Fee Schedule-2013
Restoration Progress Parameters (UCL + U + Se)	+	\$50.00	included	analysis	Fee Schedule-2013
Irrigator Fluid		\$245.00	included	analysis	Actual Costs-2012
Irrigator Vegetation		\$270.00	included	analysis	Actual Costs-2012
Irrigator Soil		\$255.00	included	analysis	Actual Costs-2012
Irrigator Soil Water	<u>+</u>	\$150.00	included	analysis	Fee Schedule-2013
Other (Radon, Bioassay, etc.)		\$1.000.00	\$1,100.00	analysis	Cost Estimate
*All quotes, fee schedules and actual costs based on Energy Laboratories,	Inc., Casper, WY				· ·
Equipment Costs	<u> </u>	Rate (S)	Profit & Overhead*	Units	Source
Bandit 1290XP Trailer Mounted Brush Chipper		\$47.93	\$52.72	hour	Equipment Watch**
Bobcat S250 Skid Steer Loader		\$36.57	\$40.23	hour	Equipment Watch
Cat 320C L Trackhoe - 1.25 cu yd bucket	··· · · · · · · · · · · · · · · · · ·	\$100.03	\$110.03	hour	Equipment Watch
Cat 416E Backhoe		\$34.97	\$38.47	hour	Equipment Watch
Cat 924H Loader - 2.4 cu yd bucket		\$52.93	\$58.22	hour	Equipment Watch
Concrete Jaws Labounty - CP-60		\$18.51	\$20.36	hour	Equipment Watch
GEHL DL-8 Rough Terrain Lift Truck		\$56.44	\$62.08	hour	Equipment Watch
Manlift		\$47.54	\$52.29	hour	Equipment Watch
MIT Unit	<u> </u>	\$30.09	\$33.10	hour	Equipment Watch
Pick-up Truck 3/4 ton 4X4	<u> </u>	\$20.13	\$22.14	hour	Equipment Watch
Pulling Unit***	La 12 Section 12(1)	\$35.32	\$38.85	hour	Equipment Watch
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline N **Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)	0. 12, Section 12(0)				
***1 3/4 Ton 4x4 Truck with Hoist	<u> </u>				├
Quoted Costs	<u> </u>	Rate (\$)	Profit & Overhead	Units	Source
Deep Disposal Well - Plug & Abandonment Costs		\$13.62	included	foot	UIC Permit-2012
Deep Disposal Well - MIT Costs	<u> </u>	\$31,625	included	well	Quote-2013
Well Replacements (Restoration) Bellhole Refurbishment	 	\$14,763 \$5,530	included	well	Actual Costs-2013 Contract-2012
Header House Refurbishment	<u> </u>	\$32,000	included included	bellhole header house	Actual Costs-2012
	<u> </u>				
WDEQ/LQD Guideline No. 12 Costs	Appendix	Rate (\$)	Profit & Overhead*	Units	Source
Moving Materials: One-Way Distance 500 feet. 0% grade	Appendix C	\$1.080	\$1.188	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	\$1.289	\$1.418	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 2,000 feet, 0% grade	Appendix C	\$1.671	\$1.838	bcy	Guideline-10/2012 Guideline-10/2012
Moving Materials: One-Way Distance 50 feet, 0% grade Moving Materials: One-Way Distance 100 feet, 0% grade	Appendix E Appendix E	\$0.160	\$0.176	lcy	
Moving Materials: One-Way Distance 100 feet, 0% grade	Appendix E Appendix E	\$0.351	\$0.297 \$0.386	lcy lcy	Guideline-10/2012 Guideline-10/2012
Grading Operating Costs	Appendix E Appendix G	\$75.25	\$0.386	lcy acre	Guideline-10/2012 Guideline-10/2012
Fencing Removal	Appendix U Appendix H	\$0.32	\$0.35	foot	Guideline-10/2012
Ripping Operating Costs (Asphalt)	Appendix 1	\$881.07	\$969.18	acre	Guideline-10/2012

Ripping Operating Costs (Overburden)	Appendix []	\$1,209.63	\$1,330.59	acre	Guideline	e-10/2012
Building Demolition - Mixture of Types	Appendix K	\$0.278	\$0.31	ft3	Guidelin	e-10/2012
Building Demo Disposal (Average)	Appendix K	\$9.50	\$10.45	cy	Guidelin	e-10/2012
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	\$5.31	\$5.84	ft2	Guidelin	e-10/2012
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	\$19.78	\$21.76	linear foot	Guidelin	e-10/2012
Concrete Disposal On-Site	Appendix K	\$8.25	\$9.08	су	Guidelin	e-10/2012
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	\$3.00	\$3.30	foot	Guideline	e-10/2012
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	\$2.50	\$2.75	foot	Guidelin	e-10/2012
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	\$50	\$55	site	Guidelin	e-10/2012
Incidental Costs: Capping	Appendix L	\$10	\$11	each	Guidelin	e-10/2012
Incidental Costs: Site Location	Appendix L	\$10	\$11	hole	Guidelin	e-10/2012
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	\$0.40	\$0.44	foot	Guidelin	e-10/2012
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	\$30	\$33	well	Guidelin	e-10/2012
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	\$100	\$110	each	Guidelin	e-10/2012
Scarification Costs	Appendix P	\$69.02	\$75.92	acre	Guidelin	e-10/2012
Revegetation Costs-Seed	Appendix Q	\$106	\$117	acre	Actual C	osts-2013
Revegetation Costs-Mulch	Appendix Q	\$91.88	\$101.07	acre	Actual C	osts-2013
Revegetation Costs-Fertilizer	Appendix Q			acre	Actual C	osts-2013
Revegetation Costs-Total	Appendix Q	\$497.88	\$547.67	acre	Actual C	osts-2013
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline N	o. 12, Section 12(b)					
Construction & Demolition Debris Transportation & Disposal Costs						
Building Volume for Disposal	0.33					
Void Factor (for disposal)	1.1					
	Disposal (\$/ton)	C&D (cy/ton)	Tranport (\$/load)	C&D (cy/load)	Total (S/cy)	Total (\$/ft3)
C&D Debris (county landfill)	\$62.00	2	\$335.00	30	\$42.17	\$1.56
 Transportation and disposal costs based on actual costs (2013). Transport to account for air space in buildings based on FEMA - Debris Estimating 				ovider. Conversion	factors of 2 cy	/ton and 0.33
11e.(2) Byproduct Material Transportation & Disposal						
Load Correction Factor: Soil, sand, etc.	1.1					
Load Correction Factor: Process materials, etc.	0.42					
White Mesa	Disposal (\$/ton)	Disposal (\$/cy)	Volume (cy)	Tranport (\$/cy)	Total (\$/cy)	Total (\$/ft3)
Type I: Soil, sand, gravel, rock, concrete rubble, etc.	\$138.97	\$152.87	13.0	\$247.95	\$400.82	\$14.85
Type II: Process material, pumps, motors, etc.	\$160.08	\$67.23	24.7	\$130.50	\$197.73	\$7.32
Type II: Chipped piping	\$160.08	\$67.23	36.4	\$88.55	\$155.78	\$5.77
Pathfinder						
Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	\$130.00	13.0	\$26.73	\$156.73	\$5.80
Type II: Other process waste, process equipment, etc.	N/A	\$378.00	24.7	\$14.07	\$392.07	\$14.52
Type II: Chipped piping	N/A	\$378.00	36.4	\$9.55	\$387.55	\$14.35

*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all unloading and decontamination fees, waste tax, fuel surcharges, etc. Tranportation costs assume 1) one truck transports one 13-cy bin of Type I waste, 2) one truck transports one 24.7-cy bin of Type II process waste (including pumps, motors, etc.) and 3) one truck transports one 36.4-cy bin of Type II chipped piping waste.

	DUNDWATER RESTORATION UNIT COST	rs				1			
Ē	JOND WATER RESTORATION UNIT COS			 					
Well	Ifield Pumping			 			 		
	quipment	+		 			 	-	
	Wellfield Pump Sizes	5	hp				 		
	Wellfield Pump Flow Rate		gpm	 			 		
	kW to HP Conversion Factor	0.746	SE	 					
	Cost of Electricity	\$0.0597	kWhr	 			 		
	Efficiency	80%		 			 		
	Wellfield Pumping Cost	\$0.19	per kgal	 					
	· · · · · · · · · · · · · · · · · · ·		<u></u>	 	· · · ·	· · · ·	 		
Sate	llite Pumping								
Ê	quipment	-		 					
	Satellite Pump Sizes	60	hp						
	Satellite Pump Flow Rate	75	gpm						
	kW to HP Conversion Factor	0.746							
	Cost of Electricity	\$0.0597	kWhr						
	Efficiency	90%							
	Satellite Pumping Cost	\$0.66	per kgal						
Deep	Disposal Well Injection								
E	quipment								
	Deep Disposal Well Pump Size	75	hp						
	Deep Disposal Well Flow Rate		gpm	 					
Ц.	kW to HP Conversion Factor	0.746		 					
	Cost of Electricity	\$0.0597	kWhr						
	Efficiency	90%		 					
R	eagent			 			 		
	Antiscalant Cost (Scaletrol)	\$4.5177							
	Density of Water		lbs/gal	 			 		
	Specific Gravity (Scaletrol)	1.284		 			 		
	Antiscalant Cost (Scaletrol)	\$48.38	per gal	 · · · · ·					
	Antiscalant Dose (ScaleTrol)	0.0000048		 					
_	Deep Disposal Well Cost	\$1.06	per kgal	 			 		
m .		1				1			
		61.00		 			 		
Tota	l Groundwater Sweep Costs	\$1.90	per kgal	 					
		\$1.90	per kgal						
Reve	erse Osmosis	\$1.90	per kgal	 				· · · ·	
Reve	erse Osmosis quipment			 					
Reve	erse Osmosis quipment System Capacity	250	gpm	 	· · · · · ·				
Reve	erse Osmosis quipment System Capacity Unit Pump	250	gpm hp						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump	250 60 60	gpm hp hp	 	· · · · · · · · · · · · · · · · · · ·				
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump	250 60 60	gpm hp						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump	250 60 60 15 0.746	gpm hp hp hp						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity	250 60 60 15 0.746 \$0.0597	gpm hp hp hp						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency	250 60 60 15 0.746	gpm hp hp hp						
Reve	rrse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents	250 60 60 15 0.746 \$0.0597 90%	gpm hp hp kWhr						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency	250 60 60 15 0.746 \$0.0597	gpm hp hp hp kWhr ib/gal						
Reve	rrse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate	250 60 15 0.746 \$0.0597 90% 0.00000130	gpm hp hp hp kWhr lb/gal per lb						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774	gpm hp hp hp kWhr b/gal b/gal b/gal b/gal b/gal b/gal						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774	gpm hp hp hp kWhr b/gal b/gal b/gal b/gal b/gal b/gal						
Reve	rrse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050	gpm hp hp hp kWhr b/gal b/gal b/gal b/gal b/gal b/gal						
Reve	rrse Osmosis quipment System Capacity Unit Pump Unit Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse)	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124	gpm hp hp hp kWhr b/gal per lb b/gal per lb per lb bs/gal bs/gal						
Reve	rrse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse)	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124	gpm hp hp hp kWhr ib/gal per lb lb/gal per lb lb/gal per lb per lb lbs/gal per gal						
Reve	rrse Osmosis quipment System Capacity Unit Pump Unit Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse)	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036	gpm hp hp hp kWhr lb/gal per lb lb/gal per lb lbs/gal per gal gal/gal						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Dose (Hypersperse) Sodium Sulfide Usage Rate	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.000036 0.00017	gpm hp hp kWhr b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per gal gal/gal b/gal						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost	250 60 60 15 0.746 \$0.0597 90% 0.00000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036	gpm hp hp kWhr b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per gal gal/gal b/gal						
Reve	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Usage Rate RO Cost (without Reductant)	250 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.000036 0.00017 \$0.5520	gpm hp hp kWhr b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per gal gal/gal b/gal						
Reve	erse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost	250 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.000036 0.00017 \$0.5520	gpm hp hp hp kWhr lb/gal per lb lb/gal per lb bs/gal per lb lbs/gal per gal gal/gal lb/gal per gal gal/gal						
	rrse Osmosis quipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (with Reductant) RO Cost (with Reductant)	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000130 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000037 \$0.5520 \$0.58	gpm hp hp hp kWhr b/gal per lb b/gal per lb blb/gal per lb blbs/gal per gal gal/gal bl/gal per kgal						
	rrse Osmosis quipment System Capacity Unit Pump Unit Pump Waste Pump KW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (without Reductant) RO Cost (with Reductant) Costs for Production Wells	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000130 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000037 \$0.5520 \$0.58	gpm hp hp hp kWhr b/gal per lb b/gal per lb blb/gal per lb blbs/gal per gal gal/gal bl/gal per kgal						
	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (with Reductant) RO Cost (with Reductant) Costs for Production Wells puipment	250 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036 0.00017 \$0.5520 \$0.58 \$0.67	gpm hp hp hp kWhr ib/gal per lb bb/gal per lb bbs/gal per gal gal/gal b/gal per gal gal/gal per kgal per kgal						
	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (without Reductant) RO Cost (with Reductant) Costs for Production Wells puipment Pulling Unit Hours	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000130 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000017 \$0.5520 \$0.58 \$0.67	gpm hp hp hp kWhr kWhr b/gal per lb lb/gal per lb lbs/gal per gal gal/gal lb/gal per lb hgal per kgal per lb hs/gal hs/gal						
	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (with Reductant) RO Cost (with Reductant) Costs for Production Wells uipment Pulling Unit Hours Pulling Unit Hours Pulling Unit Cost	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000130 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036 0.00017 \$0.5520 \$0.58 \$0.67	gpm hp hp hp kWhr b/gal per lb bs/gal per lb bs/gal per lb bs/gal per gal gal/gal b/gal per gal gal/gal bb/gal per kgal per kgal per kgal per kgal						
	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency Eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (with Reductant) RO Cost (with Reductant) Costs for Production Wells uipment Pulling Unit Hours Pulling Unit Cost MIT Unit Hours	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000315 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036 0.00017 \$0.558 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.67 \$0.58 \$0.558 \$0.557 \$0.558 \$0.558 \$0.557 \$0.558 \$0.558 \$0.558 \$0.557 \$0.558 \$0.558 \$0.557 \$0.558 \$0.558 \$0.557 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.558 \$0.58	gpm hp hp hp kWhr b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal hs/gal hrs/day \$/hour hrs/day						
	rrse Osmosis puipment System Capacity Unit Pump Injection Pump Waste Pump kW to HP Conversion Factor Cost of Electricity Efficiency eagents Tripolyphosphate Usage Rate Tripolyphosphate Cost EDTA Usage Rate EDTA Cost Antiscalant Cost (Hypersperse) Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse) Antiscalant Cost (Hypersperse) Sodium Sulfide Usage Rate Sodium Sulfide Cost RO Cost (with Reductant) RO Cost (with Reductant) Costs for Production Wells uipment Pulling Unit Hours Pulling Unit Hours Pulling Unit Cost	250 60 60 60 15 0.746 \$0.0597 90% 0.0000130 \$1.0893 0.00000130 \$1.8774 \$3.9050 8.34 1.124 \$36.6061 0.0000036 0.00017 \$0.5520 \$0.58 \$0.67	gpm hp hp hp kWhr b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb b/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal per lb hs/gal hs/gal hrs/day \$/hour hrs/day						

—	-	Required Hours	0	hrs/day								
\vdash	-	Required Laborers		hrs/day per day		·						
+		Labor Cost	\$32.20				+					
H		ductivity		s/nour wells/day								
┝┝		MIT Cost for Production Wells	\$201.65									
┝┼		MIT Cost for Production wells	\$201.05	per well								
		Costs for Injection Wells										
		upment										
H		Pulling Unit Hours	0	hrs/day		· · · · · ·						
+		Pulling Unit Cost	\$38.85						<u> </u>			
\vdash		MIT Unit Hours		hrs/day			1					
\vdash		MIT Unit Cost	\$33.10					<u> </u>				
\vdash		bor		a/noui			+					
۲		Required Hours	8	hrs/day					··			
H		Required Laborers		per day								
H		Labor Cost	\$32.20				<u> </u>		<u>}</u>			
H		oductivity		wells/day								
H		MIT Cost for Injection Wells	\$130.60	per well							<u> </u>	
	-		0100100	per men			-				<u> </u>	
Bo	ost	er Pump Operating Cost							·		<u> </u>	
		uipment				l			t		t	
		Wellfield Pump Sizes	40	hp			1		<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
	1	Number of Pumps Running (avg.)		per year				<u> </u>				
		Hours Running		per day			† · · ·				<u> </u>	
		kW to HP Conversion Factor	0.746				—					
		Cost of Electricity	\$0.0597				1		· · · · · ·			
		Efficiency	90%									
\vdash		Booster Pump Operating Costs	\$155,962.62	per year							<u> </u>	
				· · · · ·								
w	EL	L ABANDONMENT UNIT COSTS										
Re	mo	oval of Contaminated Soil Around Wells							1			
	Eq	uipment							1			
		Cat 416 Backhoe Time	0.25	hours					1			
		Cat 416 Backhoe Cost	\$38.47	per hour								
	Lal	bor										
T		Radiation Technician	0.25	hours								
		Radiation Technician Cost	\$35.00	per hour								
		Operator		hours								
		Operator Cost	\$36.40	per hour								
1		sposal							_			
		ByProduct Disposal		cubic yard								
		Disposal Cost (incl. Transport)	\$156.73	per cubic yar	d							
		Removal of Contaminated Soil Cost	\$85.46	per well								
		Pump Dismantling and Disposal										
		bor										
		Number of Laborers		per day		L						
Ц		Number of Pumps Dismanteled		per day								
Ц		Hours Per Day		hours							L	
Ц		Laborers Cost	\$32.20				L					
	Dis	sposal			L	L	L	L		<u> </u>	<u> </u>	
		Volume of DDW Pump	240	ft ³								
		ByProduct Disposal		per ft ³		1	T	<u> </u>	<u> </u>	[
⊢⊦		DDW Pump Dismanteling and Disposal	\$2,788.03	per pump		<u>├</u>	+			 	<u>+</u> −−−	
\vdash	-	the stand the second se		Ber Bamb		+	<u> </u>			<u> </u>		
w	E T	LFIELD RECLAMATION COSTS				<u> </u>	+				<u> </u>	
ΗŤ	Ť					<u> </u>	1	<u> </u>			1	
w	ellf	ield Piping Removal					1	<u> </u>		1	†	
		uipment	1			<u>†</u>	·	<u> </u>		<u> </u>	<u> </u>	
Hť		Trackhoe	1	per day				<u>├</u> ────				
┝┼		Trackhoe Cost		per day			1			†		
		Loader		per day		<u> </u>					<u> </u>	
\vdash		Loader Cost		per day	·····	<u> </u>	1		+			
\vdash	_	Pickup Truck		per day			<u> </u>	·			<u> </u>	
⊢∔	_						+·		 	+	↓	<u> </u>
┡╌┤		Pickup Cost Chipper Cost	\$22,14	per hour per hour			<u> </u>	<u> </u>	<u> </u>		┝	
1 I.		Chipper Cost	1 \$52.72	per hour	1	1	1	1	1	1	1	1

	I al	100					1	<u>.</u>				
+		Backhoe Operator	\$36.40	per hour								
		Loader Operator		per hour								
	-1			per hour								
		Laborer										
		Hours Per Day		per day								
	Pro	oductivity	1500	ft/day								
	_	Piping Removal Cost	\$1.86	per foot of p	ipe							
Pij	pía	g Reduction										
		2" Pipe	0.0107									
Π		3" Pipe	0.0233									
	_	4" Pipe	0.0385									
H		6" Pipe	0.0834									
H	_	8" Pipe	0.1413									
	_	10" Pipe	0.2196									
\vdash			0.3088									
\vdash		12" Pipe					<u> </u>					
H		14" Pipe	0.3723				<u> </u>					
⊢∔		16" Pipe	0.4864				ļ					
\square	_	18" Pipe	0.6155				ļ					
			<u> </u>				ļ					
		k Line Removal					L		·			
\vdash	Eq	uipment Trackhoe	1	per day				<u> </u>			· · ·	
H		Trackhoe Cost	\$110.03	per day per hour	-			<u> </u>				
\vdash		Loader		per day				[·				
		Loader Cost		per hour								
	_	Pickup Truck	1	per day								
	_	Pickup Cost	\$22.14	per hour								
		Chipper Cost	\$52.72	per hour								
	La	bor										
		Trackhoe Operator	\$36.40	per hour								
		Loader Operator	\$36.40	per hour								
		Laborer	\$32.20	per hour								
	_	Hours Per Day		per day								
H	_	oductivity		fl/day					·			
┝┾	_	Buried Piping Removal Cost	\$3.71	per foot of p	ino							
┝┤	-	Burley Fiphig Removal Cost	33.71	per toor or p	inpe			+ ·				
Pr	_	uction Pump Volume										
		Length		inches			<u> </u>					
		Diameter Cubic Inch to Cubic Foot Conversion	0.0006	inches								
	_	Production Pump Volume		cubic feet								
		rioduction rump volume	0.43	cubic icci								
Re	eme	oval of Well Head Covers			1	··						<u> </u>
		lume of Well Head Cover (ft ³)	1.86	cubic feet								
		molition Cost	\$0.306	per cubic ft						1	·	
		contamination										
\square		Acid Usage		pounds per v		er						
\vdash		Acid Cost	\$0.20	per wellhead	cover			ļ				
\vdash		bor Radiation Tech	\$25.00	per hour				<u> </u>				··· ·
H		Operator	\$35.00	per nour per hour			1.		<u> </u>			
		oductivity		wellheads pe	r hour		<u> </u>	†·			·	
		sposal					1					
		Void space	10%									
Ц		Transportation and Disposal Cost		per cubic ft							ļ	
	L-	Removal of Well Head Cover Cost	\$11.72	per well			<u></u>					
H		er House Decontamination								<u>+</u>		<u></u>
<u> </u>	_	contamination				· · ·	+	+- · · · · ·				
		comanifiation	- In	I	1	l		1		1	1	1

				· ·							
\vdash	Acid Usage	20	pounds per h	eader house				·			
\vdash	Acid Cost	\$0.20	per pound								
	abor										L
	Radiation Tech		per hour								i
	Number of Operators		per day								
	Operator	\$36.40	per hour								
П	Hours Per Day		per day								
P	roductivity	1	header house	per day							
┝┾╸	Header House Decontamination Cost	\$621	per header l			· · · · · -					
H											
	der House Heating						· · · · · ·				
	leater Power Usage	12.5	1-11/								
											ŀ
	Days Used		days per year	r 1							
	lectricity Cost	\$0.0597									
H	leader House Heating Cost	\$3,222	per year		l						
							1				
WE	LLFIELD AND SATELLITE AND SURFACE	E RECLAMATI	ON								
We	lifield Road Reclamation										
	Jravel Road Base				l						
	Average Depth	0.25	feet	1							
\vdash	Average Width		feet	<u> </u>	ŀ						
┝┼╴	Material Moved (0% Grade)	\$1.42			<u> </u>				·		<u> </u>
⊢⊢	Cubic Yard to Cubic Feet Conversion	0.04						<u> </u>	·····		· · · · ·
	carification of Road	0.04		\		<u> </u>					
\vdash^{s}	Scarification Of Road				<u> </u>			·			<u> </u>
\vdash			рет асте		<u> </u>					<u> </u>	
⊢∔-	Average Width		feet		l			L		┣	
\square	Acre to Sq. Foot Conversion	2.29568E-05									
	Frading Cost		per acre							_	
T	Copsoil Depth	0.67									
	Discing/Seeding Costs	\$548									
L	inear Feet for Unit Cost	1000	feet								
	Wellfield Road Reclamation Cost	\$1,416.31	per 1000 fee	t.	· · · · · · · · · · · · · · · · · · ·						
\vdash	+		P	ř.							
	UIPMENT COSTS				<u> </u>	· · · ·			· .		<u> </u>
μ¥				<u> </u>	.						
							· ·				
	ık Removal										<u> </u>
	quipment							ļ			<u> </u>
┝┼╴	Loader		per hour								ļ
	Trackhoe		per hour								
\square	Manlift		per hour								
	Pickup		per hour								
	Lift Truck	\$62.08	per hour							·	
L	abor										
	Number of Operators	4				1					1
	Operator Cost	\$36.40	per hour								
	Hours Per Day		per day				1	i			
	Productivity		ft³/day						<u> </u>		
⊢ "											
	Tank Removal Cost	\$144	per ft ³		·				L		ļ
Pip	e Removal										
	quipment				1						
	Manlift	\$52.29	per hour	1	-		<u> </u>				
H+	Pickup		per hour							+	1
\vdash	Lift Truck		per hour		1		····	1		<u> </u>	
\vdash	Chipper		per hour	t	<u> </u>		<u> </u>				t
H,	abor	334.14	Per noui		·				· · · · · · ·	<u> </u>	
┝᠆┼┶	Number of Operators	4		t	<u> </u>						<u> </u>
\vdash	Operator Cost				<u> </u>	·	····	<u> </u>			<u> </u>
\vdash			per hour		<u> </u>		├	<u> </u>			
\vdash	Hours Per Day		per day					ļ	ŀ	┣	
^p	Productivity		ft/day		l	ļ				└───	<u> </u>
L	Pipe Removal Cost (Inside Buildings)	\$8.93	per ft		L				ļ		
	I										
Pur	np Removal										
TE	Equipment			1							
	Truck	\$22.14	per hour			l					
	Skid Steer		per hour		1				r · · · ·		
Ηī	abor		-	1	<u> </u>	<u> </u>			<u> </u>	1	1
				the second s	1			L	1	ممصما	1

Cameco Resources Smith Ranch Uranium Project 2013-14 Surety Estimate Update

						<u></u>					1	
		Number of Operators	2	·		·						
\vdash		Operator Cost	\$36.40	per hour per day						<u> </u>	-	
_	-	Hours Per Day										
	Pro	oductivity		ft ³ /day								
	l	Pump Removal	\$108.14	per ft ³								
		r Removal										
_		uipment					l					
		Truck	\$22.14	per hour								
		Lift Truck	\$62.08	per hour								
_		bor										
		Number of Operators Operator Cost	4 \$76.40	per hour								
		Hours Per Day		per day								
				ft ³ /day								
	Pr	oductivity	the state of the s									
		Dryer Removal Cost	\$14.71	per ft ³								
				· · · · · · · · · · · · · · · · · · ·								
R		nd Degasser Removal		L				L				
	Eg	uipment		nas harr		h			<u> </u>		ļ	
-	-	Truck		per hour per hour								
		bor		per nour								
		Number of Operators	2	··							· · · ·	
		Operator Cost		per hour						<u> </u>	<u> </u>	
-		Hours Per Day		per day			· · · ·			<u> </u>		
	-	oductivity		ft ³ /day								
\vdash	11		\$5.02								+	
-	<u> </u>	RO and Degasser Removal Cost	\$5.02	per ft ³						<u> </u>	ļ	
		DING COSTS				<u> </u>						
в	U11 L	LDING COSTS								<u> </u>		
1) aid	Wash Walls	·			<u> </u>						
_	Ac											
		Acid Usage	0.05	per square fo	ot							
		Acid Cost	\$0.20	per pound								
		uipment		F								
		Manlift	\$52.29	per hour								
	La	bor										
		Laborer	2	people								
		Laborer Cost		per hour								
		oductivity		square feet p								
		Acid Wash Walls Cost	\$0.94	per square f	oot							
_	Ļ											
_	r	Wash Floors	······									
\vdash	Ac	Acid Usage	0.05	per square fo	ot.	+						
Η	┝─	Acid Osage		per square to per pound		+				<u> </u>		
H	Ia	bor		Per pound		+			<u> </u>	<u> </u>	···	
		Laborer	2	people		<u> ····</u>						·
		Laborer Cost	\$32.20	per hour	İ	1		1			1	
	Pro	oductivity	125	square feet p	er hour							
		Acid Wash Floors Cost	\$0.53	per square f								
	Γ											
		ical Power										
		pping Costs for Operating DDWs, RO, and Wellfi	eld are included	in GW Rest C	osts							
	CI									L		
		Miscellaneous Pumps, Fans, Sumps, etc.	27.5		I				ļ		· · · · · · · · · · · · · · · · · · ·	
		Lighting		kW (per squa	are ft)				<u> </u>			
\vdash	-	kW to HP Conversion Factor	0.746	per kWhr							<u> </u>	
\vdash	\vdash	Electricity Cost Efficiency Factor	<u> </u>							<u> </u>		
$\left \cdot \right $	\vdash	Operating Hours Per Year		hours								
\vdash		CPP Power Cost	\$27,976	per year				·			+ • • • • •	
	-	CIT LONG DON		Fr. Jean								
H	SF	R 1 & SR 2 Power Costs				1						
		Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP			i				1	
	T	Lighting		kW	1	1	1	1	1	1		1
		kW to HP Conversion Factor	0.746	kW (per squa	are ft)							
_												

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	Electricity Cost	\$0.0597	per kWhr								
H	Efficiency Factor	90%									
┝┼╹	Operating Hours Per Year	8760	hours								
┝╌┾╸	SR 1 & SR 2 Power Costs		per year								
\vdash											
F	Reynolds Ranch Power Costs						-				
\vdash	Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP								
	Lighting	24	kW								
	kW to HP Conversion Factor	0.746	kW (per squa	are ft)							
	Electricity Cost	\$0.0597	per kWhr								
	Efficiency Factor	90%									
	Operating Hours Per Year	8760	hours								
Ĺ	Reynolds Ranch Power Costs	\$37,985	per year							_	
_											
μ	DDW - Typical									·	
\vdash	Miscellaneous Pumps, Fans, Sumps, etc.		HP								
\vdash	Lighting	0.4875									
\vdash	Heating	12.5		<u> </u>							
⊢	kW to HP Conversion Factor	0.746	kW (per squa per kWhr	nen)		<u> </u>					· · · ·
\vdash	Electricity Cost Efficiency Factor	<u>\$0.0597</u> 90%	per kwnr						l		l
\vdash	Operating Hours Per Year		hours					···		+	
┝┾╸	DDW Electrical Cost	\$4.223	per year	ł				 		+	
┠┼╴		J74663	per year				· · ·		<u></u>		
H,	Aaintenance Shop Power Costs										
⊢ť	Miscellaneous Pumps, Fans, Sumps, etc.	~ ?	HP		<u> </u>						
\vdash	Lighting	8.785									
	kW to HP Conversion Factor		kW (per squa	are ft)							
\vdash	Electricity Cost		per kWhr							· ·	
	Efficiency Factor	90%									
	Operating Hours Per Year	8760	hours								
\Box	Maintenance Shop Power Costs	\$5,293	per year								
ЦĽ	resh Water Pumphouse Power Costs						ļ				
\vdash	Miscellaneous Pumps, Fans, Sumps, etc.		НР							ļ	
-	Lighting	1.04					ļ				
┝╌┼╸	Heating		kW				<u> </u>				
\vdash	kW to HP Conversion Factor Electricity Cost		kW (per squ per kWhr	are n)	·						
┝┿	Efficiency Factor	90%	perkwiir								
┝┼╴	Operating Hours Per Year		hours				1				· · · · · · · · · · · · · · · · · · ·
┝┾╸	Fresh Water Pumphouse Power Costs	\$9,279	per year								
┝┼╴	i tesa water i ampuouse i over Costs		per year	<u> </u>		_					
$\exists c$	Office Building Power Costs										
Ħ	Miscellaneous Pumps, Fans, Sumps, etc.	7.5	HP							<u> </u>	
H	Lighting		kW			-					
	Air Conditioning	30	kW							*	
	kW to HP Conversion Factor	0.746	kW (per squ	are ft)							
\square	Electricity Cost		per kWhr								
\square	Efficiency Factor	90%								ļ	
\vdash	Operating Hours Per Year		hours		L		ļ			ļ	<u> </u>
\square	Office Building Power Costs	\$23,538	per year		ļ	L	ļ		ļ	ļ	
			CTC	1						ļ	
MI	SCELLANEOUS RECLAMATION AND RES	TORATION CO	515	\		<u> </u>				+	
	er and Subsoil Removal Costs	<u> </u>		+				·			
·				<u> </u>							
<u> </u>	Iquipment	\$ 110.03	per hour			·····	<u> </u>				
\vdash	Loader Cost		per hour			<u> </u>			· · · · · · · · · · · · · · · · · · ·	+	<u> </u>
├ - ;	abor	ψ <u></u> J0.22	pernout	+							+ • • • •
┝┼┶	Operator	36.40	per hour				<u> </u>		· · · · · · · · · · · · · · · · · · ·		1
-+t	roductivity		cubic yards/	hour						+	
⊢ †	Total Removal		per cubic va							+	<u> </u>
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<u></u> .									1. 30 - 1 an a'													
	Smith Ranch Water Balance Permit 633 7-Juni 3 Ausumes Pere Volumes of Treatment (1 PV. GVS and 8 PV. Roj																					
			1	1					Rev. S													-
Year				1 2013	2 2014	3 2015	4 2016	5 2017	6 2018	7 2019	8 2020	9 2021	10 2022	11 2023	12 2024	13 2025	14 2026	15 2027	16 2028	17 2029	18 2030	19 2031
Satellite CPP \ SR1 Water Balance	-																					
					1					-			1									
Total CPP /SR 1 Production Flow (gpm) Total CPP /SR 1 Production Bleed (gpm) Total CPP/SR 1 Production RO Con. (gpm)				5630 56.3 11.26	6110 61.1 12.22	5330 53.3 10.66	3700 37 7.4	3800 38 7.6	3870 38.7 7.74	4500 45 9	4500 45 9	4550 45.5 9.1	4500 45 9	4800 48 9.6	3900 39 7.8	7700 77 15.4	7500 75 15	5200 52 10.4	3600 36 7.2	2000 20 4	500 5	0 0 0
Satellite SR2 Water Balance																						
Total SR 2 Production Flow (gpm)				4200	4000	3300	3700	2900	2200	1600	400	1500	3300	3500	2500	2200	3200	3000	2800	2000	3000	2800
Total Production Bleed (gpm) Total SR 2 Production RO Con. (gpm)				42 8.4	40 8.0	33 6.6	37	29 5.8	22	16 3.2	4	15 3.0	33	35	25	22	32	30 6.0	28 5.6	20	30 6.0	28 5.6
Total Smith Ranch Production Flow				9830	10110	8630	7400	6700	6070	6100	4900	6050	7800	8300	6400	9900	10700	8200	6400	4000	3500	2800
Total Production Bleed (gpm)				19.7	20.2	17.3	14.8	13.4	12.1	12.2	9.8	12.1	15.6	16.6	12.8	19.8	21.4	16.4	12.8	8.0	7.0	5.6
Control Bleed (gpm)				20	20	20	20	20	20		20	20				20						
Control Bleed (gpm)				20	20	20	20	1 20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Restoration Flows	PV With Flair (Kgal)	GWS PV to Finish	RO PV to Finish																			
MU 1 (gal) (RO) GWS (gal)	62,841	0	1	150																		
Total Disposal (gal) MU 2 (gal)(RO) GWS (gal)	110,793	1	8	30	320	320	320 76	320	320	320												
Total Disposal (gal) MU 3 (gal)(RO)	152,836	1	8		80	80		8	80	80 400 95	720	720	0 720									
GWS (gal) Total Disposal (gal) MU 4/4A (gal)(RO)	119,224	0.6	7	300	300	400	400	200	200	95 100	171 180	17:	1 0 180									
GWS (gal) Total Disposal (gal)				71 75		100		50	50													
MU 15(gal) (RO) GWS (gal) Total Disposal (gal)	137,435	1	8			25 25	200 48 50	400 95 100		400 95 100	400	400	0									
MU15A (gal)(RO) GWS (gal) Total Disposal (gal)	52,673	1	a										400 95 100	300 71 75	200							
MU 7 (gel)(RO) GWS (gel)	104,743	1	8										100	320 76	320 76	76	320					
Total Disposal (gal) MU 9(gal)(RO)	136,386	1	8											80 150	300	80 400	80 400	40		300		
GWS (gal) Total Disposal (gal)														36 38	71 75	95 100	95 100	10	0 75	71 75		
MU 20 (gal)(RO) GWS (gal) Total Disposal (gal)	190,448	1	8											450 36 38	300 71 75	400 95 100	400 95 100	40) 51 101	5 500 5 175	500 1,25	400	0
Total Restoration Disposal (gpm)				105	155	205	230	230	230	280	280	280	280	230	280	280	280	280	240	200	100	0
Installed RO Capacity (gpm) (feed)	Feed (gpm)	Future (gpm)																				
	200																					
	250 250																					
		250 250																				
	900	500	-																			
Deep Disposal Well Capacity (gpm)	Permitted	Current	Future			10								10								
DDW #1 DDW #2	150 158	50 80		50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	50 80	\$0 80
DDW #10 DDW #6	126	20	-	20	20	20	20	20 30	20 30	20 30	20 30	20	20	20	20	20 30	20 30	20	20 30	20	20 30	20
DDW #7 (Fut)	100	0	50	0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
DDW #8 (Fut)	100	0	50	0	0	50	50	50	50	50	50	50	50	50	50 75	50	50	50	50	50	50	50
Pipeline to HUP		the state of the second	75			0	25	75	75	75	75	75	75	75		75	75	75	. 75	75	75	75
Total Available		180	175	180	230	280	305	355	355	355	355	355	355	355	355	355	355	355	355	355	355	355
Smith Ranch CPP Elutions				31.2	31.0	29.5	30.5	30.2	30.7	31.0	30.7	30.0	29.3	29.5	28.8	29.0	28.6	28.1	27.4	26.9	27.4	26.9
Total Production Bleed (gpm)				19.7	20.2	17.3	14.8	13.4	12.1	12.2	9.8	12.1	15.6	16.6	12.8	19.8	21.4	16.4	12.8	8.0	7.0	5.6
Control Bleed Total Restoration Disposal (gpm)				20.0	20.0	20.0 205.0	20.0 230.0	20.0 230.0	20.0 230.0	20.0 280.0	20.0 280.0	20.0 280.0	20.0 280.0	20.0 230.0	20.0 280.0	20.0 280.0	20.0 280.0	20.0 280.0	20.0 240.0	20.0	20.0	20.0
						403.0								2.00.0	A STATE	LUV.V						
Total Disposal Required (gpm)				175.9	226.2	271.8	295.3	293.6	292.8	343.2	340.5	342.1	344.9	296.1	341.6	348.8	350.0	344.5	300.2	254.9	154.4	52.5
Total Disposal Required (gpm) Total Disposal Balance				4	4	8	295.3	293.6 61	292.8 62	343.2	340.5 15	342.1 13	344.9	296.1 59	341.6	348.8 6	350.0 5	344.5	300.2 55	254.9	201	303

andanina akagadat. Ga bat na 7990. 			na ain ann	11.17 TH	Assumes 9 I		June 7, 2013 of Treatment (Rev 8.		nd 8 P.V. RO)								
Year	1	1	T	1	2	3		5	6	7	8	9	10	11	12	13	
Total Production Flow (gpm)				0	0	3300	3500	2000	1500	500	0	0	0	0	0	0	0
Control Bleed Capacity Available				20	20	37	35	50	55	115	20	20	20	20	20	20	120
Total Production Bleed (gpm)			1	0	0	33	35	20	15	5	0	0	0	0	0	0	0
Restoration Flows MU 27(gal) (RO) GWS (gal) Total Disposal (gal) MU 21 (gal)(RO) GWS (gal) Total Disposal (gal) Total Restoration Disposal (gpm) Installed RO Capacity (gpm) (feed)	PV With Flair (Kgal) 149140	GWS PV to Finish	RO PV to Finish 8	٥	0	0	. 0	0	0	0	400 95 100 100	400 95 100 100	400 95 100	95	100	400 100 100	
	Feed (gpm) 250 250																
Total Capacity	250													ž			
Deep Disposal Well Capacity (gpm)	250 250 500 Current	Future										I		Ē	I		
Deep Disposal Well Capacity (gpm) teynolds Ranch I (gpm)	250 250 500			20	20	20	20	20	20	20	20	20	20	20	20	20	20
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm)	250 250 500 Current	50		0	0	50	50	50	50	50	50	50	50	50	50	50	50
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm)	250 250 500 Current	50 50															
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm)	250 250 500 Current	50		0	0	50	50	50	50	50	50	50	50	50	50	50	50
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm)	250 250 500 Current	50 50		0	0	50	50	50	50	50	50	50	50	50	50	50	50
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Total Available	250 250 500 Current 20	50 50 50		0	0	50 0	50 0	50 0	50 0	50 50	50 50	50 50	50 50	50 50	50 50	50 50	50 50
Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Total Available Total Production Bleed (gpm)	250 250 500 Current 20	50 50 50		0 0 20	0 0 20	50 0 70	50 0 70	50 0 70	50 0 70	50 50 120	50 50 120	50 50 120	50 50 120	50 50 120	50 50 120	50 50 120	50 50 120
Total Capacity Deep Disposal Well Capacity (gpm) Reynolds Ranch I (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Additional Disposal Capacity (gpm) Total Asvailable Total Asvailable Total Production Bleed (gpm) Total Disposal Required (gpm)	250 250 500 Current 20	50 50 50		0 0 20	0 0 20	50 0 70 33	50 0 70 35	50 0 70 20	50 0 70 15	50 50 120 5	50 50 120 0	50 50 120 0	50 50 120 0	50 50 120 0	50 50 120 0	50 50 120 0	50 50 120 0

Highland Uranium Project

WDEQ/LQD Permit to Mine No. 603 - NRC License No. SUA-1548

2013-2014 Surety Estimate Update

The 2013-2014 Surety Estimate is based on the standardized uranium in-situ leach (ISL) bond format developed by the Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD), and, where applicable, the unit costs provided in WDEQ/LQD Guideline No. 12 (October 2012). The 2013-2014 Surety Estimate results in a proposed surety of \$81,122,100, which is a decrease of \$28,303,083 from the current WDEQ-approved 2012-13 estimate of \$109,425,183.

The attached 2013-14 Surety Estimate is based on the costs to complete ground water restoration, surface reclamation and decommissioning by a third party and contains all worksheets, master costs and unit cost derivations. A cost comparison of the 2012-13 vs 2013-14 surety estimates is also attached to facilitate review of this year's surety update. This comparison shows the dollar adjustments associated with individual cost components and is consistent with the changes described in the Surety Adjustments section below.

New Activities

The 2013-2014 Surety Estimate reflects costs associated with new development, refurbishment and restoration activities during the report period and planned operations during the next one-year surety period.

Refurbishment and Restoration

During the report period, Cameco Resources (Cameco) completed refurbishment activities at the Highland Central Processing Plant (CPP). These activities included demolition and disposal of the former Maintenance Building, Main Office and Office Trailers in the CPP area and replacement of tankage, piping, pumps and the dryer within the CPP. Removal of building reclamation costs associated with the Maintenance Building, Main Office and Office Trailers resulted in a decrease of approximately \$120,000 (before any escalators). Adjustments to tankage, piping and pumps associated with the CPP refurbishment, combined with other unit cost adjustments for removal and disposal of equipment, resulted in an increase of approximately \$108,000 (before any escalators).

During the report period, Cameco also completed extensive refurbishment activities in the E, F and H-Wellfields. These activities consisted of well replacements, bellhole repairs and header house upgrades. Updating the surety estimate to reflect the status of wellfield refurbishment activities resulted in a decrease of approximately \$1,500,000 (before any escalators).

Restoration activities continued in the C, D, D-Extension and F-Wellfields during the report period. Based on the status of restoration activities in these mine units, the number of planned pore volume (PV) treatments was reduced from 3 to 2 (Reverse Osmosis with Chemical Reductant) in the C-Wellfield, 4 to 1 (Reverse Osmosis/Chemical Reductant) in the D and D-Extension Wellfields and from 1 to 0.7 (Ground Water Sweep) and 4.5 to 3.4 (Reverse Osmosis) in the E-Wellfield. The costs associated with these changes are reflected in the Surety Adjustments section below.

Planned Operations

Cameco's WDEQ-approved 2012-13 surety estimate includes costs for development of and production (start-up) from the proposed I-Extension Wellfield. These plans were discontinued during the report period and are not planned for the next one-year surety period. As a result, these costs have been removed from the surety estimate resulting in a decrease of approximately \$1,400,000 (before any escalators).

During the next one-year surety period, Cameco anticipates installing 40 monitor wells in the J-Extension Wellfield in preparation for hydrologic baseline testing and future development of this mine unit. Updating the surety estimate with applicable costs resulted in an increase of approximately \$70,000 (before any escalators).

Surety Adjustments

Water Balance/Schedule Update

Cameco's water balance/schedule for the Highland Uranium Project was updated in June 2013 (see attached) to accompany the 2013 Annual Report to the WDEQ/LQD and 2013-14 Surety Estimate to the WDEQ/LQD and U.S. Nuclear Regulatory Commission (NRC). The water balance/schedule is an important aspect of the surety estimate as the number of years to restore ground water in each mine unit are reflected directly in various wellfield (GWR-WF Sheet) and site-wide (GWR-SITE Sheet) cost components of the surety estimate.

To facilitate preparation and review of the 2013-14 surety update, a new Restoration Schedule section was added to the wellfield data (WF DATA) worksheet to provide a link (data input) between the water balance/schedule and various cost components of the surety estimate. The Restoration Schedule section identifies the number of years associated with pre-restoration (i.e., the number of years a wellfield maintains bleed prior to active restoration), restoration (e.g., ground water sweep, reverse osmosis, etc.) and stability in each mine unit based on the 2013 update to the water balance/schedule.

In summary, the 2013 update to the water balance/schedule results in a ground water restoration period of 14 years, which is a decrease of 5 years from the 2012 update. Consistent with the current approved schedule, the proposed schedule continues to assume nine PVs of treatment including one PV of ground water sweep (GWS) and eight PVs of reverse osmosis (RO) treatment. Provided below is a summary of major changes to the 2013 water balance/schedule that resulted in a reduction in the restoration period from 19 to 14 years.

- Adjustment to PV treatments remaining based on progress of restoration to date;
- Adjustment to flow rates for wellfields in restoration based on current and planned flows;
- Sequencing of RO timelines to occur concurrently with GWS using a phased-approach in each mine unit. Previously, the schedule assumed extraction of one full PV of GWS throughout the entire mine unit prior to commencing RO treatment;
- Prioritization of mine units transitioning into restoration. This resulted in the I-Wellfield moving forward in the restoration schedule by two years and timelier decommissioning of ancillary facilities (e.g., Satellite No. 2) used for processing restoration fluids; and
- Addition of 100 gallons per minute (gpm) waste water disposal capacity for the Satellite No. 1 Wastewater Land Application Facility (Irrigator No. 1A) commencing in 2015.

Total Restoration and Reclamation Cost Estimate (TOTALS Sheet)

The 2013-14 surety update was revised by adjusting the overall contingency (as shown on the TOTALS worksheet) from 25% to 15% and applying additional escalators for contractor profit and overhead to individual master costs as appropriate (see Master Costs section below for additional information). Footnotes were added to the TOTALS worksheet to provide applicable regulatory references for the 15% contingency and 10% contractor profit and overhead line items. An additional footnote was added to clarify that the cost estimate reflects both WDEQ and NRC requirements and that no salvage value was assumed in calculation of the overall estimate.

Master Costs (MASTER COSTS Sheet)

As noted above, the 2013-14 surety update was revised by applying additional profit and overhead to master costs as appropriate. These costs and applicable percentages include a 40% net benefits escalator for labor, 10% profit and overhead for equipment (based on rates obtained from Equipment Watch Rental Rate Blue Book) and 10% profit and overhead for unit costs obtained from WDEQ/LQD Guideline No. 12. Other master costs, such as utility costs, chemical/material costs, analytical costs and waste disposal, are based on actual costs of third-party service providers that include profit and overhead.

The 2013-14 surety update was also updated to incorporate applicable pump efficiencies in the Master Costs sheet and Unit Cost calculations as appropriate. These efficiencies include 80% for all down-hole pumps and 90% for all surface pumps.

The 2013-14 surety estimate also reflects updated master costs for disposal of construction and demolition (C&D) debris and 11e.(2) byproduct material. These costs include an increase in C&D debris disposal based on 2013 costs and decrease in 11e.(2) byproduct material based on existing contracts and disposal options.

Ground Water Restoration (GWR-WF and GWR-SITE Sheets)

The 2013-14 surety update results in an estimate of \$45,308,604 in ground water restoration costs, which is a decrease of approximately \$5,098,000 from the 2012-13 estimate. Provided

below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Ground Water Restoration – Wellfield Costs

Ground Water Sweep	Adjustment to GWS unit cost from \$2.21 to \$1.22 per 1000 gallons (kgal) assuming waste water disposal via land application vs deep disposal wells (DDWs). Reduced PV treatments for the E-Wellfield from 1 to 0.7. Net adjustment: \$885,773 decrease.
Reverse Osmosis	Reduced PV treatments for D/D-Extension Wellfields from 0.5 to 0 and for E-Wellfield from 4.5 to 3.4. Unit cost adjustment to account for pumping recovery fluids from wellfield to RO and pumping RO permeate from satellite to wellfield. Net adjustment: \$292,346 increase.
RO with Reductant	Reduced PV treatments for C-Wellfield from 3 to 2 and for D/D- Extension Wellfields from 3.5 to 1. Unit cost adjustment to account for pumping recovery fluids from wellfield to RO and pumping RO permeate from satellite to wellfield. Net adjustment: \$384,599 increase.
Mechanical Integrity Tests	Revision to time period (years) based on updated water balance. Unit cost adjustment based on productivity and equipment requirements. Revision to well counts based on permit/license requirements that require five-year mechanical integrity tests (MITs) on injection wells only. Net adjustment: \$878,179 decrease.
Wellfield Refurbishment	Credit for work completed during 2012-13 and updated inventories. Net adjustment: \$1,520,099 decrease.
Monitoring and Sampling	Revision to time period (years) based on updated water balance. Added pre-restoration period to account for excursion monitoring costs until wellfield moves into restoration. Decrease in wells requiring sampling based on permit/license requirements. Decrease in analytical costs based on third-party laboratory fees. Net adjustment: \$3,527,921 decrease.
Header House Heating	Revision to time period (years) based on updated water balance and updated electrical costs. Net adjustment: \$120,507 increase.
Ground Water Restoration –	Site-Wide Costs
Building Utility	Added utility costs for Satellite No. 3. Updated annual heating

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costs based on actual operating costs. Reduced time period for

Satellite No. 2 from 19 to 7 years. Reduced time period for
Selenium Treatment Plant and DDWs from 19 to 18 years (i.e., end
of restoration period for Smith Ranch). Net adjustment: \$1,144,009
increase.

- Irrigation M&M Added costs for phytoremediation study and annual harvesting/incineration of vegetation. Updated annual monitoring costs and applied over 18 year period. Net adjustment: \$855,503 increase.
- Selenium Treatment Plant Updated annual operating cost from approx. \$282K to \$158K and time period from 19 to 18 years (i.e., end of restoration period for Smith Ranch). Net adjustment: \$2,515,971 decrease.
- Booster Pump Operation Updated annual operating cost from approx. \$12K to \$35K and time period from 19 to 13 years (i.e., end of restoration period for Highland). Net adjustment: \$213,157 increase.
- Infrastructure, etc. Updated annual operating cost from approx. \$62K to \$92K and time period from 16 to 13 years (i.e., end of restoration period). Net adjustment: \$22,160 increase.
- Deep Disposal Well MIT Updated MIT cost from approx. \$42K to \$32K and number of MITs per well from 4 to 3 based on updated restoration schedule. Net adjustment: \$219,217 decrease.
- Capital Added costs associated with replacement of Irrigator No. 1 center pivot irrigation system and construction of Smith Ranch-Highland connecting pipeline. Net adjustment: \$1,438,752 increase.
- Vehicle Operation Reduced time period from 19 to 14 years (i.e., end of stability period). Net adjustment: \$684,780 decrease.
- Labor Allocated 50% of supervisory labor to Highland with remaining 50% to Smith Ranch. Added one Environmental/Health Physics Tech, two Operator/Laborer and two Maintenance Tech positions. Reduced time period from 19 to 14 years (i.e., end of stability period). Net adjustment: \$662,800 increase.

Well & Drill Hole Abandonment (WA Sheet)

The 2013-14 surety update results in an estimate of \$8,464,994 in well and drill hole abandonment costs, which is a decrease of approximately \$6,364,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Well Abandonment	Updated inventory of in-service wells. Added abandonment costs for planned replacement wells associated with wellfield refurbishment. Adjustment for wells pending bond release using new WDEQ/LQD Guideline No. 12 unit cost for removal and disposal of casing. Net adjustment: \$2,167,017 decrease.
Contaminated Soil	Updated inventory of in-service wells. Unit cost adjustment that includes reduced 11e.(2) byproduct material disposal costs. Net adjustment: \$277,545 decrease.
Drill Hole Abandonment	Revised assumption that only 20% of drill holes may require topping off (i.e., sealing) within upper 100 foot of drill hole. Updated number of drill holes projected for 2011-12 and 2012-13 based on actual number of holes drilled. Added projected drill holes for 2013-14. Net adjustment: \$3,989,409 decrease.

Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)

The 2013-14 surety update results in an estimate of \$5,092,977 in wellfield building and equipment removal and disposal costs, which is a decrease of approximately \$1,382,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Wellfield Piping	Unit cost adjustment based on productivity associated with wellfield piping removal (vs buried trunkline) and use of chipper during removal/disposal process. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$924,590 decrease.
Well Pumps/Tubing	Updated inventory of in-service wells. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$143,833 decrease.
Buried Trunkline	Unit cost adjustment assuming use of chipper during piping removal. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$48,453 decrease.
Header Houses	Revised assumption in header house volume from 800 to 1600 cubic feet. Unit cost adjustment for disposal of C&D debris. Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$268,258 decrease.

Wellfield & Satellite Surface Reclamation (WF REC Sheet)

The 2013-14 surety update results in an estimate of \$497,386 in wellfield and satellite surface reclamation costs, which is a decrease of approximately \$34,000 from the 2012-13 estimate. In summary, no major changes are included in the 2013-14 surety update.

Equipment Removal & Disposal (EQUIP Sheet)

The 2013-14 surety update results in an estimate of \$752,980 in equipment removal and disposal costs, which is an increase of approximately \$124,000 from the 2012-13 estimate. In summary, no major changes are included in the 2013-14 surety update.

Building Demolition & Disposal (BLDGS Sheet)

The 2013-14 surety update results in an estimate of \$3,140,407 in building demolition and disposal costs, which is an increase of approximately \$572,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

Disposal Application of 0.33 conversion factor to account for air space in buildings and determine C&D debris volume for disposal. Unit cost adjustment for disposal of C&D debris. Net adjustment: \$508,198 increase.

Miscellaneous Reclamation (MISC REC Sheet)

The 2013-14 surety update results in an estimate of \$7,283,590 in miscellaneous reclamation costs, which is a decrease of approximately \$4,812,000 from the 2012-13 estimate. Provided below is a summary of major changes associated with cost components and the net dollar adjustment (before any escalators) to each category.

CPF/Office Area	Unit cost adjustment for disposal of C&D debris. Net adjustment: \$104,374 increase.
Waste Water Pipelines	Added piping from Satellite No. 2 to Irrigator No. 1 and Satellite No. 2 to Purge Storage Reservoir No. 2 (PSR-2). Net adjustment: \$316,893 increase.
Radium Settling Basins	Updated estimate based on planned expenditures (2013). Net adjustment: \$132,815 increase.
Potential Subsoil Mitigation	Added potential mitigation costs for Purge Storage Reservoir No. 1 (PSR-1). Unit cost adjustment for 11e.(2) byproduct material disposal. Net adjustment: \$3,174,075 decrease.
Potential Ground Water Mitigation (CLI/PSR-2)	Adjusted investigation costs based on progress to date. Added ground water pump and treat costs. Added well abandonment for planned new well installations. Net adjustment: \$2,070,089 decrease.

Highland Uranium Project

WDEQ/LQD Permit to Mine No. 603 - NRC License No. SUA-1548

Comparison of 2012-13 vs 2013-14 Surety Estimates

Cost Component	2012-13 Surety Estimate	2013-14 Surety Estimate	Adjustment	
Groundwater Restoration (GWR-WF and GWR-SITE Sheets)	\$50,406,711	\$45,308,604	(\$5,098,107)	
Groundwater Restoration - Wellfield Costs	19. ann 19. ann 19. anns		1997 - C.	
Ground Water Sweep	\$1,519,241	\$633,468	(\$885,773)	
Reverse Osmosis	\$3,383,582	\$3,675,928	\$292,346	
Reverse Osmosis with Chemical Reductant	\$3,161,667	\$3,546,266	\$384,599	
Mechanical Integrity Testing	\$1,357,344	\$479,165	(\$878,179)	
Wellfield Refurbishment	\$7,057,104	\$5,537,005	(\$1,520,099)	
Monitoring and Sampling	\$5,636,705	\$2,108,784	(\$3,527,921)	
Header House Heating	\$2,737,314	\$2,857,821	\$120,507	
Subtotal	\$24,852,957	\$18,838,437	(\$6,014,520)	
Groundwater Restoration - Site-Wide Costs				
Building Utility	\$1,644,515	\$2,788,524	\$1,144,009	
Irrigation Maintenance and Monitoring	\$424,157	\$1,279,660	\$855,503	
Selenium Treatment Plant	\$5,357,310	\$2,841,339	(\$2,515,971)	
Booster Pump Operation	\$237,402	\$450,559	\$213,157	
Infrastructure, Equipment Maintenance, Replacement and Repair	\$1,178,000	\$1,200,160	\$22,160	
Deep Disposal Well MIT	\$503,842	\$284,625	(\$219,217)	
Capital	\$0	\$1,438,752	\$1,438,752	
Vehicle Operation	\$3,784,800	\$3,100,020	(\$684,780)	
Labor	\$12,423,728	\$13,086,528	\$662,800	
Subtotal	\$25,553,754	\$26,470,167	\$916,413	
Well & Drill Hole Abandonment (WA Sheet)	\$14,828,922	\$8,464,994	(\$6,363,928)	
Well Abandonment	\$9,698,399	\$7,531,382	(\$2,167,017)	
Removal of Contaminated Soil Around Wells	\$618,603	\$341,058	(\$277,545)	
Drill Hole Abandonment	\$4,105,525	\$116,116	(\$3,989,409)	
Waste Disposal Well Abandonment	\$406,395	\$476,438	\$70,043	
Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)	\$6,475,398	\$5,092,978	(\$1,382,420)	
Wellfield Piping	\$4,510,310	\$3,585,721	(\$924,589)	
Well Pumps and Downhole Tubing	\$259,723	\$115,890	(\$143,833)	
Buried Trunkline	\$732,005	\$683,552	(\$48,453)	
Wellhead Covers	\$40,841	\$43,555	\$2,714	
Header Houses	\$932,519	\$664,260	(\$268,259)	

Highland Uranium Project

WDEQ/LQD Permit to Mine No. 603 - NRC License No. SUA-1548

Comparison of 2012-13 vs 2013-14 Surety Estimates

Cost Component	2012-13 Surety Estimate	2013-14 Surety Estimate	Adjustment
Wellfield & Satellite Surface Reclamation (WF REC Sheet)	\$531,706	\$497,386	(\$34,320)
Wellfield Pattern Areas	\$311,039	\$268,248	(\$42,791)
Wellfield Roads	\$126,347	\$132,427	\$6,080
Laydown Areas	\$32,494	\$31,630	(\$864)
Fence Removal	\$34,128	\$35,333	\$1,205
Satellite Areas	\$27,698	\$29,748	\$2,050
Equipment Removal and Disposal (EQUIP Sheet)	\$628,991	\$752,980	\$123,989
Removal and Loading	\$591,511	\$709,133	\$117,622
Transportation and Disposal	\$37,480	\$43,847	\$6,367
Building Demolition and Disposal (BLDGS Sheet)	\$2,568,147	\$3,140,407	\$572,260
Decontamination	\$191,623	\$176,086	(\$15,537)
Demolition	\$1,469,967	\$1,549,566	\$79,599
Disposal	\$906,557	\$1,414,755	\$508,198
Miscellaneous Reclamation (MISC REC Sheet)	\$12,095,819	\$7,283,590	(\$4,812,229)
CPF/Office Area	\$51,782	\$156,156	\$104,374
Access Roads	\$194,646	\$131,472	(\$63,174)
Waste Water Pipelines	\$173,347	\$490,240	\$316,893
Radium Settling Basins	\$23,190	\$156,005	\$132,815
Purge Storage Reservoirs	\$234,800	\$186,551	(\$48,249)
Irrigation Areas	\$133,825	\$124,375	(\$9,450)
Potential Subsoil Mitigation (Purge Storage Reservoirs)	\$8,135,206	\$4,961,131	(\$3,174,075)
Revegetation of Exxon Reclaimed Lands	\$13,158	\$11,884	(\$1,274)
Potential Ground Water Mitigation (CLI and PSR-2)	\$3,135,865	\$1,065,776	(\$2,070,089)
Subtotal Restoration and Reclamation Cost Estimate	\$87,540,146	\$70,540,939	(\$16,999,207)
Contingency, Profit and Overhead	\$21,885,037	\$10,581,141	(\$11,303,896)
Total Restoration and Reclamation Cost Estimate	\$109,425,183	\$81,122,100	(\$28,303,083)

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Total	Restoration and Reclamation Cost Estimate	
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)	\$45,308,604
II.	Well & Drill Hole Abandonment (WA Sheet)	\$8,464,994
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)	\$5,092,978
IV.	Wellfield & Satellite Surface Reclamation (WF REC Sheet)	\$497,386
V.	Equipment Removal and Disposal (EQUIP Sheet)	\$752,980
VI.	Building Demolition and Disposal (BLDGS Sheet)	\$3,140,407
VII.	Miscellaneous Reclamation (MISC REC Sheet)	\$7,283,590
	Subtotal Restoration and Reclamation Cost Estimate	\$70,540,939
	Contractor Profit & Overhead (10%) ¹ See Master Costs	
	Contingency (15%) ² 15%	\$10,581,141
	TOTAL ³	\$81,122,100
¹ , Per V	VDEQ/LQD Guideline No. 12, Section 12(b)	
² , Per V	VDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)	
³ , Costs	reflect both WDEQ & NRC requirements. No salvage value assumed.	

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Ground Water Restoration -Wellfield	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
I. Ground Water Sweep Costs												Contraction of the second second	
Estimated PV's	0	0	0	0	0	0	0	0.7	1	1	1	1	
Total kgals for GWS	0	0	0	0	0	0	0		232,890	90,864	84,780	66,812	1
Bleed to Deep Disposal Well (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Groundwater Sweep Unit Cost (\$/kgal)	\$1.22	\$1,22	\$1.22	\$1,22	\$1.22	\$1.22	\$1,22	\$1,22	\$1,22	\$1.22	\$1.22	\$1.22	
Subtotal Ground Water Sweep Costs per Wellfield	\$0	\$0	\$0	\$0	\$0	\$0			\$283,722	\$110,696	\$103,285	\$81,395	
Total Ground Water Sweep Costs	\$633,468												
II. Reverse Osmosis Costs													
Estimated PV's	0	0	0	0	0	0	0	3.4	4.5	4.5	4.5	4.5	
Total Kgals for RO	0	0	0	0	0	0		and the second state of second states of the second	1,048,005	408,888	381,510	300,654	
Wellfield Pumping Cost	\$0,19	\$0,19	\$0,19	\$0.19	\$0,19	\$0.19			\$0.19	\$0.19	\$0.19	\$0.19	\$0.1
Reverse Osmosis Unit Cost (\$/kgal)	\$0.58	\$0,58	\$0,58	\$0,58	\$0.58	\$0.58	\$0.58	\$0.58	\$0.58	\$0.58	\$0,58	\$0.58	\$0.5
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal	0	0	0	0		0			209,601	81,778	76,302	60,131	
DDW Disposal Cost(\$/kgal)	\$1.06	\$1.06	\$1.06	\$1,06	\$1.06	\$1,06	\$1,06	\$1.06	\$1.06	\$1.06	\$1.06	\$1,06	\$1,0
Permeate Volume for Re-Use	0	0	0	0	0	0	0	247.738	838,404	327,110	305,208	240,523	51.0
Satellite Pumping Cost (\$/kgal)	\$0.66	\$0,66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0,66	\$0.66	\$0.6
Subtotal Reverse Osmosis Costs per Wellfield	\$0	\$0	\$0	\$0		\$0		\$464 866	\$1,573,221	\$613,805	\$572,707	\$451.329	\$0,00
Total Reverse Osmosis Costs	\$3,675,928			-									
III. Reverse Osmosis with Chemical Reductant Costs		· · · · · · · · · · · · · · · · · · ·											
Estimated PV's	0	in in	2	1	1			3.5	3.5	3.5	3.5	3.5	
Total kgals for RO	0	0	169,644	19,691	1	32.309	19,233	3.3	815,115	318,024	296,730	233.842	
Wellfield Pumping Cost	\$0.19	\$0.19	\$0,19	\$0.19	\$0,19	\$0,19	\$0,19	\$0,19	\$15,115	\$0,19	\$0.19	\$0,19	\$0,19
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)	\$0.67	\$0.13	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.15
Bleed to Deep Disposal Well (%)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	
Brine Volume for Disposal (kgal)	2078	20%	33,929	3,938	20%	6,462	3.847	63,756	163.023	63.605	59.346	46,768	20%
DDW Disposal Cost(\$/kgal)	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1,06	\$1.06	40,708	\$1.06
Permeate Volume for Re-Use	0	\$1.00 0	135,715	15,753	\$1.00 0	25,847	15,386	255.024	652.092	254.419	237.384	187.074	\$1.00
Satellite Pumping Cost (\$/kgal)	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0.66	\$0,60
Subtotal RO with Chemical Reductant Costs per Wellfield	\$0.00	\$0.00	\$270,582	\$31,407	\$0.66	\$51,533	\$30,677	\$508,453	\$1,300,106	\$507,247	\$473,284	\$372,977	\$0,60
Total Reverse Osmosis with Chemical Reductant Costs	\$3,546,266	30	\$210,382	\$31,407	30	\$51,355	\$30,077	\$508,455	\$1,500,100	\$307,247	\$473,204	\$312,911	30
	33,340,200												1
IV. Mechanical Integrity Testing (MIT) Costs							1. 11 - 11 - 11 - 11 - 11 - 11 - 11 - 1						
Pre-Restoration, Restoration and Stability Period (yrs)	0	0	3	3	3	3	3	6	14	6	8	10	(
Number of Injection Wells	1	194	258	0	0	143	0	229	704	285	234	233	0
Number of MITs per Injection Well	0.0	0.0	0.6	0.6	0.6	0,6	0.6	1.2	2.8	1.2	1.6	2.0	
MIT Costs per Injection Well	\$130,60	\$130.60	\$130.60	\$130.60	\$130,60	\$130,60	\$130.60	\$130.60	\$130.60	\$130.60	\$130,60	\$130.60	\$130.60
Subtotal MIT Costs per Wellfield	\$0	\$0	\$20,217	\$0	\$0	\$11,205	\$0	\$35,888	\$257,435	\$44,665	\$48,896	\$60,859	\$(
Total Wellfield MIT Costs	\$479,165							· · · · · · · · · · · · · · · · · · ·					
V. Wellfield Refurbishment Costs											100 C 100 C		1
Well Replacement (#)	0	0	5	0	0	0	0	10	180	15	47	18	0
Replacement (\$/well)	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763	\$14,763
Bellhole Refurbishment (#)	0	0	0	0	0	0	0	0	0	0	6	0	(
Refurbishment (\$/bellhole)	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530	\$5,530
Header House Refurbishment (#)	0	0	0	0	0	0	0	1	26	10	6	9	C
Refurbishment (\$/header house)	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$10,000	\$32,000	\$32,000	\$32,000
Subtotal Refurbishment Cost per Wellfield	\$0	\$0	\$73,815	\$0	\$0	\$0	\$0	\$179,630	\$3,489,340	\$321,445	\$919,041	\$553,734	\$0
Total Wellfield Refurbishment Cost	\$5,537,005												
VI. Monitoring and Sampling Costs						New York Control of Co							August
A. Pre-Restoration Monitoring													particular and a stranged
1. Excursion Monitoring (M, MO and MU wells, twice per month)													
# of Wells	0	0	0	0	0	0	0	0	90	72	29	42	· · · · · ·

Highland 2013-14 Surety Estimate_Rev1.xlsx

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Ground Water Restoration - Wellfield	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Total # samples	0	0	0	0	0	0	0	0	12960	1728	696	60-18	G
UCL Parameters (\$/sample)	\$30,00	\$30.00	\$30.00	\$30,00	\$30.00	\$30,00	\$30 (8)	\$30.00	\$30,00	\$30.00	\$30,00	\$30,00	\$30,00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit	\$0.00	\$0,00	\$0,00	\$0.00	\$0.00	\$0,00	\$0,00	\$0.00	\$388,800.00	\$51,840.00	\$20,880.00	\$181,440.00	\$0.00
Total Pre-Restoration Monitoring Costs	\$642,960.00												
B. Restoration Monitoring													
L Sampling Prior to Start-up (MP Wells)													
# of Wells	0	0	0	0	Û	0	0	0	21	12	6	12	U
Modified Guideline 8 (\$/sample)	\$249,00	\$249.00	\$249,00	\$249.00	\$249.00	\$249,00	\$249,00	\$249,00	\$249,00	\$249,00	\$249,00	\$249,00	\$249,00
2. Restoration Progress Monitoring (MP Wells, every 2 months)													
# of Wells	0	0	32	0	11	9	5.	29	21	12	6	12	0
Total # samples	0	0	384	0	132	108		870	882	288	216	216	0
Restoration Progress Parameters (\$/sample)	\$50.00	\$50,00	\$50.00	\$50.00	\$50,00	\$50.00	\$50.00	\$50,00	\$50.00	\$50.00	\$50.00	\$50,00	\$50,00
3 Excursion Monitoring (M. MO and MU wells, every 2 months)													
# of Wells	0	0	71	0	0	22	16	51	90	72	29	42	0
Total # samples	0	0	852	0	0	264	192	1530	3780	1728	1044	756	0
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30,00	\$30,00	\$30.00	\$30,00	\$30.00	\$30.00	\$30,00	\$30.00	\$30,00	\$30.00	\$30,00
Subtotal Restoration Monitoring Costs per Mine Unit	\$0.00	\$0,00	\$44,760.00	\$0,00	\$6,600,00	\$13,320.00	\$8,760,00	\$89,400,00	\$162,729,00	\$69,228,00	\$43,614,00	\$36,468,00	\$0,00
Total Restoration Monitoring Costs	\$474,879												
C. Stability Monitoring													
1. Beginning of stability (MP wells)													
# of Wells	0	0	32	. 0	u	9	5	29	21	12	6	12	U
Modified Guideline 8 (\$/sample)	\$249.00	\$249.00	\$249.00	\$249,00	\$249.00	\$249.00	\$249.00	\$249.00	\$249.00	\$249,00	\$249.00	\$249,00	\$249,00
2. Quarterly sampling (MP wells)													
# of Wells	0	0	32	0	11	9	5	29	21	12	6	12	0
Total # samples	0	0	128	0	44	36	20	116	84	48	24	48	0
Modified Guideline 8 (\$/sample)	\$249.00	\$249,00	\$249.00	\$249.00	\$249.00	\$249.00	\$249,00	\$249.00	\$249.00	\$249,00	\$249.00	\$249,00	\$249,00
3. Monitor Well Sampling (M wells, every 2 months)													
# of Wells	0	0	37	0	0	17	10	26	-48	45	20	28	0
Total # samples	0	()	222	0	0	102	60	156	288	270	120	168	0
UCL Parameters (\$/sample)	\$30,00	\$30.00	\$30.00	\$30,00	\$30,00	\$30,00	\$30,00	\$30.00	\$30,00	\$30.00	\$30.00	\$30,00	\$30,00
Subtotal Stability Monitoring Costs per Mine Unit	\$0.00	\$0.00	\$46,500,00	\$0,00	\$13,695.00	\$14,265,00	\$8,025.00	\$40,785.00	\$34,785.00	\$23,040,00	\$11,070,00	\$19,980,00	\$0,00
Total Stability Monitoring Costs	\$212,145.00							_					
D. Other Laboratory Costs													
Radon, Bioassay, etc.	\$0	\$0	\$39,600	\$39,600	\$39,600	\$39,600	\$39,600	\$79,200	\$184,800	\$79,200	\$105,600	\$132,000	\$0
Subtotal Monitoring and Sampling Costs per Mine Unit	\$0	\$0	\$130,860	\$39,600	\$59,895	\$67,185	\$56,385	\$209,385	\$771,114	\$223,308	\$181,164	\$369,888	\$0
Total Monitoring and Sampling Costs	\$2,108,784												
VII. Header House Heating Costs											·····		
Number of Header Houses per Unit(s)		18	20	0		1		15	45	10		9	
Pre-Restoration and Restoration Period (vrs)		0		0					43	5		9	0
Electrical Heating Costs (\$/yr)	\$3.222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3,222	\$3.222
Subtotal Header House Heating Costs (3/37)	\$3.222	\$5,222 \$0	\$128,876	\$3,222 \$0	\$3,222	\$3,222 \$25,775	\$19,331	\$241.642	\$3,222	\$161.095	\$135,320	\$260 973	\$3.222
Total Header House Heating Costs	\$2,857,821	20	a120,075	\$0	50	\$25,775	\$19,331	\$241,042	\$1,034,609	\$101,095	2122/270	\$200,973	20
I OTAL LICAUET HOUSE HEATING COSTS	32,357,821												
TOTAL RESTORATION COST PER WELLFIELD	\$0	\$0	\$624,350	\$71,007	\$59,895	\$155,698	\$106,393	\$1,694,234	\$9,559,747	\$1,982,261	\$2,433,697	\$2,151,155	\$0
TOTAL WELLFIELD RESTORATION COST	\$18,838,437											-	

Grou	nd	Water Restoration - Site Wide				Ē	Deep Disposal Wells	
I.	Bu	ilding Utility Costs	Satellite No.2	Selenium Plant	Satellite No.3	Morton 1-20	Vollman 33-27	SRHUP #9
	As	sumptions:						
-		Electricity Unit Cost (\$/yr)	\$26,221	\$37,619	\$26,221	\$4,225	\$4,225	\$4,225
		Propane (\$/yr)	\$1,762	\$1,762	\$69,132	\$0	\$0	\$0
		Natural Gas (\$/yr)	\$12,828	\$12,828	\$0	\$0	\$0	\$0
		Number of Years	7	18	14	18	18	18
	Su	btotal Utility Cost per Building	\$285,679	\$939,768	\$1,334,950	\$76,042	\$76,042	\$76,042
	*Y	rs for Satellite No. 2 assumes end of restoration for MU-I						
	*Y	rs for Satellite No. 3 assumes end of restoration for MU-K-N	North					
	To	tal Building Utility Costs	\$2,788,524					
1.	In	igation Maintenance and Monitoring	Irrigator No. 1A	Irrigator No. 2				
	A.	Phytoremediation Study						·····
		Phytoremediation Study, PPCU	\$0	\$40,000	*Based on two year	contract (2013)		
		Phytoremediation Study, University of Wyoming	\$0		*Based on two year			
		Subtotal Phytoremediation Studies	\$0	\$122,080		proposal (2012)		
	B .	Harvesting Costs		,			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
		Irrigation Area (acres)	55	106				
	1	Harvesting Costs (\$/acre)	\$250	\$250				
		Restoration Period (yrs)	18		* Based on timeline	e to support Smith F	Ranch restoration act	vities
	1-	Subtotal Harvesting Costs per Irrigator	\$247,500	\$477,000		· · · · · · · · · · · · · · · · · · ·		
	C.	Irrigation Monitoring						
	<u> </u>	# of Irrigation Fluid Samples/Year	6	6				· · · -
		\$/sample	\$245	\$245				
		# of Vegetation Samples/Year	5	5		· _ · · · · · · · · · ·		
		\$/sample	\$270	\$270				
		# of Soil Samples/Year	30	34				
	-	\$/sample	\$255	\$255		· · · ·		
	1	# of Soil Water Samples/Year	12	2				
		\$/sample	\$150	\$150				
		Restoration Period (yrs)	18		* Based on timeline	to support Smith R	anch restoration act	vities
		Subtotal Monitoring Costs per Irrigator	\$220,860	\$212,220				
	Su	ototal Monitoring and Harvesting Costs per Irrigator	\$468,360	\$811,300				
		tal Maintenance and Monitoring Costs	\$1,279,660					
11.	Sel	enium Plant Operation Costs						
		Restoration Period (yrs)	18		* Based on timeline	to support Smith R	anch restoration act	vities
	_	Selenium Plant Operating Cost (\$/yr)	\$157,852					
		tal Selenium Plant Operating Cost	\$2,841,339					
V.	Bo	oster Pump Operation Costs						
		Restoration Period (yrs)	13					

	Booster Pump Operating Cost (\$/yr)	\$34,658.36	
	Total Booster Pump Operating Cost	\$450,559	
v.	Infrastructure, Equipment Maintenance,		
<u>.</u>	Replacement and Repair Costs		
	Annual Maintenance Cost (\$/yr)	\$92,320	*Based on planned expenditures (2013)
	Restoration Period (yrs)	13	*Based on planned expenditures (2013)
I	Total Cost	\$1,200,160	
		\$1,200,100	· · · · · · · · · · · · · · · · · · ·
VI.	Deep Disposal Well MIT Costs		
	Five-year MIT Costs for Disposal Wells	\$31,625.00	
	Number of DDWs	3	
	Number of MITs per DDW	3	* Based on timeline to support Smith Ranch restoration activities
	Total DDW MIT Cost	\$284,625	
<u>vn.</u>	Capital Costs		
	*Estimates based on planned expenditures (2013)		
	Irrigator No. 1 Pivot Replacement	\$906,000	
	SR-HUP Connecting Pipeline	\$532,752	
	Total Capital Costs	\$1,438,752	
VIII.	Vehicle Operation Costs		
	Number of Pickup Trucks (Gas)	10	
	Truck Cost (\$/hr)	\$22.14	
	Average Operating Time (hrs/yr)	1000	
	Restoration and Stability Period (yrs)	14	
	Total Vehicle Operation Cost	\$3,100,020	
IX.	Labor Costs		
	Assumptions:		
	Number of Environmental Managers/RSOs	0.5	*Management positions split between Highland and Smith Ranch
	\$/hr	\$64.40	
	Number of Restoration Managers	0.5	*Management positions split between Highland and Smith Ranch
	\$/hr	\$56.00	
	Number of Environmental Techs/HPTs	2	
	\$/hr	\$35.00	
	Number of Operators/Laborers	7	
	\$/hr	\$36.40	
	Number of Maintenance Technicians	2	
	\$/hr	\$32.20	
	Hrs/yr	2080	
	Restoration and Stability Period (yrs)	14	
	Total Labor Cost	\$13,086,528	
TOTA	AL SITE-WIDE RESTORATION COSTS	\$26,470,167	

Well and Drill Hole Abaudonment	A-Welffield	B-Wellfield	C-Weilfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Weilfield	F-Wellfield	H-Weilfield	I-Welifield	J-Wellfield	J-Extension	Other
I. Well Ahandonment (Wellfields)														
A Scaling Costs				Inc in MU-C	Inc in MU-C		Inc in MU-D							
Total # of Wells per Wellfield	500	342	567	<u>u</u>		288	0	438					40	5
Production. Injection and Perimeter Well Average Depth (it)		450		550	550 \$2,75	600	600 \$2.75	550			650		540	650
Well Abandonment (Sealing) Costs (\$/(t)	\$2.75	\$2.75	\$2.75	\$2.75		\$2.75				\$2.75	\$2.75		\$2.75	\$2.75
Subtotal Sealing Costs per Wellfield	\$11,000	\$485,100	\$857,588	\$0	\$0	\$475,200	5 0	\$662,475	\$2,627,625	\$748,000	\$800,800	\$608,850	\$59,400	\$5,363
B Casing Removal and Diposal Costs														
Total # of Wells per Wellfield	*	392	567	0	0	288				544	448		40	
# of Previously Abandoned Wells Pending Release	54	118	180	0	0	86	0				40		()	0
Total # of Wells for Casing Removal and Disposal	62	510	747	0	0	374	0		1800		488	430	40	3
Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33	\$33			\$33	\$33	\$33	\$33	\$33
Subtotal Casing Removal and Diposal Costs per Wellfield	\$2,046	\$16,830	\$24,651	S U	\$0	\$12,342	\$0	\$23,397	\$59,400	\$19.602	\$16,104	\$14,190	\$1,320	\$99
Subtotal Well Abandonment Costs per Wellfield	\$13,046	\$501,930	\$882,239	50	\$ 0	\$487,542	S 0	\$685,872	\$2,687.025	\$767.602	\$816,904	\$623,040	\$60,720	\$5,462
Total Well Abandonment Costs	\$7,531,382													
11. Removal of Contaminated Soil Around Wells														
# of Production and Injection Wells		327	464	0	0	234	0	379	1343	466	412	365	0	
Removal of Contaminated Soil Around Wells (S/well)	\$85,46	\$85.46	\$85.46	\$85.46	\$85.46	\$85,46	\$85.46	\$85,40	\$85 46	\$85 46	\$85.46	\$85.46	\$85,46	
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$85	\$27,944	\$39,652	SO	\$0	\$19,997	\$0	\$32,388	\$114,769	\$39,823	\$35,208	\$31,192	\$0,40	
Total Contaminated Soil Removal/Disposal Costs	\$341,058	327,711												
III. Drill Hole Ahandonment												• • • • • • • • • • • • • • • • • • • •		
		_												
A Drill Hole Plug and Abandonment														
# of Drill Holes Pending Bond Release							·							
2009-10	<u>89</u>													
2010-11	133													
2011-12	195													
2012-13	95													
# of Projected Drill Holes														
2013-14	300													
Total # of Drill Holes	812													
% of Drill Holes Requiring Bentonite Top 100 ft	20%													
Total Footage Requiring Abandonment (ft)	16,240													
Hole Abandorment (\$/ft)	\$3,30													
Subtotal Plug and Abandonment Costs	\$53,592													
B Incidental Costs														
Total # of Drill Holes	812													
Site Location (\$/hole)	\$11													
Capping (\$/liole)	\$11													
Small Site Grading and Seeding (\$/site)	\$55													
Subtotal Incidental Costs	\$62,524													
Total Delineation Hole Abandonment	\$116,116													
IV. Waste Disposal Well Abandonment	Murton No. 1-20	Vollman No. 33-27	SRHUP#9											
	MOTION NO. 1-20	vonman re. 53-27	SKHUP#9											
A. Well Sealing	9,206	14,412	9,500											
												· · · · · · · · · · · · · · · · · · ·		
Scaling Cost Per Foot	\$13.62	\$13.62	\$13.62											
Scaling costs per foot includes surface reclamation costs														
Subtotal Plugging Costs per Well	\$125,386	\$196.291	\$129,390											
B Pump Dismantling and Decontamination														
Number of Pumps	2	2	2											
Pump Dismantling and Disposal Cost	\$2,788	\$2,788	\$2,788											
Subtotal Dismantling and Decon Costs per Well	\$5,576.06	\$5,576.06	\$5,576.06											
C. Tubing String Disposal (NRC-Licensed Facility)														
Length of Tubing String (it)	8,498	8.869	8.820											
Diameter of Tubing String (inches)	2,875	2.875	2.875											
Volume of Tubing String (ft [*])	383	400	397											
Transportation and Disposal Unit Cost (\$/fi3)	\$7.32	\$7.32	\$7.32											-
Subtotal Tubing String Disposal Costs per Well	\$2,804	\$2.927	\$2,911											
Subtotal Waste Disposal Well Abaudonment Costs per Well	\$133,766	\$204,795	\$137,877											
Total Waste Disposal Well Abandonment Costs	\$476,438													
┠╾╀┰┼╼╎╾╸┥╴╸┝													l	
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	58,464,994						-							

Wellfield Buildings and Equipment Removal and Disposal	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
I. Wellfield Piping				Inc in MU-C	Inc in MU-C								
Number of Header Houses per Wellfield	5	18	20		0	4	3	15	45	10	6	9	
Approximate Length of Piping per Header House (ft)	13,800	13,800	13,800		13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	
*average 46 wells per with 300 ft pipeline/well)									10,000	10,000	10,000	12,000	10,00
Approximate Total Length of Piping (ft)	69,000	248,400	276,000	(0	55,200	41,400	207,000	621,000	138,000	82,800	124,200	1
A. Removal and Loading							11,100	201,000	021,000	120,000	02,000	121,200	·
Wellfield Piping Removal Unit Cost (\$/ft of pipe)	\$1.86	\$1.86	\$1.86	\$1.80	\$1.86	\$1,86	\$1.86	\$1.86	\$1.86	\$1,86	\$1.86	\$1.86	\$1.80
Subtotal Wellfield Piping Removal and Loading Costs	\$128,109					\$102,487		\$384,327	\$1,152,980	\$256,218	\$153,731	\$230,596	
B. Transport and Disposal Costs (NRC-Licensed Facility)	\$120,105	\$101,172	4012,100		40	\$102,107	\$70,005	\$504,527	\$1,152,700	\$250,210	\$155,151	\$250,570	
Average Diameter of Piping (inches)	2	2	2	3	2	2	2	2	2	2	2	2	
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0,011	0.011	0.011	0.011		0.011	0.011	0.011	0.011	0.011	0.01
Chipped Volume per Wellfield (ft ³)	740		2959			592		2219	6658	1480	888	1332	
Volume for Disposal Assuming 10% Void Space (ft ³)	814		3255	0		651		2441	7324	1628	977		
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77		\$5,77		A CONTRACTOR OF	\$5.77		\$5.77	\$5.77	\$5.77	\$5.77	\$5,77	
Subtotal Wellfield Piping Transport and Disposal Costs	\$4,697		\$18,781	\$5.77		\$3,756		\$14,084	\$42,258	\$9,393	\$5.637	\$8,453	
Subtotal Wellfield Piping Costs per Wellfield	\$132,806		\$531,217	\$0		\$106,243		\$398,411	\$1,195,238				\$0 \$0
Total Wellfield Piping Costs	\$132,800		\$331,217	30		\$100,243	\$79,681	\$398,411	\$1,195,238	\$265,611	\$159,368	\$239,049	50
Total weilfield Piping Costs	33,305,/21												
II. Well Pumps and DownholeTubing													
Assumptions: Pump and tubing removal costs included under ground water resto	oration labor												
60% of production/injection wells contain pumps and/or tubing				1			Press Marchael Connect						
A. Pump and Tubing Transportation and Disposal				Inc in MU-C	Inc in MU-C		Inc in MU-D						
Number of Production Wells	0	133	204		0	91		145	549	174	155	123	(
Number of Injection Wells	1	194	261	0	0	143			794	293	258	242	
Number of Monitor Wells	7			0	0	50		59	113	74		45	
1. Pump Volume			02	~					14.5	/*			
Number of Production Wells with Pumps	0	133	203.5	0	0	91	0	145	549	173.5	154.5	123	0
Pump Volume (ft ³)	0.43	0.43	0.43	0.43	0.43	0.43		0,43	0.43	0.43	0.43	0.43	0.43
Pump Volume per Wellfield (ft ³)	0.0	57.6	88.1	0,0		39.4		62.8	237.8	75.2	66.9	53.3	0.0
2. Tubing Volume	0.0	57,0	00.1	0.0	0.0	55.4	0.0	02.0	257.0	1.5.2	00.7	D. D. D.	4,0
Average Tubing Length per Well (ft)	475	425	525	525	525	575	575	525	625	475	625	515	515
*Average tubing length/wellfield based on average well depth minus 25 ft	475		525	525	525	515	515	525	025	475	015	212	515
Number of Production Wells with Tubing	0	80	122	0	0	55	0	87	329	104	93	74	
Number of Injection Wells with Tubing	1	116	156	0	0	86		140	476	176	155	145	0
Tubing Length per Wellfield (ft)	3,800	110,500	190,575	0		109,825	0		573,750	168,150	176,250	135,960	20,600
Diameter of Production Well Fiberglass Tubing (inches)	3,800	110,500	190,575		2	109,823	2	150,150	373,730	108,150	176,230	135,960	20,600
Diameter of Production Weil HDPE Tubing (inches)	1.25	1.25	1.25	1.25	-	1.25		1.25		÷		2	2
Chipped Volume Reduction (ft ³ /ft)	0.011	0.011	0.011	0.011		0.011	0.011	0.011	1.25	1.25	1.25	1.25	1.25
				the second s						0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft ³)	41	1185	2043	0		1177	0	1610	6151	1803	1890	1458	221
Volume of Pump and Tubing (ft ³)	41	1243	2131	0		1216	0	1673	6389	1878	1957	1511	221
Volume for Disposal Assuming Void Space (ft ³)	45		2344	0	0	1338	0	1840	7028	2066	2153	1662	243
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5,77		\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	\$260	\$7,887	\$13,524	\$0	\$0	\$7,720	\$0	\$10,616	\$40,550	\$11,920	\$12,422	\$9,589	\$1,402
Total Pump and DownholeTubing Costs	\$115,890												
III. Buried Trunkline (Includes \$ for fiber optic cable removal)													
Assumptions:		Inc in MU-A		Inc in MU-C	Inc in MILC			Inc in MU-D					
Length of Trunkline Trench (ft)	6500	0	5900	ine in wore		12000	5500		11700	13200	10750	2500	
A. Removal and Loading	0.00	V	5,00	0		12000	5500	U	11700	15200	10/30	2.500	
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3,71	\$3,71	\$3.71	\$3.71
Subtotal Trunkline Removal and Loading Costs	\$24,136	\$5.71	\$21,908	\$3.71		\$44,560	\$20,423	\$5.71	\$43,446	\$49,016	\$39,918	\$9,283	\$3.71
B. Transport and Disposal Costs (NRC-Licensed Facility)	\$24,130	20	\$21,908	50	20	\$44,560	\$20,423	20	\$43,446	\$49,016	\$39,918	\$9,283	\$0
I. 3" HDPE Trunkline							and the second second						
		~	5900			13040	6000		11000	12200	10555		
Piping Length (ft)	6500	0		0	0	12000	5500	0	11700	13200	10750	0	(
Chipped Volume per Lft (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Chipped Volume (ft ³)	151	0	137	0	0	279	128	0	272	307	250	0	(
2. 6" HDPE Trunkline													<u> </u>
Piping Length (ft)	0	0	0		0	0		0	0	0	3000	0	
Chipped Volume per Lft (ft3/ft)	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0,083	0,083

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Wellfield Buildings and Equipment Removal and Disposal	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Chipped Volume (ft ³)	0	0	0	0	0	0	917	0	0	0	250	0	
3. 10" HDPE Trunkline													
Piping Length (ft)	13000	0	0	0	0	0	0	0	0	0	750	2000	
Chipped Volume per Lft (ft3/ft)	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.22
Chipped Volume (ft ³)	2854	0	0	0	0	0	0	0	0	0	165	439	
4. 12" HDPE Trunkline	and the second second												
Piping Length (ft)	0	0	11800	0	0	24000	0	0	0	0	0	2000	[
Chipped Volume per Lft (ft3/ft)	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0.309	0,309	0.309	0,309	0.30
Chipped Volume (ft ³)	0	0	3644	0	0	7411	0	0	0	0	0	618	
5. 14" HDPE Trunkline													1
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	
Chipped Volume per Lft (ft3/ft)	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.372	0.37
Chipped Volume (ft ³)	0	0	0	0	0	0	0	0	8712	9829	3165	0	(
6. 16" HDPE Trunkline													
Piping Length (ft)	0		0	0	0	0		0	23400	26400	8500	0	
Chipped Volume per Lft (ft3/ft)	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.486	0.48
Chipped Volume (ft ³)	0	0	0	0	0	0		0		12841	4134	0	
Total Trunkline Chipped Volume (ft ³)	3006			0	0	7691	1045	0	20366	22977	7964	1057	-
Volume for Disposal Assuming 10% Void Space (ft ³)	3306	0	4159	0	0	8460		0	22403	25275	8761	1162	(
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.7
Subtotal Trunkline Transport and Disposal Costs	\$19,075	\$0	\$23,996	\$0	\$0	\$48,812	\$6,635	\$0	\$129,260	\$145,831	\$50,549	\$6,704	\$
Subtotal Trunkline Decommissioning Costs per Wellfield	\$43,211	\$0	\$45,904	\$0	\$0	\$93,372	\$27,058	\$0	\$172,706	\$194,847	\$90,467	\$15,987	\$
Total Trunkline Decommissioning Costs	\$683,552												(
IV. Wellhead Cover Removal		· · · · · · · · · · · · · · · · · · ·		Inc in MU-C	Inc in MU-C			· · · · · · · · · · · · · · · · · · ·		<u></u>			[
Number of Production and Injection Wells	1	327	459		0	234	0	369	1163	451	365	347	,
Well Head Removal, Decontamination, and Disposal Cost	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.72	\$11.7
Subtotal Wellhead Removal Costs	\$12	\$3,833	\$5,380	\$0	\$0	\$2,743	\$0	\$4,325	\$13,631	\$5.286	\$4.278	\$4,067	\$C
Total Wellhead Cover Removal Costs	\$43,555			~		440 TE				40.000		4 11-11	,
													[
IV. Header Houses (Includes Booster Stations)				Inc in MU-C	Inc in MU-C								f
Total Quantity	5	18	20	0	0	4	3	15	45	10	6	9	[]
Average Header House Volume (ft ³)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	160
A. Removal													[
Total Volume (ft ³)	8000	28800	32000	0	0	6400	4800	24000	72000	16000	9600	14400	(
Demolition Cost	\$0,306	\$0.306	\$0,306	\$0,306	\$0,306	\$0.306	\$0.306	\$0.306	\$0,306	\$0.306	\$0.306	\$0.306	\$0.30
Subtotal Building Demolition Costs	\$2,446	\$8,807	\$9,786	\$0	\$0	\$1,957	\$1,468	\$7,339	\$22,018	\$4,893	\$2,936	\$4,404	\$
B. Survey and Decontamination													
Cost per Header House	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$62
Subtotal Survey and Decontamination Costs	\$3,107	\$11,185	\$12,428	\$0	\$0	\$2,486	\$1,864	\$9,321	\$27,962	\$6,214	\$3,728	\$5,592	\$
C. Disposal										107			(
Total Volume for Disposal - Incl. 33% Factor (cy)	98		391	0	0	78	59	293	880	196	117	176	
Volume for Disposal Assuming Void Space (cy)	108	387 \$42.17	430 \$42.17	0	0 \$42.17	86 \$42.17	65 \$42.17	323 \$42.17	968 \$42.17	215 \$42.17	129 \$42.17	194 \$42.17	\$42.1
Disposal Cost, Landfill (cy)	\$42.17			\$42.17					\$42.17	\$9,066	\$42.17		
Subtotal County Landfill Disposal Costs	\$4,554	\$16,319	\$18,132 500	\$0 500	\$0 500	\$3,626	\$2,741 500	\$13,620	\$40,817	\$9,066	\$5,440	\$8,180 500	\$
Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)	\$5.80	\$5,80	\$5,80	\$5,80	\$5.80	\$5,80	\$5.80	\$5,80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.8
11e (2) Disposal Cost (ft ³) Subtact 11(c) 2 Dimensil Cost	\$14,512	\$52,243	\$58.048	\$5.80 \$0	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$29,024	\$5.80	\$5.80	\$0.8 \$
Subtotal 11(e)2 Disposal Cost	\$14,512 \$24,619	\$52,243	\$58,048	\$0	\$0 \$0	\$11,610 \$19,679	\$8,707	\$43,536	\$130,608	\$29,024 \$49,197	\$17,414 \$29,518	\$26,122 \$44,298	\$
Subtotal Header House Removal and Disposal Costs per Wellfield	\$24,619	388,354	\$98,394	\$0	20	\$19,679	514,780	\$13,810	\$221,405	349,197	\$29,318	\$44,298	3
Total Header House Removal and Disposal Costs	3004,260												
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	\$200,908	\$578,371	\$694,419	\$0	\$0	\$229,757	\$121,519	\$487,168	\$1,643,530	\$526,861	\$296,053	\$312,990	\$1,40
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	\$5,092,978												(

Wellfield and Satellite Surface Reclamation	Mine Unit-A/B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	D-Extension	Mine Unit-I	Mine Unit-J	J-Extension
. Wellfield Pattern Area Reclamation										-
Pattern Area (acres)	37.9	63.9	15.0	44.6	157.6	56,1	9.3	52.7	52.7	0
*Assumes wellfield pattern area X 2										
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548			\$548	\$548	\$548	\$548	
Subtotal Pattern Area Reclamation Costs per Wellfield	\$20,746	\$35,007	\$8,215	\$24.437	\$86,302	\$30,746	\$5,071	\$28,840	\$28.884	5
Fotal Wellfield Pattern Area Reclamation Costs	\$268,248	ener in the second s								-
I. Wellfield Road Reclamation										
Road Construction										
Length of Wellfield Roads (1000 ft)	12.8	11.3	2.4	13.3	18		5	5	5	
Weltfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,416	\$1,416	\$1,416	\$1.416	\$1,416	\$1.416	\$1,416	\$1,416	\$1,416	
Subtotal Wellfield Road Reclamation Costs Total Wellfield Road Reclamation Costs	\$18,129	\$16,004	\$3,399	\$18,837	\$25,494	\$22,236	\$7,082	\$7,082	\$7,082	\$7,08
Iotal Weilheid Koad Reclamation Costs	\$132,427									
II. Laydown area reclamation										
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	1	
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0,6
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer	500	500	500	500	500	500	500	500	500	50
A. Ripping Overburden with Dozer Ripping Cost (per acre)	\$1.331	\$1,331	\$1.331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,33
Subtotal Ripping Costs	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1.331	
B. Topsoil Application with Scraper	\$1,031	1.1.1	\$1,351	\$1.551	\$1,331	\$1.3.51	\$1,551	\$1.551	\$1.551	\$1,55
Volume of Topsoil Removed (cy)	1081	1081	1081	1081	1081	1081	1081	1081	1081	108
Moving Materials (0% Grade)	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19	
Subtotal Topsoil Application Costs	\$1,284	\$1,284	\$1,284	\$1.284	\$1,284	\$1.284	\$1,284	\$1,284	\$1,284	
C. Discing and Seeding										
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	
Subtotal Discing/Seeding Costs	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	
Subtotal Surface Reclamation Costs per WF laydown area	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,163	\$3,16
Total Wellfield Laydown Area Reclamation Costs	\$31,630									
V. Fence Removal						and the second second				
Length of Fencing (ft)	0	18,694	14,060	0		29,540	9,680	0	9,977	1
Fence Removal Costs	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	
Subtotal Fence Removal Costs per Wellfield	\$0	\$6,580	\$4,949	\$0	\$6,486	\$10,398	\$3,407	\$0	\$3,512	S
fotal Fence Removal Costs	\$35,333						and the second			
UBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$42,038	\$60,754	\$19,726	\$46,437	\$121,445	\$66,543	\$18,723	\$39,085	\$42,641	\$10,24
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	\$467,638									
7. Satellite Area Reclamation	Satellite No.1	Satellite No.2	Satellite No.3	Se Plant						
Assumptions:	Satemic No.1	Sateline No.2	Sateline No.5	Serian						
Area of Disturbance (acres)	1	3	2.5	2						and the second
Average Depth of Stripped Topsoil (ft)	1	0.67	0,67	0.67						
Surface Grade: Level Ground								and the second second second		
Average Length of Topsoil Haul (ft)	1000	500	500	500						
A. Ripping Overburden with Dozer										
Ripping Cost (per acre)	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59						
Subtotal Ripping Costs	\$1,331.00	\$3,992.00	\$3,326	\$2.661						
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1613	3243	2702	2162						
Moving Materials (0% Grade) Subtotal Topsoil Application Costs	\$1.42	\$1.42 \$4,598	\$1.42 \$3,832	\$1.42 \$3.065				1		
C. Discing and Seeding	\$2,288	\$4,598	33,832	\$3.065						J
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548						
Subtotal Discing/Seeding Costs	\$548	\$1,643	\$1.369	\$1.095						
Subtotal Surface Reclamation Costs per Satellite	\$4,167	\$10,233	\$8,527	\$6.821						
Total Satellite Building Area Reclamation Costs	\$29,748	2.00000		Format						[
										(

quipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
Removal and Loading Costs					
A. Tankage	 Melline pure sector site of the sector			and a state of the s	
Number of Tanks	39	8	14	18	
Volume of Tank Construction Material (ft ³)	1629	162	290	397	290
Tank Removal Cost	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12
Subtotal Tankage Removal and Loading Costs	\$234,773	\$23,348	\$41,795	\$57,216	\$41,795
B. PVC/Steel Pipe					
PVC Pipe Footage	12996	1000	4000	4000	4000
Average PVC Pipe Diameter (inches)	3	3	3	3	
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023
Volume of Shredded PVC Pipe (ft ³)	303	23	93	93	93
Steel Pipe Footage	645	0	0	0	(
Average Steel Pipe Diameter (inches)	2	0	0	0	(
Volume (ft ³)	15	0	0	0	(
Pipe Removal Cost	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93
Subtotal PVC/Steel Pipe Labor & Equipment Costs	\$121,803	\$8,929	\$35,717	\$35,717	\$35,71
C. Pumps					
Number of Pumps	52	10	14	13	14
Average Volume (ft ³ /pump)	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft ³)	256.36	49.3	69.02	64.09	69.02
Pump Removal Cost	\$108.14	\$108.14	\$108.14	\$108.14	\$108.14
Subtotal Pump Removal and Loading Costs	\$27,722	\$5,331	\$7,464	\$6,930	\$7,464
D. Dryer					
Dryer Volume (ft ³)	885	0	0	0	(
Dryer Removal Cost	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71
Subtotal Dryer Removal Costs	\$13,017	\$0	\$0	\$0	\$(
E. RO and Degasser Units					
Number of RO Units (500 gpm)					
Current	0	0	2.5	0	
Planned	0	0	0	0	(
Number of Degasser Units					
Current	0	0	0	0	
Planned	0	0	0	0	(
RO/Degasser Average Volume (ft3/Unit)	250	250	250	250	250
RO and Degasser Removal Cost	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
Subtotal RO Unit Removal and Loading Costs	\$0	\$0	\$3,141	\$0	\$1,250
Subtotal Equipment Removal and Loading Costs per Facility	\$397,315	\$37,608	\$88,116	\$99,863	\$86,23
tal Equipment Removal and Loading Costs	\$709,133				

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Equip	ment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
I. T	ransportation and Disposal Costs (NRC-Licensed Facility)					
	Tankage					
	Volume of Tank Construction Material (ft ³)	1629	162	290	397	29
	Volume for Disposal Assuming Void Space (ft ³)	1792	178	319	437	319
	Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.3
	Subtotal Tankage Transportation and Disposal Costs	\$13,124	\$1,304	\$2,336	\$3,200	\$2,33
B						
	Volume of Shredded PVC Pipe (ft ³)	303	23	93	93	9
	Volume for Disposal Assuming Void Space (ft ³)	333	25	102	102	10
	Volume of Steel Pipe (ft ³)	15	0	0	0	
	Volume for Disposal Assuming Void Space (ft ³)	17	0	0	0	
	Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.7
	Subtotal PVC Pipe Transportation and Disposal Costs	\$2,019	\$144	\$589	\$589	\$58
C	. Pumps					
	Volume of Pumps (ft ³)	256.36	49.3	69.02	64.09	69.0
	Volume for Disposal Assuming Void Space (ft ³)	282	54	76	70	7
	Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.3
	Subtotal Pump Transportation and Disposal Costs	\$2,065	\$395	\$557	\$513	\$55
D						
	Dryer Volume (ft ³)	885	0	0	0	
	Volume for Disposal Assuming Dryer Remains Intact (ft ³)	885	0	0	0	
	Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.3
	Subotal Dryer Transportation and Disposal Costs	\$6,481	\$0	\$0	\$0	\$
E.						
	Volume of RO/Degasser Units (ft ³)	0	0	625	0	25
	Volume for Disposal Assuming Volume Reduction (ft ³)	0	0	687.5	0	27
	Transportation and Disposal Unit Costs	\$7.32	\$7.32	\$7.32	\$7.32	\$7.3
	Subtotal RO Unit Transportation and Disposal Costs	\$0	\$0	\$5,035	\$0	\$2,01
	ubtotal Equipment Transportation and Disposal Costs per Facility	\$23,689	\$1,843	\$8,517	\$4,302	\$5,49
T	otal Equipment Transportation and Disposal Costs	\$43,847				
п. н	ealth and Safety Costs	and the second				
	Radiation Safety Equipment Accounted for on G	WREST				
T	otal Health and Safety Costs					
			\$20.451	¢07 (222	0104.175	¢0: 72
	DTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FA		\$39,451	\$96,633	\$104,165	\$91,72
OT A	AL EQUIPMENT REMOVAL AND DISPOSAL COST	rs \$752,980				

	Central	Dryer	Satellite	Satellite	Satellite		Yellowcake	South	Suspended	Changehouse	Process/	Potable
Building Demolition and Disposal	Plant	Building	No. 1	No. 2	No. 3	Fab Shop	Warehouse	Warehouse	Walkway	and Lab	Fire Water	Water Bldg
I. Decontamination Costs												
A. Wall Decontamination												
Area to be Decontaminated (ft ²)	131,000	20,000	0	0	0	0	0	0	0	0	0	0
HCl Acid Wash, including labor (\$/ft2)	\$0,94	\$0.94	\$0.94	\$0.94	\$0.94		\$0.94	\$0.94	\$0.94	\$0,94	\$0,94	\$0,94
Subtotal Wall Decontamination Costs	\$123,600	\$18,870	\$0	\$0	\$0		\$0	\$0		\$0		\$0.54
B. Concrete Floor Decontamination	0.120,000	\$10,010	ΨŪ	Ç.	Q 0		00	\$ 0	40			\$ 0
Area to be Decontaminated (ft ²)	17,820	0	6,000	9,600	9,600	0	0	0	0	0	0	0
HCI Acid Wash, including labor (\$/ft2)	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0,53	\$0.53	\$0.53	\$0.53	\$0,53	\$0,53
Subtotal Concrete Floor Decontamination Costs	\$9,358	\$0	\$3,151	\$5.042	\$5.042		\$0	\$0		\$0.55	The second	\$0.55
C. Deep Well Injection Costs	\$7,550	00	45,151	\$3,042	\$5,042		40	90		4 0		ψŪ
Total kgals for Injection (1 gal used per ft2)	148.82	20	6	9.6	9.6	0	0	0	0	0	0	0
Deep Well Injection Unit Cost (\$/kgals)	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06
Subtotal Deep Well Injection Costs	\$157	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00		\$1.00		\$1.00
Subtotal Deep wen injection costs	\$133,115		\$3,157	\$5,052	\$5,052	\$0	\$0	\$0	and the second se	\$0	And the second	\$0
Total Decontamination Costs	\$176,086	\$10,091	\$5,157	\$3,032	\$5,052	\$ 0	φυ	4 0	90	90		30
	\$170,000											
II. Demolition Costs												
A. Building								· · · · · · · · · · · · · · · · · · ·				
Height of Building (ft)	24		24	25	25	25	14	19	0	14	21	35
Volume of Building (ft ³)	794,000	30,720	192,000	320,000	320,000	37,560	91,000	333,000	5,600	73000	16,500	6,300
Demolition Cost	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306	\$0.306
Subtotal Building Demolition Costs	\$242,805	\$9,394	\$58,714	\$97,856	\$97,856	\$11,486	\$27,828	\$101,831	\$1,712	\$22,323	\$5,046	\$1,927
B. Concrete Floor	an bio ann ann											
Area of Concrete Floor (ft ²)	23,760	500	8,000	12800	12800	0	6500	18000	0	5400	800	180
Demolition Cost	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84	\$5.84
Subtotal Concrete Floor Demolition Costs	\$138,782	\$2,921	\$46,728	\$74,765	\$74,765	\$0	\$37,967	\$105,138	\$0	\$31,541	\$4,673	\$1,051
C. Concrete Footing												
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	0	294	113	54
Demolition Cost	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76
Subtotal Concrete Footing Demolition Costs	\$13,415	\$1,946	\$7,784	\$9,847	\$9,847	\$0	\$7,017	\$11,677	\$0	\$6,396	\$2,462	\$1,168
Subtotal Demolition Costs per Building	\$395,002	\$14,261	\$113,226	\$182,468	\$182,468	\$11,486	\$72,812	\$218,646	\$1,712	\$60,260	\$12,181	\$4,146
Total Demolition Costs	\$1,549,566							n in the second second				
III. Disposal Costs												
A. Building								21 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Volume of Building (cy)	29407	1138	7111	11852	11852	1391	3370	12333	207	2704	611	233
Off-Site County Landfill	29407	1138	/111	11852	11852	1391	3370	12555	207	2704	611	233
	100	100	100	100	100	100	100	100	100	100	100	100
Percentage (%)	9704	100 375	100 2347	100 3911	3911	100 459	100 1112	100 4070	100 68	100 892	100	100
Total Volume for Disposal - Incl. 33% Factor (cy)	\$42.17			\$42.17	\$42.17	\$42.17	\$42.17	\$42.17		in the second		
Disposal Cost, Landfill (cy)		\$42.17	\$42.17						\$42.17	\$42.17	\$42.17	\$42.17
Subtotal County Facility Off-Site Disposal Costs B. Concrete Floor	\$409,204	\$15,832	\$98,951	\$164,919	\$164,919	\$19,357	\$46,899	\$171,618	\$2,886	\$37,622	\$8,504	\$3,247
	007(0	500	0000	10000	12000	1500	(500	10000	1104	2000	000	100
Area of Concrete Floor (ft ²)	23760	500	8000	12800	12800	1500	6500	18000	1186	3000	800	180
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft ³)	17820	375	6000	9600	9600	1125	4875	13500	889.5	2250	600	135
Volume of Concrete Floor (cy)	660	14	222	356	356	42	181	500	33	83	22	5
1. On-Site Concrete Disposal												
Percentage (%)	75	75	75	100	100	100	100	100	100	100	100	100

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	Central	Dryer	Satellite	Satellite	Satellite	Sat. No. 3	Yellowcake	South	Suspended	Changehouse	Process/	Potable
Building Demolition and Disposal	Plant	Building	No. 1	No. 2	No. 3	Fab Shop	Warehouse	Warehouse	Walkway	and Lab	Fire Water	Water Bldg
Volume for Disposal (cy)	495	10	167	356	356	42	181	500	33	83	633	5
Concrete Disposal On Site (cy)	\$9 08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08
Subtotal County Facility Off-Site Disposal Costs	\$4,492	\$95	\$1,513	\$3,227	\$3,227	\$378	\$1,639	\$4,538	\$299	\$756	\$5,748	\$45
2. NRC-Licensed Facility												
Percentage (%)	25	25	25	0	0	0	0	0	0	0	0	0
Volume for Disposal (ft ³)	4455	94	1500	0	0	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost (\$/ft ³)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal NRC-Licensed Facility Disposal Costs	\$32,626	\$687	\$10,985	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Concrete Floor Disposal Costs	\$37,118	\$782	\$12,498	\$3,227	\$3,227	\$378	\$1,639	\$4,538	\$299	\$756	\$5,748	\$45
C. Concrete Footing												
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	124	294	113	54
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	. 4	4	4	-4
Average Width of Concrete Footing (ft)	1	l	1	1	l'	1	l	l	1	l	l	1
Volume of Concrete Footing (ft ³)	2466	358	1431	1810	1810	0	1290	2147	496	1176	453	215
Volume of Concrete Footing (cy)	91	13	53	67	67	0	48	80	18	44	17	8
Concrete Disposal On Site (cy)	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08
Subtotal Concrete Footing Disposal Costs	\$829	\$120	\$481	\$608	\$608	\$0	\$434	\$722	\$167.	\$395	\$152	\$72
Subtotal Disposal Costs per Building	\$447,151	\$16,734	\$111,930	\$168,754	\$168,754	\$19,735	\$48,972	\$176,878	\$3,352	\$38,773	\$14,404	\$3,364
Total Disposal Costs	\$1,414,755											
IV. Health and Safety Costs Accounted for on GW REST					_							
IV. Health and Safety Costs Accounted for on OW REST												
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$975,268	\$49,886	\$228,313	\$356,274	\$356,274	\$31,221	\$121,784	\$395,524	\$5,064	\$99,033	\$26,585	\$7,510
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$3,140,407											

				Potable Water	Central Plant	Selenium	SRHUP	Vollman	Morton
Buildir	ng I	Demolition and Disposal		Tank Slab	Tank Slabs	Plant	#9 DDW	33-27 DDW	1-20 DDW
r n		ntamination Costs							
I. D		Wall Decontamination							
	•	Area to be Decontaminate	d (⁶²)	0	0	4,000	0	0	(
		HCl Acid Wash, including		\$0.94	\$0.94	\$0.94	\$0.94	\$0,94	\$0.94
		Subtotal Wall Decontamination		\$0.94	\$0.94	\$3,774	\$0.94	\$0.94	\$0.9
В		Concrete Floor Decontamination		20	30	\$3,774	20	20	2(
D.		Area to be Decontaminate	the second se	0	0	9,600	1260	1260	1260
	-	HCl Acid Wash, including		\$0.53	\$0.53	\$0.53	\$0.53	\$0,53	\$0.5
	-			\$0.53	\$0.53		\$662	\$662	
		Subtotal Concrete Floor Deco	ontamination Costs	\$0	20	\$5,042	\$002	\$002	\$662
C.	<u> </u>	Deep Well Injection Costs			0	10 (1.24	1.07	1.0
		Total kgals for Injection (0	0	13.6	1.26	1.26	1.20
	_	Deep Well Injection Unit		\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.00
		Subtotal Deep Well Injection		\$0	\$0	\$14	\$1	\$1	\$1
		tal Decontamination Costs p	er Building	\$0	\$0	\$8,830	\$663	\$663	\$663
Total I	Dece	ontamination Costs	and the second						
II. D	em	olition Costs	Internet and the second s			an an State and State			
A.		Building							in the state of the
		Height of Building (ft)		0	0	25	12	12	12
		Volume of Building (ft ³)		0	0	320,000	15120	15120	15120
		Demolition Cost		\$0,306	\$0,306	\$0.306	\$0,306	\$0,306	\$0,306
	s	Subtotal Building Demolition	Costs	\$0	\$0	\$97,856	\$4,624	\$4,624	\$4,624
B.		Concrete Floor		40	Ψ×	\$71,000	¢ 1,02 1	01,027	01,02
D.		Area of Concrete Floor (ft	2,	1256	7854	12800	1260	1260	1260
		Demolition Cost		\$5.84	\$5.84	\$5.84	\$5.84	\$5,84	\$5.84
	5	Subtotal Concrete Floor Dem	alition Costs	\$7,336	\$45,875	\$74,765	\$7,360	\$7,360	\$7,360
C		Concrete Footing		\$1,550	\$43,075	\$74,700	\$7,500	\$7,500	\$7,500
	-	Length of Concrete Footin	a (ft)	0	0	453	142	142	142
		Demolition Cost		\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76
	-	Subtotal Concrete Footing De	malition Costs	\$21.70	\$0	\$9,847	\$3,089	\$3,089	\$3,089
C.		tal Demolition Costs per Bui		\$7,336	\$45,875	\$182,468	\$15,073	\$15,073	\$15,073
Contraction of the local diversion of the local diversion of the local diversion of the local diversion of the		olition Costs	lang	\$7,550	\$45,075	\$102,400	\$15,075	\$15,075	\$13,073
TOTAL	Jem								
III. Di	ispo	osal Costs							
A.	. E	Building							
	1	olume of Building (cy)		0	0	11852	560	560	560
		Off-Site County Landfill					ana an ga d		
		Percentage (%)		100	100	100	100	100	100
		Total Volume for Disp	oosal - Incl. 33% Factor (cy)	0	0	3911	185	185	185
		Disposal Cost, Landfi	l (cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
	S	Subtotal County Facility Off-		\$0	\$0	\$164,919	\$7,792	\$7,792	\$7,792
B.		Concrete Floor							
		Area of Concrete Floor (ft	2)	1256	7854	12800	1260	1260	1260
		Average Thickness of Cor		0.75	0.75	0.75	0.75	0.75	0.75
		Volume of Concrete Floor		942	5890.5	9600	945	945	945
		Volume of Concrete Floor		35	218	356	35	35	35
-	1	. On-Site Concrete Disposa							
		Percentage (%)		100	100	100	100	100	100

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		Potable Water	Central Plant	Selenium	SRHUP	Vollman	Morton
Buildi	ing Demolition and Disposal	Tank Slab	Tank Slabs	Plant	#9 DDW	33-27 DDW	1-20 DDV
	Volume for Disposal (cy)	35	218	356	35	35	
	Concrete Disposal On Site (cy)	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.0
	Subtotal County Facility Off-Site Disposal Costs	\$317	\$1,980	\$3,227	\$318	\$318	\$3
	2. NRC-Licensed Facility						
	Percentage (%)	0	0	0	0	U	
	Volume for Disposal (ft ³)	0	0	0	0	0	
	Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.
	Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	\$0	\$0	\$0	
	Subtotal Concrete Floor Disposal Costs	\$317	\$1,980	\$3,227	\$318	\$318	\$3
0	C. Concrete Footing						
-	Length of Concrete Footing (ft)	0	0	453	142	142	ŀ
	Average Depth of Concrete Footing (ft)	4	4	4	4	4	
	Average Width of Concrete Footing (ft)	1	l	1	1	1	
	Volume of Concrete Footing (ft ³)	0	0	1810	568	568	5
	Volume of Concrete Footing (cy)	0	0	67	21	21	
	Concrete Disposal On Site (cy)	\$9.08	\$9 08	\$9.08	\$9.08	\$9.08	\$9.
	Subtotal Concrete Footing Disposal Costs	\$0	\$0	\$608	\$191	\$191	\$1
S	Subtotal Disposal Costs per Building	\$317	\$1,980	\$168,754	\$8,301	\$8,301	\$8,3
lotal	l Disposal Costs						
<u>v.</u> I	Health and Safety Costs Accounted for on GW REST						
UBT	TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$7,653	\$47,855	\$360,052	\$24,037	\$24,037	\$24,0
FOT A	AL BUILDING DEMOLITION AND DISPOSAL COSTS						

iscellaneous Reclamation				1			T	1	
CPF/Office Area Reclamation									
Concrete Pad= 0.3 acres								_	
Total Area = 10 acres									-
A. Asphalt									
Area of Asphalt (acres)	3.4								
Ripping Cost (per acre) Average Thickness (ft)	\$969.18 0.50								
					and the second second second				
Moving Materials (0% Grade)	\$1.188				· · · · · · · · · · · · · · · · · · ·				
Volume of Asphalt (cy) Disposal Cost	2.743	and the second se	<u></u>						
Subtotal Asphalt Ripping and Disposal Costs	\$130,524								
B. Ripping Overburden with Dozer	\$130,524								
Overburden Surface Area (acres)	10.6								
Ripping Cost (per acre)	\$1,330.59						-	-	
Subtotal Ripping Overburden Costs	\$1,550.39					<u></u>			a the contraction of the contract
C. Topsoil Application	\$14,004					ipennin er blannere		+	
						<u> </u>			
Area of surface disturbance (ft ²)	130680								
Average thickness of topsoil (ft)	0.5				lana ana ana ana ana ana ana ana ana ana				-
Average haul distance (ft)	2000								
Surface grade (%)	0%								-
Volume of Topsoil (cy)	2,420								
Moving Materials (0% Grade)	\$1.84			and the contract of the second			-		
Subtotal Topsoil Application Costs	\$4,448								
D. Discing/Seeding									-
Surface Area (acres)	13								-
Discing/Seeding Unit Cost (\$/acre)	\$548								
Subtotal Discing/Seeding Costs tal CPP/Office/Yard Area Reclamation	\$7,120						e de la companya de l		
tal CPP/Office/Yard Area Reclamation	\$156,156								
A structure construction with the construction of the structure of the		S	C. N. N		Sat No. 2 to				
Access Road Reclamation (includes culverts)	CPP/Office Area	Sat No. 1	Sat No. 3	Connecting Road	Sat No. 2 to Rancher Rd				
Access Road Reclamation (includes culverts) A. Assumptions	CPP/Office Area				Rancher Rd				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade	CPP/Office Area	0%	0%	0%	Rancher Rd				
Access Road Reclamation (includes culverts) A Assumptions Surface grade Length of Road (ft)	CPP/Office Area 5% 13200	0% 15840	0% 5280	0% 10560	Rancher Rd 0% 2640				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft)	CPP/Office Area 5% 13200 25	0% 15840 30	0% 5280 30	0% 10560 30	Rancher Rd 0% 2640 10				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (ares)	CPP/Office Area 5% 13200	0% 15840	0% 5280	0% 10560 30	Rancher Rd 0% 2640				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt	CPP/Office Area 5% 13200 25	0% 15840 30	0% 5280 30	0% 10560 30	Rancher Rd 0% 2640 10				
Access Road Reclamation (includes culverts) A Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (cares) B. Ripping and Hauling Asphalt Assumptions	CPP/Office Area 5% 13200 25 7.6	0% 15840 30	0% 5280 30	0% 10560 30 7.3	Rancher Rd 0% 2640 10 0.6				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (ares) B. Ripping and Hauling Asphalt Assumptions Assumptions	CPP/Office Area 5% 13200 25	0% 15840 30 10.9	0% 5280 30 3,6	0% 10560 30 7.3	Rancher Rd 0% 2640 10				
Access Road Reclamation (includes culverts) A Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Assumptions Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft)	CPP/Office Area 5% 13200 25 7.6 5500 0.5	0% 15840 30 10.9 0 0.5	0% 5280 30 3.6	0% 10560 30 7.3 0 0 0.5	Rancher Rd 0% 2640 10 0.6 0.6 0.0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$969.18	0% 15840 30 10.9	0% 5280 30 3.6 0 0.5 \$969.18	0% 10560 30 7.3 0 0 0.5	Rancher Rd 0% 2640 10 0.6 0.0 0.0 \$969.18				
Access Road Reclamation (includes culverts) A Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Assumptions Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft)	CPP/Office Area 5% 13200 25 7.6 5500 0.5	0% 15840 30 10.9 0 0 0.5 \$969.18	0% 5280 30 3.6 0 0.5	0% 10560 30 7.3 0 0 5 \$969.18	Rancher Rd 0% 2640 10 0.6 0.6 0.0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (% Grade)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$909.18 6111 \$1.84	0% 15840 30 10.9 0 0 0.5 \$96918 8800 \$1.84	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84	0%/ 10560 30 7,3 0 0 0,5 \$969,18 5867 \$1.84	Rancher Rd 0% 2640 10 0.6 0.0 0.5 \$969.18 489 \$1.84				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$969.18 6111	0% 15840 30 10.9 0 0.5 \$969.18 8800	0% 5280 30 3.6 0 0.0.5 \$969.18 2933	0%/ 10560 30 7,3 0 0 0,5 \$969,18 5867 \$1.84	Rancher Rd 0% 2640 10 0.6 0.0 0.5 \$969.18 489				
Access Road Reclamation (includes culverts) A. Assumptions Sturface grade Length of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$909.18 6111 \$1.84	0% 15840 30 10.9 0 0 0.5 \$96918 8800 \$1.84	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84	0%/ 10560 30 7,3 0 0 0,5 \$969,18 5867 \$1.84	Rancher Rd 0% 2640 10 0.6 0.0 0.5 \$969.18 489 \$1.84				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal	CPP/Office Area 5% 13200 25 7,6 5500 0,5 \$959,18 6111 \$1.84 \$18,575,08	0% 15840 30 10.9 0 5 \$969.18 8800 \$1.84 \$26,748.12	0% 5280 30 3.6 0.5 \$969.18 2933 \$1.84 \$8,916.04	0% 10560 30 7.3 0 0 0 5 \$969.18 5867 \$1.84 \$17,832.08 1000	Rancher Rd 0% 2640 10 0.6 0.0 0.0 5 \$969.18 489 \$1.84 \$1,486.01				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Assumptions Assumptions Assumptions Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acro) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average haul distance (ft)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$909.18 6111 \$18.4 \$18,575.08 0	0% 15840 30 10.9 0 0 5 \$969.18 8800 \$1.84 \$26,748.12 1000	0% 5280 30 3.6 0 0 5 \$96918 2933 \$1.84 \$8,916.04 1000	0% 10560 30 7.3 0 0 0.5 \$969.18 \$867 \$1.84 \$17,832.08 1000 14	Rancher Rd 0% 2640 10 0.6 0.0 0.5 \$969,18 489 \$1,84 \$1,486.01 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average hud distance (ft) Gravel Road Base Width (ft)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$969.18 6111 \$1.84 \$18,575.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 5 \$969.18 8800 \$1.84 \$26,748.12 1000 14	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84 \$8,916.04 1000 14	0% 10560 30 7,3 0 0,5 \$969.18 5867 \$1.84 \$17,832.08 1000 14 3,39	Rancher Rd 0%6 2640 10 0.6 				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal [Average Roud Distance (ft) Gravel Road Base Area (acres)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$999.18 6111 \$1.84 \$18,575.08 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09	0% 5280 30 3.6 0.5 \$969.18 2933 \$1.84 \$8,916.04 1000 14 1.70	0% 10560 30 7,3 0 0,5 \$969.18 5867 \$1.84 \$17,832.08 1000 14 3,39	Rancher Rd 0% 2640 10 0.6 0.6 0.0 0.5 \$969.18 489 \$1.84 \$1.486.01 0 0 0 0 0 0.0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (%) Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average haud distance (ft) Gravel Road Base Width (ft) Gravel Road Base Depth (ft)	CPP/Office Area 5% 13200 25 7,6 5500 0,5 \$969,18 6111 \$1.84 \$18,575,08 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 4 5.09 0.5	0% 5280 30 3.6 0 0 5 \$96918 2933 \$1.84 \$8,916.04 1000 14 1.700 0.5	0% 10560 30 7.3 0 0 0 5 \$969.18 5867 \$1.84 \$17,832.08 1000 14 3.39 0.5	Rancher Rd 0% 2640 10 0.6 0.0 0.0 0.5 \$969.18 489 \$1.84 \$1,486.01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Rupping Cost (per acre) Volume of Asphalt (cy) Moving Materials (V% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average haul distance (ft) Gravel Road Base Vidth (ft) Gravel Road Base New (hth (ft)) Gravel Road Base Neyth (ft) Volume of Aspda Base Neyth (ft) Volume of Road Base Neyth (ft) Volume of Road Base (cy)	CPP/Office Area 5% 13200 25 7.6 5500 0.5 \$969.18 6111 \$1.84 \$18,575.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107	0% 5280 30 3.6 0 0.5 \$969.18 2033 \$1.84 \$8,916.04 1000 14 1.70 0.5 (1369)	0% 0% 10560 30 7.3 0 0 0.5 \$969.18 \$867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738	Rancher Rd 0%6 2640 10 0.6 0.0 0.0 0.0 5 \$969.18 489 \$1,486.01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average Road Base Area (acres) Average Road Base Peth (ft) Volume of Road Base (cy) Moving Materials (0% Grade)	CPP/Office Area 5% 13200 25 7,6 5500 0,5 \$999,18 6111 \$1.84 \$18,575,08 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107 \$1.42	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84 \$8,916.04 1000 14 1.70 0.5 1369 \$1.42	0% 10560 30 7.3 0 0 0.5 \$969.18 \$5867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738 \$1.42	Rancher Rd 0% 2640 10 0.6 0.0 0.0 0.0 5(1.84 5(1.84 5(1.84 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Assumptions Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average Road Base Vidth (ft) Gravel Road Base Vidth (ft) Volume of Road Base (cy) Moving Materials (0% Grade) Subtotal Gravel Road Base Removal Carees) Average Road Base Rege (cy) Moving Materials (0% Grade)	CPP/Office Area 5% 13200 25 7,6 5500 0,5 \$999,18 6111 \$1.84 \$18,575,08 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107 \$1.42	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84 \$8,916.04 1000 14 1.70 0.5 1369 \$1.42	0% 10560 30 7.3 0 0 0.5 \$969.18 \$5867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738 \$1.42	Rancher Rd 0% 2640 10 0.6 0.0 0.0 0.0 5(1.84 5(1.84 5(1.84 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Area of road (acres) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (V% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Gravel Road Base Width (ft) Gravel Road Base Subtoth (ft) Volume of Road Base Suppl (ft) Volume of Road Base (cy) Moving Materials (0% Grade) Subtotal Gravel Road Base Removal Costs D. Ripping Overburden with Dozer	CPP/Office Area 5% 13200 25 7.6 5500 0.5 5500 0.5 5969.18 6111 51.84 \$18,575.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107 \$1.42 \$5.823	0% 5280 30 3.6 0 0 5 \$969.18 2933 \$1.84 \$8,916.04 1000 14 1.70 0.5 1369 \$1.42 \$1,941	0% 10560 30 7.3 0 0 0.5 \$969.18 \$5867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738 \$1.42 \$3,882 7.3	Rancher Rd 0%6 2640 10 06 00 00 5 \$969.18 489 \$1,486.01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Rupring Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Gravel Road Base Removal Average Road Base Peth (ft) Volume of Road Base (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base (cy) Moving Materials (0% Grade) Subtotal Gravel Road Base (cy) Moving Materials (0% Grade) Subtotal Gravel Road Base Removal Costs D. Ripping Overburden with Dozer	CPP/Office Area 5% 13200 25 7.6 5500 0.5 5500 0.5 \$9969.18 6111 51.84 \$18,575.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 0.5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107 \$1.42 \$5,823 10.9	0% 5280 30 3.6 0 0.5 \$969.18 2933 \$1.84 \$8,916.04 1000 14 1.70 0.5 1369 \$1.42 \$1,941 3.6	0% 10560 30 7.3 0 0 0.5 \$969.18 \$5867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738 \$1.42 \$3,882 7.3	Rancher Rd 0% 2640 10 0.6 0.0 0.0 0.0 0.5 \$969.184 \$1.84 \$1.486.01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
Access Road Reclamation (includes culverts) A. Assumptions Surface grade Length of Road (ft) Width of Road (ft) Width of Road (ft) Width of Road (ft) B. Ripping and Hauling Asphalt Assumptions Assumptions Average Haul Distance (feet) Average Thickness of Asphalt (ft) Ripping Cost (per acre) Volume of Asphalt (cy) Moving Materials (0% Grade) Subtotal Ripping and Hauling Asphalt C. Gravel Road Base Removal Average Road Base Vidth (ft) Gravel Road Base Vidth (ft) Volume of Road Base (cy) Moving Materials (0% Grade) Subtotal Gravel Road Base Removal Costs D. Ripping Overburden with Dozer Overburden Surface Area (acres) Ripping Overburden average Area (acres) Ripping Cost (per acre)	CPP/Office Area 5% 13200 25 7,6 5500 0,5 5500 0,5 5909,18 6111 6111 \$1.84 \$18,575,08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 15840 30 10.9 0 0 5 \$969.18 8800 \$1.84 \$26,748.12 1000 14 5.09 0.5 4107 \$1.42 \$5,823 10.9 \$1,330.59	0% 5280 30 3.6 0 0 0.5 \$96918 2933 \$1.84 \$8,916.04 1000 14 1.70 0.5 1369 \$1.42 \$1.42 \$1.42 \$1.42 \$1.42 \$1.42 \$1.42 \$1.330.59	0% 0% 10560 30 7.3 0 0 0.5 \$969.18 5867 \$1.84 \$17,832.08 1000 14 3.39 0.5 2738 \$1.42 \$3.882 7.3 \$1,330.59	Rancher Rd 0% 2640 10 0.6 0.0 0.0 0.0 0.5 \$9509.18 489 \$1.84 \$1,486.01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				

Miscellaneous Reclamation									
Topsoil Surface Area (ft ²)	330000	475200	158400	316800	26400				
Depth of Topsoil (ft)	0		0	510800	and the second se		and the second second second		
Volume of Topsoil (cy)	ő		0	0					
Moving Materials (0% Grade)	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42				
Subtotal Topsoil Application Costs	\$0	\$0	\$0	\$0	\$0		Security and the second strends of the		
F. Discing/Seeding									
Surface Area (acres)	7.6								
Discing/Seeding Unit Cost (\$/acre)	\$548		\$548	\$548		-			
Subtotal Discing/Seeding Costs	\$4,149		\$1,992	\$3,983					
Multiplier for Projected Additions Subtotal Reclamation Costs per Access Road	0 \$22.724	×	0	\$35,374	· · · · · · · · · · · · · · · · · · ·				
Total Access Road Reclamation Costs	\$131,472		\$17,000	\$55,574	\$2,024				
III. Waste Water Pipeline Reclamation	SAT2 to SAT1 / Morton 1-20 WW Pipeline	SAT3 to SAT2 PSR	H-WF Rest. Bypass	Vollman WW Pipeline	SRHUP 9 WW Pipeline	SAT3 to SAT2	HUP to SR DDW Pipeline	Pipeline to Irrigator 1	SAT2 to PSR
Length of Trench (ft)	24000	22000	2200	13000	4000	10950	9700	24000	560
A. Removal and Loading		The second s							1
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71	\$3.7
Subtotal Trunkline Removal and Loading Costs	\$89,119	\$81,693	\$8,169	\$48,273	\$14,853	\$40,661	\$36,019	\$89,119	\$20,79
B. Transport and Disposal Costs (NRC-Licensed Facility)					40.000				
1. 3" HDPE Trunkline									
Piping Length (ft)	24000	0	2200	0	4000	0		0	
Chipped Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.02
Chipped Volume (ft ³)	559	0	51	0	93	0	0	0	and the second second
2. 4" HDPE Trunkline				a - That Sau Thurse					Construction of the second second
Piping Length (ft)	0	- Service of all contractions are the service of th	0	13000	0	0	0		
Chipped Volume Reduction (ft3/ft)	0.038	0.038	0.038	0,038	0.038	0.038	0.038	0.038	0.03
Chipped Volume (ft ³)	0	846	0	500	0	0	0	231	
3. 6" HDPE Trunkline			0			100.50	0700		
Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0.083	0.083	0.083	0.083	0.083	0.083	9700 0,083	0.083	350
			0.085					and the second se	
Chipped Volume (ft ³) 4. 8" HDPE Trunkline	0	0	0	0	0	913	809	0	29
4. 8 HDPE Frunkline	0	0	0	0	0	0	0	24000	
Chipped Volume Recution (ft3/ft)	0,141	0,141	0,141	0,141	0,141	0.141	0.141	0.141	0.14
Chipped Volume	0.141	0.141	0.141	0.141	0.141	0.141	0.141	3391	0.14
Total Pipeline Disposal Volume	559	846	51	500	93	913	809	3622	29
Volume for Disposal Assuming Void Space (ft ³)	615	931	56	550	102	1004	890	3984	32
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5,77	\$5.77	\$5,77	
Subtotal Transport and Disposal Costs	\$3,548	\$5,372	\$323	\$3,173	\$589	\$5,793	\$5,135	\$22,987	
C. Discing/Seeding									
Width of Pipeline Trench (ft)	10	10	8	8	8	8	8	8	
Area of Pipeline Trench (acres)	5.5	5.1	0.4	2.4	0.7	2.0	1.8	4.4	
Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	
Subtotal Discing/Seeding Costs	\$3,017	\$2,766	\$221	\$1,308	\$402	\$1,101	\$976	\$2.414	\$56
Subtotal Reclamation Costs per Pipeline Total Pipeline Reclamation Costs	\$95,684	\$89,831	\$8,713	\$52,754	\$15,844	\$47,555	\$42,130	\$114,520	\$23,20
IV. Radium Settling Basin Reclamation	E. Radium Pond	W. Radium Pond							
*Cost estimates based on planned expenditures (June 2013)									
A. Soil Sampling and Monitoring	\$0	\$0							
*Soil Sampling and Characterization were Complete in 2011. B. Task Training and Access Control	\$3,657	\$3,657							
C. Subsoil Removal and Loading	\$3,657 \$15,687	\$3,657							
D. Site Backfill	\$13,687	\$13,087							
E. Revegetation	\$6,318	\$6,318	The second second second						
F. Transportation & Disposal to 11e (2) Facility	40,010	-0,210							

Highland 2013-14 Surety Estimate_Rev1.xlsx

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I Nome of Sapa for Degastroy I 32:3 32:5	Miscellaneous Reclamation								
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B. Leaker Calicule State Represent on the second				 					
C. Topol/Shool Application Image: Comparison of the Comparison	Subtotal Soil Sampling and Monitoring Costs								
Accurate and statuse of the status		\$5,000	\$0						
I Acrege ball danuel (h) 1000 300 0 I Statice grade (W) 500 0 0 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 500 10.336 I Topics (Statice No.12, Apr. 5 (Sty.) 500 10.336 I Topics (Statice No.12, Apr. 5 (Sty.) 500 10.336 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 500 10.336 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 500 10.336 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 510 10.436 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 510 10.436 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 510 10.436 I Statice Topics (Statice No.12, Apr. 5 (Sty.) 510 10.436 I Average Daph (In) 60 10.331 10.431 I Average Daph (In) 60 10.331 10.431 I Average Daph (In) 60 10.431 10.431 I Average Daph (In) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
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Impediatabilitation Comparison 9000 9036	Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cv)								
D Discing/Seeding 0	Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.E (\$/cy)	\$0.00	\$0,386						
Surface Area (server) 6 32	Subtotal Topsoil/Subsoil Application Costs per Reservoir	\$117.686	\$28,571						
Surface Area (server) 6 32	D Discing/Seeding								
Image: Discongreeding Costs 53:88 54:8 54:80 54:80 54:80 Babeta Discongreeding Costs 52:86 51:52 54:52 55:53<	Surface Area (acres)	6	32						
E. Well Abandoment <		\$548	\$548						
E. Well Abandoment <	Subtotal Discing/Seeding Costs	\$3,286	\$17,525						
Number of Wells 5 16 100 Abandonnent Cost 5275 52.75 100 Bandonnent Cost 533 533 100 100 Montoring Well Concert Peckad Disposel 510 533 533 100 100 Subtoal Remove and Dispose Casing (con free) 533 533 533 100 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
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Remove and Dispose Casing (op few (et)) 533 533 Monitoring Well Concrete Peckan Disposal 5110 5110 Stational Well Abandonnem Cost 51815 57.568 Total Purge Storage Reservoir 1519/3377 556.214 Total Purge Storage Reservoir Restanation Cost 1518/5377 556.214 VI. Itrigation Area Reclamation Itrigator No. 1.A Itrigator No. 2 A Itrigator No. 1.A Itrigator No. 2 B Plowing 52.000 52.000 B Plowing 52.000 52.000 A Itrigator No. 1.A Itrigator No. 2 52.000 B Plowing Unit Cost (Macro) 553 106 510 A Itrigator No. 2 2 2 510 B Plowing Unit Cost (Macro) 551 106 512.00 511.000 C Discong/Seeding Ion Cost (Macro) 551.000 551.200 551.000 551.000 C Discong/Seeding Coss 511.000 521.200 551.000 551.200 Subtoal Disci									
Image: Monitoring Woll Concrete Pecksal Disposal \$110 <td< td=""><td></td><td>\$33</td><td>\$33</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>		\$33	\$33						
Subtoal Well Abandoment Cost 51,815 \$7,588 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Subtoal Reclamation Costs per Reservoir S120.337 S56.214 Image: Storage Reservoir Reclamation Costs Image: Storage Reservoir Reclamation Costs S186.551 VI. Irrigitator Acrea Reclamation Irrigator No.2 Image: Storage Reservoir Reclamation Costs Image: Storage Reservoir Reser									
Total Pures Exervoir Reclamation Costs Sile 651									
VI. Irrigator Area Reclamation Irrigator No. 1A Irrigator No. 2 A. Irrigator Removal Costs \$2.000	Total Purge Storage Reservoir Reclamation Costs								
A. [trigaton Equipment Removal Costs \$2.000 \$2.00									
B. Plowing	VI. Irrigation Area Reclamation			 					
Assumptions: Assumption:	A. Irrigation Equipment Removal Costs	\$2,000	\$2,000						
Image: Plowing Unit Cost (Sfarer) Status Stat									
Irigation Area (acres) 55 106 10 Number of Cultivations 2 2 10 Subtotal Plowing Costs \$11,000 \$21,200 10 C. Discing/Seeding 10 10 10 Justice Costs \$11,000 \$21,200 10 10 C. Discing/Seeding Unit Cost (Sacre) \$548 \$548 10 10 Subtotal Reclimation Costs per Irrigation Area \$30,122 \$\$8,053 10 10 Subtotal Reclimation Costs per Irrigation Area \$124,375 10 10 10 VII. Potential Subsoil Mitigation for Purge Storage Reservoirs PSR-1 PSR-2 10 10 A Subsoil Reclimation Costs 6 32 10 10 10 Surface Area (acres) 6 32 10 10 10 10 B Subsoil Removal and Loading 6 32 10 10 10 10 A Subsoil Removal and Loading 10 14 14 10 10 10 10 10									
Number of Cultivations 2 2 Subtotal Plowing Costs \$11,000 \$21,200									
Subtoil Plowing Costs \$11,000 \$21,200			106	 		L			
C. Discing/Seeding			2						
Discng/Seeding Unit Cost (Sarer) 5548 5548 6 6 6 Subtotal Reclamation Costs per Irrigation Area 530,122 \$58,053 6 6 6 Total Irrigation Area Reclamation Costs per Irrigation Area 531,22 \$58,053 6 6 6 Total Irrigation Area Reclamation Costs per Irrigation Area 5124,375 6	Subtotal Plowing Costs	\$11,000	\$21,200	 				1	
Subtotal Discing/Seeding Costs \$30,122 \$88,053 Subtotal Reclamation Costs per Irrigation Arca \$43,122 \$81,033 <td>C. Discing/Secding</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	C. Discing/Secding								
Subtotal Reclamation Costs per Irrigation Area \$43,122 \$81,253 Image: State of the st									
Total Irrigation Area Reclamation Costs \$124,375 Image: State of the state									
VII. Determinis Subsoil Mitigation for Purge Storage Reservoirs PSR-1 PSR-2 A. Subsoil Removal and Loading 6 52 Depth (inches) 6 6 Depth (inches) 6 6 Volume for Removal (cy) 4.840 25,813 Liner and Subsoil Removal and Loading 55,12 6 Subtoal Removal and Loading 51,12 55,12 B. Subsoil Transportation and Disposal to 11 (c.2) Facility 1515,673 515,673 Subtoal Recoval Cost 573,573 54,045,724 Subtoal Recovarie Cost per Reservoir 578,373 54,177,795			\$81,253						
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A. Subsoil Removal and Loading 6 2 6 Surface Arcs (arcs) 6 6 6 Depth (inches) 6 6 6 Volume for Removal (cy) 4.840 25.813 6 Liner and Subsoil Removal Cost 55.12 6 6 Subtoal Removal and Loading 51.12 55.12 6 B. Subsoil Transportation and Disposal to 11.e.2) Facility 515.673 515.673 Subtoal Reclamation Costs per Reservoir 578.573 \$4.045.724 6	VII Potential Subsail Mitigation for Purge Storage Reservoirs	PSR-1	PSR.7			· · · · · · · · · · · · · · · · · · ·			
Surface Area (acres) 6 32 6 6 Depth (inches) 6	A Subsoil Removal and Loading	1.51-1	1.315-5				-		
Volume for Removal (cy) 4.840 25,813	Surface Area (acres)						1		
Volume for Removal (cy) 4.840 25,813	Depth (inches)		6	 			1	1	
Subtotal Removal and Loading \$24.763 \$132,071 B Subsoil Transportation and Disposal to 11c.(2) Facility 5156.73 I Disposal Cost \$156.73 Subtotal Disposal Cost \$758.573 Subtotal Reclamation Costs per Reservoir \$783.336	Volume for Removal (cv)								
B Subsoil Transportation and Disposal to 11c.(2) Facility Sile 73 Sile 7	Liner and Subsoil Removal Cost		\$5.12						
Disposal Cost \$156.73 \$156.73 \$167.73 Subiotal Disposal Cost \$758.573 \$4.045.724 \$100,000 Subiotal Reclamation Costs per Reservoir \$783.336 \$4.177.795 \$100,000		\$24,763	\$132,071						
Subtotal Reclamation Costs per Reservoir \$783,336 \$4,177,795	B Subsoil Transportation and Disposal to He.(2) Facility			 					
Subtotal Reclamation Costs per Reservoir \$783.336 \$4.177.795	Disposal Cost								
	Subioral Disposal Cost				· · ·				
10131 FUEPE STORE RESERVOIL MILIZATION LOSIS			34.177,795	 				<u> </u>	
	I otal rurge Storage Reservoir Mitigation Costs	34,901,131		 			L		

	1	
Miscellaneous Reclamation		
VIII. Revegetation of Exxon Reclaimed Lands		
Surface Area (acres)	217	
Assumptions:		
10% Resecting potential areas of erosion (\$/acre)	\$548	
Total Exxon Reclaimed Lands Revegetation Costs	\$11,884	
IX. Potential Ground Water Mitigation for Casing Leak Investigation and PSR-2		
A. CLI Investigation Costs	\$891.067	*Based on planned expenditures (June 2013)
B. Ground Water Punip and Treat Costs		
Area (12)	1.000.000	*Includes PSR-2. C-North and E-Wellfield Areas
Sand Thickness (ft)	20	
Porosity (%)	27%	
Affected ground water (kgal)	40.392	
Wellfield Pumping Cost	\$0.19	
Reverse Osmosis Unit Cost (\$/kgal)	\$0,58	
Bleed to Deep Disposal Well (%)	25%	
Brine Volume for Disposal	10,098	
DDW Disposal Cost(\$/kgal)	\$1.06	
Permeate Volume for Re-Use	30,294	
Satellite Pumping Cost (\$/kgal)	\$0,66	
Subtotal Ground Water Pump and Treat Costs	\$61,437	
C. Well Abandonment (CLI Shallow Wells)		
# of Monitoring Wells (Current)	151	
Average Well Depth (ft)	156	
# of Monitoring Wells (Planned)	21	
Average Well Depth (ft)	250	
Total Well Depth (ft)	28,806	
Well Abandonment (\$/ft)	2.75	
Small Site Grading and Seeding (\$/site)	55	
Remove and Dispose Casing (\$/well)	33	
Concrete Pedestal Disposal (\$/each)	110	
Subtotal Well Abandonment Costs	\$113,273	
Total CLI and PSR-2 Ground Water Mitigation Costs	\$1,065,776	
TOTAL MISCELLANEOUS RECLAMATION COSTS	\$7,283,590	
TOTAL MISCELLANEOUS RECLAMATION COSTS	\$7,283,590	

	A-Wellfield	B-Wellfield	C-Wellfield	C-22 Pattern	C Haul Drifts	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Pore Volume Calculations										N. I. I. C. MARK		line and an a	
Flare Factor	4.13	4.13	2,46	2	0	2.88	2.78	2.9	2.1	2.3	1.83	1.92	0
Wellfield Area (ft2)	148,600	676,550	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680	0
Wellfield Area (acres)	3.41	15.53	24.50	7.46	0.00	7.50	4.63	22.31	78.79	28.07	26.33	26.37	0.00
Affected Ore Zone Area (ft2)	148,600	676,550	1,067,056	325,000	0	326,750	201,509	971,941	3,431,990	1,222,583	1,146,959	1,148,680	0
Avg. Completed Thickness	15.0	15.0	16.0	15.0	0.0	17.0	17.0	16.0	16.0	16.0	20.0	15,0	
Porosity	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Affected Volume (ft3)	9,205,770	41,912,273	41,999,324	9,750,000	0	15,997,680	9,523,315	45,098,062	115,314,864	44,991,054	41,978,699	33,081,984	0
Kgallons per Pore Volume	18,592	84,646	84,822	19,691	0	32,309	19,233	91,080	232,890	90,864	84,780	66,812	0
Restoration Schedule (Based on Annua	al Water Balance/Schedule	Undate)											
Pre-Restoration Period (yrs)	0	0	0	0	0	0	0	0	6	1	1	6	0
Restoration Period (yrs)	0	0	2	2	2	2	2	5	7	4	6	3	0
Stability Period (yrs)	0	0	ī	1	1	ī	1	1	1	i	1	1	0
Total # of Years	0	0	3	3	3	3	3	6	14	6	8	10	0
End of Restoration (yrs)	13		, <u>,</u>	,	3	,	5		14	0	0	10	U U
End of Stability (yrs)	13												
Number of Header Houses per Wellfiel													
Current	a 5	18	20	0	0	4	3	15	45	10	6	9	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	5	18	20	0	0	4	3	15	45	10	6	9	0
Average Header House Volume (ft)		10	20	U	U	4	3	15	43	10	0	9	U
	Contraction of the second s												
Number of Wells (In Service) per Well	field			1. 1. 1.01.0			1 1000						
roduction Wells (P)		100	201	Inc in MU-C	and a resonant for the second state of the second		Inc in MU-D	1.10	150	177	101		
Current	0	133	201	0	0	91	0	140	459	166	131	114	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	133	201	0	0	91	0	140	459	166	131	114	0
Injection Wells (I)							1.000 C		and the second second				
Current	1	194	258	0	0	143	0	229	704	285	234	233	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	1	194	258	0	0	143	0	229	704	285	234	233	0
Restoration Wells (R)													
Current	0	0	18	0	0	0	0	0	14	0	0	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	0	18	0	0	0	0	0	14	0	0	0	0
Monitor Wells (M, MO, MU, etc.)							54.5 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)						
Current	7	64	85	0	0	50	0	59	113	74	34	45	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	40
Total Estimated	7	64	85	0	0	50	0	59	113	74	34	45	40
Other Wells (Pumping Wells, etc.)													
Current	0	1	0	0	0	4	0	0	0	4	2	0	0
Planned	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Estimated	0	1	0	0	0	4	0	0	0	4	2	0	0
Vellfield Refurbishment (I or P)													
Planned	0	0	5	0	0	0	0	10	180	15	47	18	0
Number of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	544	448	410	40
Total Number of In Service Wells	4605			_	-								
Well Completion Details													
Average Well Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540	540
Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5	5
		and a second second											
Wellfield Fencing			19604	0	0	14060	0	18426	29540	0680	0	9977	0
Length of Fencing (ft)	0	0	18694	0	0	14060	U	18420	29540	9680	0	9911	0

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Labor Costs		Rate (S)	Net Benefits*	Units	Source
Environmental Manager/RSO		\$46.00	\$64.40	hour	MSEC**
Restoration Manager		\$40.00	\$56.00	hour	MSEC
Environmental Tech/HPT		\$25.00	\$35.00	hour	MSEC
Operator/Laborer		\$26.00	\$36.40	hour	MSEC
Maintenance Tech		\$23.00	\$32.20	hour	MSEC
*Includes additional 40% net benefits based on InfoMine USA cost data for S **Mountain States Employers Council, 2012 Survey, Mining Industry Comp			tines - Western U.S. (Tat		
	ensation de Denema				
Utility Costs		Rate (\$)	Profit & Overhead	Units	Source
Electrical Costs Kilowatt to Horsepower		\$0.0597 0.746	included	kWhr Kw/HP	Actual Costs-2013 N/A
Efficiency - Downhole Pumps		80%	included	Percent	N/A
Efficiency - Surface Pumps		90%	included	Percent	N/A
Natural Gas - Satellite No. 2/Selenium Treatment Plant		\$25,656.44	included	year	Actual Costs-2012
Propane - Satellite No. 2/Selenium Treatment Plant		\$3,523.28	included	year	Actual Costs-2012
Propane - Satellite No. 3		\$69,132.09	included	year	Actual Costs-2012
Chemical & Material Costs		Rate (\$)	Profit & Overhead	Units	Source
Antiscalant for RO (Hypersperse)		\$3.9050	included	pound	Actual Costs-2013
Antiscalant for RO (ScaleTrol)		\$4.5177	included	pound	Actual Costs-2013
Sodium Tripolyphosphate		\$1.0893	included	pound	Actual Costs-2013
EDTA Tetrasodium Dihydrate Sodium Sulfide		\$1.8774 \$0.5520	included included	pound pound	Actual Costs-2013 Quote-2013
Hydrochloric Acid		\$0.1992	included	pound	Actual Costs-2013
Barium Chloride		\$0.7970	included	pound	Actual Costs-2013
Iron Aggregate		\$0.5516	included	pound	Actual Costs-2013
Silica Sand		\$0.1407	included	pound	Actual Costs-2011
Pea Gravel		\$0.0190	included	pound	Actual Costs-2013
Analytical Costs		Rate (\$)	Profit & Overhead	Units	Source*
Modified Guideline 8		\$249.00	included	analysis	Quote: 2012-13
Excursion Parameters (UCL)		\$30.00	included	analysis	Fee Schedule-2013
Restoration Progress Parameters (UCL + U + Se)		\$50.00	included	analysis	Fee Schedule-2013
Irrigator Fluid Irrigator Vegetation		\$245.00 \$270.00	included included	analysis analysis	Actual Costs-2012 Actual Costs-2012
Irrigator Soil	·	\$255.00	included	analysis	Actual Costs-2012
Irrigator Soil Water		\$150.00	included	analysis	Fee Schedule-2013
Other (Radon, Bioassay, etc.)		\$1,000.00	\$1,100.00	month	Cost Estimate
*All quotes, fee schedules and actual costs based on Energy Laboratories, Inc	., Casper. WY				
Equipment Costs		Rate (S)	Profit & Overhead*	Units	Source
Bandit 1290XP Trailer Mounted Brush Chipper		\$47.93	\$52.72	hour	Equipment Watch**
Bobcat S250 Skid Steer Loader		\$36.57	\$40.23	hour	Equipment Watch
Cat 320C L Trackhoe - 1.25 cu yd bucket		\$100.03	\$110.03	hour	Equipment Watch
Cat 416E Backhoe Cat 924H Loader - 2.4 cu yd bucket		\$34.97 \$52.93	\$38.47 \$58.22	hour hour	Equipment Watch Equipment Watch
Concrete Jaws Labounty - CP-60		\$18.51	\$20.36	hour	Equipment Watch
GEHL DL-8 Rough Terrain Lift Truck		\$56.44	\$62.08	hour	Equipment Watch
Manlift (JLG 600S)		\$47.54	\$52.29	hour	Equipment Watch
MIT Unit		\$30.09	\$33.10	hour	Equipment Watch
Pick-up Truck 3/4 ton 4X4		\$20.13	\$22.14	hour	Equipment Watch
Pulling Unit*** *Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No.	12 Section 12(b)	\$35.32	\$38.85	hour	Equipment Watch
**Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)	12, Section 12(0)				
***1 3/4 Ton 4x4 Truck with Hoist					·····
		Bata (ft)	Buefit & Originary	110:00	
Quoted Costs Deep Disposal Well - Plug & Abandonment Costs	<u> </u>	Rate (\$) \$13.62	Profit & Overhead included	Units foot	Source UIC Permit-2012
DDW MIT		\$31,625	included	well	Quote-2013
Well Replacements (Restoration)		\$14.763	included	well	Actual Costs-2013
Bellhole Refurbishment		\$5,530	included	bellhole	Contract-2012
Header House Refurbishment (Typical Wellfield)		\$32,000	included	header house	Actual Costs 2013
Header House Refurbishment (H-Wellfield)		\$10.000	included	header house	Actual Costs-2013
WDEQ/LQD Guideline No. 12 Costs	Appendix	Rate (\$)	Profit & Overhead*	Units	Source
Moving Materials: One-Way Distance 500 feet, 0% grade	Appendix C	\$1.080	\$1,188	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 1,000 feet, 0% grade	Appendix C	\$1.289	\$1.418	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 2,000 feet, 0% grade Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix C Appendix E	\$1.671 \$0.351	\$1.838 \$0.386	bcy lcy	Guideline-10/2012 Guideline-10/2012
Grading Operating Costs	Appendix G	\$75.25	\$82.78	acre	Guideline-10/2012
Fencing Removal	Appendix H	\$0.32	\$0.35	foot	Guideline-10/2012
Ripping Operating Costs (Asphalt)	Appendix I	\$881.07	\$969.18	асте	Guideline-10/2012
Ripping Operating Costs (Overburden)	Appendix 11	\$1,209.63	\$1,330.59	acre	Guideline-10/2012
Building Demolition - Mixture of Types	Appendix K	\$0.278	\$0.306	ft3	Guideline-10/2012

Building Demo Disposal (Average)	Appendix K	\$9.50	\$10.45	су	Guidelin	-10/2012
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	\$5.31	\$5.84	ft2	Guidelin	e-10/2012
Concrete (Footing) Demolition - 2' Thick, 3' Wide	Appendix K	\$19.78	\$21.76	linear foot	Guideline	-10/2012
Concrete Disposal On-Site	Appendix K	\$8.25	\$9.08	су	Guideline	-10/2012
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	\$3.00	\$3.30	foot	Guideline	e-10/2012
Well Abandonment: Monitor, Production, and Injection Wells	Appendix L	\$2.50	\$2.75	foot	Guideline	-10/2012
Incidental Costs: Small Site Grading and Seeding (<1000 sq. feet)	Appendix L	\$50	\$55	site	Guidelin	-10/2012
Incidental Costs: Capping	Appendix L	\$10	\$11	each	Guidelin	-10/2012
Incidental Costs: Site Location	Appendix L	\$10	\$11	site	Guidelin	e-10/2012
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	\$0.40	\$0.44	foot	Guidelin	-10/2012
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	\$30.00	\$33.00	well	Guidelin	-10/2012
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	\$100.00	\$110.00	each	Guideline	-10/2012
Scarification Costs	Appendix P	\$69.02	\$75.92	acre	Guidelin	e-10/2012
Revegetation Costs-Seed	Appendix Q	\$106.00	\$116.60	acre	Actual C	osts-2013
Revegetation Costs-Mulch	Appendix Q	\$91.88	\$101.07	acre	Actual C	osts-2013
Revegetation Costs-Fertilizer	Appendix Q	\$300.00	\$330.00	acre	Actual C	osts-2013
Revegetation Costs-Total	Appendix Q	\$497.88	\$547.67	acre	Actual C	osts-2013
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guidline No.	12, Section 12(b)					
Construction & Demolition Debris Transportation & Disposal Costs						
Building Volume for Disposal	0.33					
Void Factor (for disposal)	1.1					
	Disposal (S/ton)	C&D (cy/ton)	Tranport (\$/load)	C&D (cy/load)	Total (\$/cy)	Total (\$/ft3
C&D Debris (county landfill)						
	\$62.00	2	\$335.00	30	\$42.17	\$1.56
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie	ion and disposal cos	ts include profit an	d overhead of service pr	· · · · · · · · · · · · · · · · · · ·		
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal	ion and disposal cos eld Guide, FEMA 32	ts include profit an	d overhead of service pr	· · · · · · · · · · · · · · · · · · ·		
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand, etc.	ion and disposal cos eld Guide, FEMA 32	ts include profit an	d overhead of service pr	· · · · · · · · · · · · · · · · · · ·		
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal	ion and disposal cos eld Guide, FEMA 32	ts include profit an	d overhead of service pr	· · · · · · · · · · · · · · · · · · ·		/ton and 0.33
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand, etc. Load Correction Factor: Process materials, etc. White Mesa	ion and disposal cos eld Guide, FEMA 32	ts include profit an	d overhead of service pr	· · · · · · · · · · · · · · · · · · ·		/ton and 0.33
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand. etc. Load Correction Factor: Process materials. etc.	ion and disposal cos eld Guide, FEMA 32 1.1 0.42	ts include profit an 0. September 2010	d overhead of service pr	ovider. Conversion	factors of 2 cy	/ton and 0.33
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand, etc. Load Correction Factor: Process materials, etc. White Mesa	ion and disposal cos eld Guide, FEMA 32 1.1 0.42 Disposal (\$/ton)	ts include profit an 0, September 2010 Disposal (\$/cy)	d overhead of service pr	ovider. Conversion	factors of 2 cy	/ton and 0.33 Total (\$/ft3
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11c.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand, etc. Load Correction Factor: Process materials, etc. White Mesa Type 1: Soil, sand, gravel, rock, concrete rubble.etc.	ion and disposal cos ld Guide, FEMA 32 1.1 0.42 Disposal (\$/ton) \$138.97	ts include profit an 0, September 2010 Disposal (\$/cy) \$152.87	d overhead of service pr). Volume (cy) 13.0	Tranport (\$/cy) \$247.95	factors of 2 cy Total (\$/cy) \$400.82	/ton and 0.33 Total (\$/ft3 \$14.85
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie Ile.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand. etc. Load Correction Factor: Process materials. etc. White Mesa Type I: Soil. sand, gravel. rock. concrete rubble.etc. Type II: Process material, pumps, motors. etc. Type II: Chipped piping Pathfinder	ion and disposal cos Id Guide, FEMA 32 1.1 0.42 Disposal (\$/ton) \$138.97 \$160.08	bisposal (\$/cy) \$152.87 \$67.23	d overhead of service pr). Volume (cy) 13.0 24.7	Tranport (\$/cy) \$247.95 \$130.50	factors of 2 cy Total (\$/cy) \$400.82 \$197.73	/ton and 0.33 Total (\$/ft3 \$14.85 \$7.32
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand, etc. Load Correction Factor: Process materials, etc. White Mesa Type I: Soil. sand, gravel, rock, concrete rubble.etc. Type II: Process material, pumps, motors, etc. Type II: Chipped piping	ion and disposal cos Id Guide, FEMA 32 1.1 0.42 Disposal (\$/ton) \$138.97 \$160.08	bisposal (\$/cy) \$152.87 \$67.23	d overhead of service pr). Volume (cy) 13.0 24.7	Tranport (\$/cy) \$247.95 \$130.50	factors of 2 cy Total (\$/cy) \$400.82 \$197.73	/ton and 0.33 Total (\$/ft3 \$14.85 \$7.32
*Transportation and disposal costs based on actual costs (2013). Transportat to account for air space in buildings based on FEMA - Debris Estimating Fie 11e.(2) Byproduct Material Transportation & Disposal Load Correction Factor: Soil. sand. etc. Load Correction Factor: Process materials, etc. White Mesa Type I: Soil. sand, gravel, rock, concrete rubble.etc. Type II: Process material, pumps, motors, etc. Type II: Chipped piping Pathfinder	ion and disposal cos ld Guide, FEMA 32 1.1 0.42 Disposal (\$/ton) \$138.97 \$160.08 \$160.08	ts include profit an 0, September 2010 Disposal (5/cy) \$152.87 \$67.23 \$67.23	d overhead of service pr Volume (cy) 13.0 24.7 36.4	Tranport (\$/cy) \$247.95 \$130.50 \$88.55	factors of 2 cy Total (\$/cy) \$400.82 \$197.73 \$155.78	/ton and 0.33 Total (\$/ft3 \$14.85 \$7.32 \$5.77

*Transportation and disposal costs based on contract amounts as adjusted annually. Transportation and disposal costs include profit and overhead of service provider and include all unloading and decontamination fees, waste tax, fuel surcharges, etc. Tranportation costs assume 1) one truck transports one 13-cy bin of Type I waste, 2) one truck transports one 24.7-cy bin of Type II process waste (including pumps, motors, etc.) and 3) one truck transports one 36.4-cy bin of Type II chipped piping waste.

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ROUNDWATER RESTORATION UNIT C	COSTS				
		-			
Vellfield Pumping					
Equipment					
Wellfield Pump Sizes		hp			ļ
Wellfield Pump Flow Rate		gpm			
kW to HP Conversion Factor	0.746				
Cost of Electricity	\$0.0597	kWhr			
Efficiency	80%				
Wellfield Pumping Cost	\$0.19	per kgal		<u> </u>	
Satellite Pumping		· · · · · · · · · · · · · · · · · · ·			
Equipment					
Satellite Pump Sizes	60	hp			
Satellite Pump Flow Rate		gpm		· · ·	1
kW to HP Conversion Factor	0.746				
Cost of Electricity	\$0.0597				
Efficiency	90%				
Satellite Pumping Cost		per kgal	-	1	
Satemie Fullping Cost		регкдаг			
Deep Disposal Well Injection					
Equipment					
Deep Disposal Well Pump Size	75	hp			
Deep Disposal Well Flow Rate		gpm			
kW to HP Conversion Factor	0.746			1	
Cost of Electricity	\$0.0597	kWhr		1	1
Efficiency	90%				
Reagent					
Antiscalant Cost (Scaletrol)	\$4.5177	ner ib			
Density of Water		ibs/gai			
Specific Gravity (Scaletrol)	1.284				
Antiscalant Cost (Scaletrol)		per gal			
	0.0000048	per gai			
Antiscalant Dose (ScaleTrol)					
Deep Disposal Well Cost		per kgal		·	<u> </u>
PSR2 & Irrigator					·
Equipment					
				+	
Feed Water Pump		hp		+	
Irrigator Pump		hp			ļ
Sampler		kW			
Irrigator Flow Rate		gpm			
kW to HP Conversion Factor	0.746				
Cost of Electricity	\$0.0597	kWhr			
Efficiency	90%				
PSR 2 & Irrigator Cost	\$0.37	per kgal			
					ļ
Total Groundwater Sweep Costs	<u>\$1.22</u>	per kgal			
Reverse Osmosis					
Equipment		İ			
System Capacity	250	gpm		1	<u> </u>
Unit Pump		hp		1	<u> </u>
Injection Pump		hp		<u> </u>	
Waste Pump		hp		1	
kW to HP Conversion Factor	0.746			+	<u> </u>
Cost of Electricity	\$0.0597				
Efficiency					
Reagents					<u> </u>
	0.0000120	lb/col			
Tripolyphosphate Usage Rate	0.00000130		<u> </u>	+	<u> </u>
Tripolyphosphate Cost	\$1.0893				ļ
EDTA Usage Rate	0.00000315				
EDTA Cost	\$1.8774			<u> </u>	
Antiscalant Cost (Hypersperse)	\$3.9050				
	9 34	lbs/gal			
Density of Water					
Density of Water Specific Gravity (Hypersperse) Antiscalant Cost (Hypersperse)	1.124 \$36.6061				

Antiscalant Dose (Hypersperse)	0.0000036	aal/aal	1	Τ.	
Sodium Sulfide Usage Rate	0.000030			·	
Sodium Suffide Cost	\$0.5520			+	
RO Cost (without Reductant)		per kgal	_		
RO Cost (with Reductant)	50.58	per kgal			
KO Cost (with Reductant)	30.07				
MIT Costs for Production Wells					
Equipment					+
Pulling Unit Hours		hrs/day			
Pulling Unit Cost		\$/hour			
MIT Unit Hours		hrs/day		+- · · · ·	
MIT Unit Cost	\$33.10				
Labor	\$33.10	5/11Out			
Required Hours	0	hrs/day			<u> </u>
Required Laborers		per day		<u> </u>	ł
Labor Cost		\$/hour			
Productivity		wells/day		Į	
MIT Cost for Production Wells	\$201.65	per well			<u> </u>
		ļ		··	
MIT Costs for Injection Wells					┣━━
Equipment	+			<u> </u>	<u> </u>
Pulling Unit Hours		hrs/day		+	·
Pulling Unit Cost		\$/hour		<u> </u>	
MIT Unit Hours		hrs/day			·
MIT Unit Cost	\$33.10	\$/hour			
Labor					
Required Hours		hrs/day			
Required Laborers	1	per day			
Labor Cost	\$32.20				ļ
Productivity		wells/day			ļ
MIT Cost for Injection Wells	\$130.60	per well			<u> </u>
				<u> </u>	ļ
Selenium Plant Operating Costs					
Plant Operation					
Selenium Plant Media Change		times/year			
Number of Columns in Plant	2	columns			
Reagents					
Barium Chloride	90.000	lb/year			
BaCl Cost	\$0.7970	\$/lb			
Materials					
Iron	12.000	lb/column			
Iron Cost	\$0.5516	\$/lb			
Sand	18.000	lb/column			
Sand Cost	\$0.14	\$/lb			
Gravel		lb/column			
Gravel Cost	\$0.0190	\$/lb			
Disposal					
ByProduct for Disposal	63	yd ³ /year			
Disposal Cost (incl. Transport)	\$157				T
Selenium Plant Operating Cost	\$157,852.16				
				+	
Booster Pump Operating Cost			·	+	}
Equipment					
Wellfield Pump Sizes	40	hp			<u> </u>
Number of Pumps Running (avg.)		per year		+	
Hours Running		per year per day			+
kW to HP Conversion Factor	0.746				+
Cost of Electricity	\$0.0597				
	\$0.0597				
Efficiency			_	+	
Booster Pump Operating Costs	\$34,658.36	per year			
				<u> </u>	
WELL ABANDONMENT UNIT COSTS					
		ļ			
Removal of Contaminated Soil Around Wells					
Equipment		l .		<u> </u>	
Cat 416 Backhoe Time	.1 0.25	hours		1	

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L	Cat 416 Backhoe Cost	\$38.47	per hour			
	abor					
	Radiation Technician	0.25	hours	1	1	·
+						
	Radiation Technician Cost		per hour			
	Operator		hours		1	
	Operator Cost	\$36.40	per hour	1	1	
	isposal			· · · · · · · · · · · · · · · · · · ·		
				<u> </u>		
	ByProduct Disposal		cubic yard			
	Disposal Cost (incl. Transport)	\$156.73	per cubic yard	1		
	Removal of Contaminated Soil Cost		per well			
	Removal of Containmated Son Cost	303.40	per wen			
DDV	W Pump Dismantling and Disposal					
L	abor					
+-	Number of Laborers	· · · · · ·	man dass	· · · · · · · · · · · · · · · · · · ·		
+	Number of Laborers		per day			
4-	Number of Pumps Dismantled	0.5	per day			
	Hours Per Day	8	hours	1		
	Laborers Cost	\$32.20			1	
In	lisposal				1	·
10			,		<u> </u>	
	Volume of DDW Pump	240	ft'			
	······································		per ft ³			
┶	ByProduct Disposal			4	ļ	L
\bot	DDW Pump Dismanteling and Disposal	\$2,788.03	per pump	1	<u></u>	L
Τ						
ŴF	LLFIELD RECLAMATION COSTS		· · · · · · · · · · · · · · · · · · ·	+	1	
				+	+	
1.				+		
	Ifield Piping Removal		<u> </u>	<u> </u>	l	
E	guipment					
7	Trackhoe	1	per day			
	Trackhoe Cost		per hour		<u>+</u>	
+-				+	ł	
+	Loader		per day			· · ·
	Loader Cost		per hour			
	Pickup Truck		per day			
-	Pickup Cost		per hour		1	
	Chipper Cost	\$52.77	per hour	+	<u> </u>	
┥.		\$32.72	per nour			
L	abor					
	Backhoe Operator	\$36.40	per hour		1	
1	Loader Operator		per hour	· • · · · · · · · · · · · · · · · · · ·	1	
+	Laborer		per hour			
-		332.20				
-	Hours Per Day	8	per day ft/day			
111	roductivity	1 1500	ft/day			
-	Piping Removal Cost	\$1.86	per foot of pipe			
+	Piping Removal Cost	\$1.86	per foot of pipe			
		\$1.86	per foot of pipe			
-	ng Reduction	\$1.86	per foot of pipe			
	ng Reduction 2" Pipe	\$1.86 0.0107	per foot of pipe			
	ng Reduction 2" Pipe 3" Pipe	0.0107	per toot of pipe			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 4" Pipe	\$1.86 0.0107	per toot of pipe			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 4" Pipe	0.0107 0.0233 0.0385	per foot of pipe			
-	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0834	per foot of pipe			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 8" Pipe	0.0107 0.0233 0.0385 0.0834 0.1413				
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe	0.0107 0.0233 0.0385 0.0834 0.1413 0.2196				
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088				
-	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088				
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723				
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088				
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723				
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723				
Pipi;	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe duction Pump Volume	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864				
Pipi;	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 14" Pipe 14" Pipe 14" Pipe 16" Pipe <td< td=""><td>\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 </td><td>inches</td><td></td><td></td><td></td></td<>	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
Pipi;	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 14" Pipe 16" Pipe 16" Pipe Diameter	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe Diameter Cubic Inch to Cubic Foot Conversion	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
Pipi;	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 14" Pipe 16" Pipe 16" Pipe Diameter	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe Diameter Cubic Inch to Cubic Foot Conversion	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
	ng Reduction 2" Pipe 2" Pipe 4" Pipe 4" Pipe 6" Pipe 10" Pipe 10" Pipe 11" Pipe 14" Pipe 14" Pipe 14" Pipe 14" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Inter Removal	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches			
	ng Reduction 2" Pipe 2" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Pipe Cution Pump Volume Length Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume nk Line Removal quipment	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches cubic feet			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe Dameter Cubic Inch to Cubic Foot Conversion Production Pump Volume nk Line Removal quipment Trackhoe	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches cubic feet			
	ng Reduction 2" Pipe 2" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Pipe Cution Pump Volume Length Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume nk Line Removal quipment	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches cubic feet			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Indeter Cubic Inch to Cubic Foot Conversion Production Pump Volume Indeter Trackloe Trackhoe Cost	\$1.86 0.0107 0.0233 0.0385 0.0385 0.0385 0.0385 0.0385 0.3723 0.4864 0.3088 0.3723 0.4864 0.4864 0.0006 0.433 0.0006 0.433	inches inches cubic feet			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 12" Pipe 14" Pipe 16" Pipe Cubic Inch to Cubic Foot Conversion Production Pump Volume Cubic Inch to Cubic Foot Conversion Production Pump Volume nk Line Removal quipment Trackhoe Trackhoe Cost Loader	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 0.3723 0.4864 0.0006 0.43 0.0006 0.43 0.0006 0.43	inches inches inches cubic feet per day per hour per day			
Pipi	ng Reduction 2" Pipe 2" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 12" Pipe 14" Pipe 16" Pipe 10 Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Interval Interval quipment Trackhoe Trackhoe Trackhoe Loader Loader Loader	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 0.3723 0.4864 0.0006 0.43 0.0006 0.43 1 \$110.03 1 \$58.22	inches inches cubic feet per day per hour per day per hour			
Pipi	ng Reduction 2" Pipe 2" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume nk Line Removal quipment Trackhoe Trackhoe Cost Loader Cost Pickup Truck	\$1.86 0.0107 0.0233 0.0385 0.0334 0.1413 0.2196 0.3088 0.3723 0.4864 0.3723 0.4864 0.3723 0.4864 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.43 0.0006 0.000700000000	inches inches inches cubic feet per day per hour per day per hour per day			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Inameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Loader Cost Loader Cost Pickup Truck Pickup Cost	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches inches cubic feet per day per hour per day per hour per day per hour			
Pipi	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Inameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Loader Cost Loader Cost Pickup Truck Pickup Cost	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches inches cubic feet per day per hour per day per hour per day per hour			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 2" Ottom Pump Volume Length Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Interement Trackhoe Trackhoe Cost Loader Pickup Truck Pickup Cost Chipper Cost	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches inches cubic feet per day per hour per day per hour per day			
	ng Reduction 2" Pipe 3" Pipe 4" Pipe 6" Pipe 8" Pipe 10" Pipe 12" Pipe 14" Pipe 16" Pipe 16" Pipe 16" Pipe 16" Diameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Inameter Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Cubic Inch to Cubic Foot Conversion Production Pump Volume Intere Loader Cost Loader Cost Pickup Truck Pickup Cost	\$1.86 0.0107 0.0233 0.0385 0.0834 0.1413 0.2196 0.3088 0.3723 0.4864 	inches inches inches cubic feet per day per hour per day per hour per day per hour			

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Loader Operator		per hour	
Laborer	\$32.20	per hour	
Hours Per Day	8	per day	
Productivity		ft/day	
Buried Piping Removal Cost	\$3.71	per foot of pipe	
Removal of Well Head Covers			
Volume of Well Head Cover (ft ³)	1.86	cubic feet	
Demolition Cost	\$0.306	per cubic ft	
Decontamination			
Acid Usage	4.1	pounds per wellhead cover	
Acid Cost	\$0.1992	per lbs	
Labor			
Radiation Tech	\$35.00	per hour	
Operator		per hour	
Productivity		wellheads per hour	
Disposal			
Void space	10%		
Transportation and Disposal Cost		per ft3	
Removal of Well Head Cover Cost		per well	
Incluoral of then field Cover Cost		per neu	
eader House Decontamination		┫────────────────────────	
Decontamination			 _
Acid Usage		pounds per header house	
Acid Cost	\$0.20	per pound	
Labor			
Radiation Tech		per hour	
Number of Operators		per day	
Operator		per hour	
Hours Per Day		per day	
Productivity	1	header house per day	
Header House Decontamination Cost	\$ 621.38	per header house	
leader House Heating			
Heater Power Usage	12.5	kW	
Days Used	180	days per year	
	1 100		
Electricity Cost	\$0.0597		
Electricity Cost Header House Heating Cost	\$0.0597	kWhr	
Electricity Cost Header House Heating Cost	\$0.0597		
Header House Heating Cost	\$0.0597 \$3,222	kWhr per year	
Header House Heating Cost	\$0.0597 \$3,222	kWhr per year	
Header House Heating Cost	\$0.0597 \$3,222	kWhr per year	
Header House Heating Cost LEED AND SATELLITE AND SURFA LEED AND SATELLITE AND SURFA LEED AND SURFA	\$0.0597 \$3,222	kWhr per year	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base	S0.0597 S3,222 CE RECLAMATI	kWhr per year ON	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth	\$0.0597 \$3,222 CE RECLAMATI	kWhr per year ON feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width	\$0.0597 \$3,222 CE RECLAMATI	kWhr per year ON feet feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade)	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42	kWhr per year ON feet feet feet bcy	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion	\$0.0597 \$3,222 CE RECLAMATI	kWhr per year ON feet feet feet bcy	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road	S0.0597 S3,222 CE RECLAMATI 0.25 10 \$1.42 0.04	kWhr per year ON feet feet feet bcy	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76	kWhr per year ON feet feet bcy per acre	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$776 25	kWhr per year ON feet feet bcy per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion	\$0.0597 \$3,222 CE RECLAMATI 0.25 0.25 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05	kWhr per year ON feet feet feet bcy per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acreage Width Acreage Width Cubic Scarification Costs Average Width Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Costs Cubic Scarification Cubic Scarificati	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 2.25 2.29568E-05 \$83	kWhr per year ON feet feet feet bcy per acre feet per acre	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67	kWhr per year ON feet feet feet bcy per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 2.29568E-05 \$83 0.67 \$548	kWhr per year ON feet feet feet bcy per acre feet per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet bcy per acre feet per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acreage Width Acreage Width Acreage Width Acreage Width Acreage Width Discing/Seeding Costs Linear Feet for Unit Cost Wellfield Road Reclamation Cost	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost Wellfield Road Reclamation Cost	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost Wellfield Road Reclamation Cost QUIPMENT COSTS	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost Wellfield Road Reclamation Cost QUIPMENT COSTS	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost QUIPMENT COSTS ank Removal	\$0.0597 \$3,222 CE RECLAMATI 0.25 10 \$1.42 0.04 \$76 25 2.29568E-05 \$83 0.67 \$548 1000	kWhr per year ON feet feet feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification of Road Scarification Costs Average Width Depth Scarification Costs Integration Costs Integration Costs Uppet Discing/Seeding Costs Linear Feet for Unit Cost Weilfield Road Reclamation Cost QUIPMENT COSTS Integration Average	\$0.0597 \$3,222 CE RECLAMATI 0.25 0.25 0.25 0.04 \$1.42 0.04 \$776 2.5 2.29568E-05 \$83 0.67 \$548 1000 \$1,416.31 \$1,416.31 \$58.22	kWhr per year ON feet feet feet bey per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost QUIPMENT COSTS ank Removal	\$0.0597 \$3,222 CE RECLAMATI 0.25 0.25 0.25 0.04 \$1.42 0.04 \$776 2.5 2.29568E-05 \$83 0.67 \$548 1000 \$1,416.31 \$1,416.31 \$58.22	kWhr per year ON feet feet feet bey per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Vellfield Road Reclamation Gravel Road Base Average Depth Average Width Material Moved (0% Grade) Cubic Yard to Cubic Feet Conversion Scarification of Road Scarification Costs Average Width Acre to Sq. Foot Conversion Grading Cost Topsoil Depth Discing/Seeding Costs Linear Feet for Unit Cost Wellfield Road Reclamation Cost QUIPMENT COSTS ank Removal Equipment Loader	\$0.0597 \$3,222 CE RECLAMATI 0.25 0.25 0.25 0.04 51.42 0.04 576 2.5 2.29568E-05 \$83 0.67 \$548 1000 \$1,416.31 51,416.31 558.22 \$110.03	kWhr per year ON feet feet feet bcy per acre feet per acre feet	
Header House Heating Cost VELLFIELD AND SATELLITE AND SURFA Image: Control of the state	\$0.0597 \$3,222 CE RECLAMATI 0.25 0.25 0.25 0.04 \$1.42 0.04 576 2.29568E-05 \$83 0.67 \$548 0.00 \$1,416.31 51,416.31 558.22 \$110.03 \$52.29	kWhr per year ON feet feet feet bey per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet per acre feet	

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Labor					
Number of Operators	4				
Operator Cost		per hour			
Hours Per Day	8	per day			
Productivity	25	ft ³ /day	1		
Tank Removal Cost	\$144	per ft ³			
		· · · · · · · · · · · · · · · · · · ·			
Pipe Removal					
Equipment					-
Manlift	\$52.29	per hour			
Pickup		per hour			
Lift Truck	\$62.08	per hour			
Chipper		per hour		-	
Labor				+	
Number of Operators	4				
Operator Cost		per hour			
Hours Per Day		· · · · · · · · · · · · · · · · · · ·			
		per day			
Productivity		ft/day			
Pipe Removal Cost (Inside Buildings)	\$8.93	per ft			<u> </u>
Pump Removal					<u> </u>
Equipment					ļ <u></u>
Truck		per hour			
Skid Steer	\$40.23	per hour			
Labor					
Number of Operators	2				
Operator Cost	\$36.40	per hour			·
Hours Per Day		per day			
Productivity		ft ³ /day			1
					l
Pump Removal	\$108.14	per ft'			
Dryer Removal					
Equipment					
Truck	\$22.14	per hour			
Lift Truck	\$62.08	per hour			
Labor					
Number of Operators	4				· · · · · · · · · · · · · · · · · · ·
Operator Cost	\$36.40	per hour			1
Hours Per Day		per day			
		ft ³ /day			
Productivity					
Dryer Removal Cost	\$14.71	per ft ³			
O and Degasser Removal					
Equipment					1
Truck	\$22.14	per hour			1
Lift Truck		per hour			
Labor	302.08				
Number of Operators	2				+
Number of Operators					
Operator Cost	\$30.40	per hour per day			······
Hours Per Day					
Productivity	250	ft ³ /day			
RO and Degasser Removal Cost	\$5.02	per ft ³			•
nto and Degasser Actional Cost		per 11			
BUILDING COSTS					
Acid Wash Walls	+				
	+				+
Acid	+				<u> </u>
Acid Usage	0.05	per square foot			ļ
Acid Cost	\$0.20	per pound			<u> </u>
Equipment					
Manlift	\$52.29	per hour			
	1				
Labor Laborer		people		_	

Productivity		square feet per hour		<u> </u>	
Acid Wash Walls Cost	\$0.94	per square foot			
cid Wash Floors					
Acid					
Acid Usage		per square foot			
Acid Cost	\$0.20	per pound			
Labor					
Laborer	2	people			
Laborer Cost	\$32.20	per hour			
Productivity		square feet per hour			
Acid Wash Floors Cost		per square foot			
		per oquare root			
Cletrical Power			- 		
Pumping Costs for Operating DDWs, RO, and We	ellfield are included	in GW Rest Costs			
Satellite 2	inited are mended	I III O W RESI COSIS			
Miscellaneous Pumps. Fans, Sumps. etc.	22.5	нр			· · · ·
Lighting		kW (per square ft)			
kW to HP Conversion Factor	0.746			+	
Electricity Cost	\$0.0507	per kWhr		+	
	<u></u>				
Efficiency Factor				1	
Operating Hours Per Year		hours	_		ļ
Satellite 2 Power Cost	\$26,221	per year		<u> </u>	ļ
				L	
Satellite 3		ļ		<u> </u>	
Miscellaneous Pumps, Fans, Sumps, etc.	22.5				
Lighting		kW (per square ft)			
kW to HP Conversion Factor	0.746				
Electricity Cost	\$0.0597	per kWhr			
Efficiency Factor	90%				
Operating Hours Per Year	8760	hours			
Satellite 3 Power Cost	\$26.221	per year			
		· · ·			
Se Plant				1	
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	НР			
Lighting		kW			
kW to HP Conversion Factor	0 746	kW (per square ft)		-i	
Electricity Cost	\$0.0597	per kWhr			
Efficiency Factor	90%				
Operating Hours Per Year		hours			
Selenium Power Cost	337.019	per year		·	
				<u> </u>	<u>.</u>
DDW - Typical	·			.	
Miscellaneous Pumps, Fans, Sumps, etc.		HP		<u> </u>	
Lighting		kW			l
Heating		kW	assume or	peration only	6 mos/yr
kW to HP Conversion Factor		kW/hp		<u> </u>	
Electricity Cost		per kWhr		<u> </u>	
Efficiency Factor	90%				
Operating Hours Per Year	8760	hours			
DDW Electrical Cost	\$4,225	per year			
1ISCELLANEOUS RECLAMATION AND RI	ESTORATION CO	OSTS			
iner and Subsoil Removal Costs		· · · · · ·			
Equipment				1	i
Trackhoe Cost	\$ 110.03	per hour	-		
Loader Cost		per hour		+	
Labor		iper nour			
	26.40	per hour			
Operator					
Productivity		cubic yards/hour		<u> </u>	
Total Removal	\$ 5.12	per cubic yard	1	1	1

							High	land Water	Balance Pe	rmit 603												
							Assumes 9 I	Pore Volumes of Tre	-Jun-13 eatment (1 P.V. G Rev. 8	WS and 8 P.V. RO	E.											
Year		1	1	1	2	3	1 4	5	6	7		9	10	ш	12 2024	13	14	15	16 2028	17	18	19
Production Flows				2013	2014	2015	2016	2017	2018	2019	2020	9 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
																					_	
Total Production Flow (gpm)			A	5370	3825	2580	1755	1330	870		265	200	0	0	0	0	0	0	0	0	0	0
Total Production Bleed (gpm)				53.7	38.3	25.8	17.6	13.3	8.7	3.7	2.7	2	10	10	0	10	10	0	0	10	10	0
Misc. GWS Control Bleed (gpm)				40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Restoration Flows																-		10 M	20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			
MUC (gel) (RO)	PV With Flair (Kgal) 84,828	GWS PV to Finish O	RO PV to Finish 2	360	100																	
GWS (gal) Total Disposal (gal)				72	25																	
MUD (gal) (RO) GWS (gal)	32,311	0	1	50	20																	
Total Disposal (gal) MU D Ext. (gal) (RO)	19,235	٥	1	10 50	5 20																	
GWS (gal) Total Disposal (gal) MUT Ficali (RO)	91,086	0.7	7	10	5	400	1 400	400														
MUE (gal) GWS (gal) Total Disposal (gal)	24,	200	.21	30 30	24 25	95 100	100	100														
NU H(gal) (RO) GWS (gal) Total Disposal (gal)	90,870	1	8		400 95	400	400	300														
Total Disposal (gel) MU I (gel)(RO)	84,786	1			100 700	200 200	100	75 300	400	50												
MU I (gel)(RO) GWS (gel) Total Disposal (gel)					48 50	48 50	48 50	71 75	100	13			101	600	600	400						
MUF(gal)(RO) GWS (gal) Total Disposal (gal)	232,906	1								350 83 88	600 143 150	600 143 150	600 143 150	150	150	100						
MU J (gal)(RO) GWS (gal)	66,817	1	8							600 143	400	200										
Total Disposal (gal) NU K (gal)(RO) GWS (gal)	84,214	1						÷.		150	100	50	400	100	200	150						
Total Disposal (gal)			40									48 50	100	100	50 200	38	600					
MU K North (gal)(RO) GWS (gal) Total Disposal (gal)	78,568	1	8												48 50	450 107 113	150					
																		8.5				
Total Restoration Disposal (gpm) Restoratio Water From Smith Ranch (gpm)				122	210	250	250	250	100	250	250	250	250	250	250	250	150	0	0	0	0	0
Installed RO Capacity (gpm) (feed)	Feed (gpm)	Feed (Future)																				
	200 200 100 250																					
	250																					
Total RD Capacity (gpm)	250 1250	-																				
Deep Disposal Well Capacity (gpm)	Permitted	Current	Future								1											
Morton 1-20 (gpm) DDW 9 (gpm)	147 158 105	30 30 50		30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50	30 30 50
Volman 33-27 (gpm) PSR2 Evaporation (gpm) Irrigator Circle 2 (gpm)	103	20		20	20	20	20	20	20	20	20	20	20	20	20	20	20		20	20	20	20 180
Irrigator Circle 1 (gpm)		0	100	0	0	100	100	100	100	100	100	100	100	100	100	100	100		100	100	100	100
Total Available		310	100	310	310	410	410	410	410	410	410	410	410	410	410	410	410	410	410	7.1	410 6	410 5.2
HUP Resin Transfer Total Production Bleed (gpm)				6.4 53.7	11 38.3 10	11 2 25.8 10	9.5 17.6 10	11.2 13.3 10	11.9 8.7 10	12.4 3.7 10	12.9 2.7 10	12.9 2 10	12.9 0 10	12.9 0 10	12.9 0 10	12.9 0 10	0 10	0	0 10	0 10	0	0
Misc. GWS Control Bleed (gpm)				40	40	40	40	40	40	40	40 250	40 250	40 250	40	40 250	40 250	40 150	40	40	40	40	40 0