



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.

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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,



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.
<i>Ground Water Restoration – Site-Wide Costs</i>	
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.
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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
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cost adjustment for disposal of C&D debris. Net adjustment:
\$744,844 increase.

Miscellaneous Reclamation (MISC REC Sheet)

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 Water Mitigation (CLI)	Added investigation costs for Casing Leak Investigation (CLI) activities and abandonment costs associated with potential shallow well installations. Net adjustment: \$940,661 increase.
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Smith Ranch Project
WDEQ/LQD Permit to Mine No. 633 - 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)	\$69,172,968	\$82,473,177	\$13,300,209
<u>Groundwater Restoration - Wellfield Costs</u>			
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
<u>Groundwater Restoration - Site-Wide Costs</u>			
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

Cost Component	2012-13 Surety Estimate	2013-14 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)

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

Total Restoration and Reclamation Cost Estimate									
I.	Groundwater Restoration (GWR-WF and GWR-SITE Sheets)								\$82,473,177
II.	Well & Drill Hole Abandonment (WA Sheet)								\$17,539,778
III.	Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet)								\$4,997,354
IV.	Wellfield and Satellite Surface Reclamation (WF 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 Estimate								\$112,982,237
	Contractor Profit & Overhead (10%)¹						See Master Costs		
							Contingency (15%)²	15%	\$16,947,336
								TOTAL³	\$129,929,600
¹ , Per WDEQ/LQD Guideline No. 12, Section 12(b)									
² , Per WDEQ/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.									

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

Ground Water Restoration -Wellfield		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
I. Ground Water Sweep Costs															
Estimated PV's		0	1	1	0.6	1	1	1	1	1	1	0	1	0	1
Total kgals for GWS		0	110,785	152,825	71,530	137,426	52,669	84,209	78,562	136,376	190,435	0	149,139	0	104,736
Bleed to Deep Disposal Well (%)		100	100	100	100	100	100	100	100	100	100	100	100	100	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	\$1.90	\$1.90	\$1.90	\$1.90
Subtotal Ground Water Sweep Costs per Wellfield		\$0.00	\$210,639.42	\$290,571.56	\$136,001.75	\$261,292.90	\$100,141.43	\$160,109.54	\$149,372.70	\$259,296.49	\$362,080.78	\$0.00	\$283,563.24	\$0.00	\$199,138.25
Total Ground Water Sweep Costs		\$2,412,208													
II. Reverse Osmosis Costs															
Estimated PV's		0	4.5	4.5	3.5	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	0	4.5
Total Kgals for RO		0	498,533	687,713	417,256	618,417	237,011	378,941	353,529	613,692	856,958	0	671,126	0	471,312
Wellfield Pumping Cost		\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$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	\$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%	20%	20%	20%
Brine Volume for Disposal		0	99,707	137,543	83,451	123,683	47,402	75,788	70,706	122,738	171,392	0	134,225	0	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	\$1.06	\$1.06	\$1.06
Permeate Volume for Re-Use		0	398,826	550,170	333,805	494,734	189,608	303,152	282,823	490,954	685,566	0	536,900	0	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	\$0.66	\$0.66
Subtotal Reverse Osmosis & Disposal Costs per Wellfield		\$0.00	\$748,375.78	\$1,032,364.75	\$626,366.96	\$928,341.30	\$355,790.08	\$568,849.36	\$530,702.70	\$921,248.33	\$1,286,428.15	\$0.00	\$1,007,465.05	\$0.00	\$707,513.53
Total Reverse Osmosis Costs		\$8,713,446													
III. Reverse Osmosis with Chemical Reductant Costs															
Estimated PV's		1.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	0.0	3.5	0.0	3.5
Total kgals for RO		62,837	387,748	534,888	417,256	480,991	184,342	294,732	274,967	477,316	666,523	0	521,987	0	366,576
Wellfield Pumping Cost		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)		\$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	\$0.67
Bleed to Deep Disposal Well (%)		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
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	0	104,397	0	73,315
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	\$1.06	\$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	\$0	\$417,589	\$0	\$293,261
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	\$0.66	\$0.66
Subtotal RO with Chemical Reductant per Wellfield		\$100,224.86	\$618,456.28	\$853,144.21	\$665,522.26	\$767,179.43	\$294,024.23	\$470,096.00	\$438,571.67	\$761,317.81	\$1,063,101.70	\$0.00	\$832,567.14	\$0.00	\$584,687.79
Total Reverse Osmosis Costs		\$7,448,893													
IV. Mechanical Integrity Testing (MIT) Costs															
Pre-Restoration, Restoration and Stability Period (yrs)		2	8	11	7	10	13	14	15	18	19	0	7	0	17
Number of Production Wells		95	134	207	229	416	0	171	99	260	210	0	220	0	135
Number of MITs required per Well		0.4	1.6	2.2	1.4	2.0	2.6	2.8	3.0	3.6	3.8	0.0	1.4	0.0	3.4
MIT Cost per Production Well		\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65	\$201.65
Number of Injection Wells		160	233	280	371	835	0	280	175	398	380	0	420	0	250
Number of MITs required per Well		0.4	1.6	2.2	1.4	2.0	2.6	2.8	3.0	3.6	3.8	0.0	1.4	0.0	3.4
MIT Cost 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	\$130.60
Subtotal MIT Mine Unit		\$16,020.97	\$91,920.69	\$172,279.78	\$132,481.59	\$385,871.46	\$0.00	\$198,938.85	\$128,454.00	\$375,865.21	\$349,500.21	\$0.00	\$138,899.82	\$0.00	\$203,565.65
Total MIT Costs		\$2,193,798													
V. Wellfield Refurbishment Costs															
Well Replacement (#)		0	60	100	60	121	0	0	0	0	0	0	0	0	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	\$14,763
Bellhole Refurbishment (#)		0	7	11	14	0	0	0	0	0	0	0	0	0	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	\$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)															
# of Wells		49	50	52	90	81	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													

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Ground Water Restoration -Wellfield		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
B. Restoration Monitoring															
1	Sampling Prior to Start-up (MP Wells)														
	# of Wells	0	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 # samples	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, every 2 months)														
	# of Wells	68	50	52	90	83	42	51	53	69	90	0	70	0	44
	Total # samples	408	1800	1248	3240	3486	756	1530	954	2898	4320	0	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 Monitoring															
1	Beginning of stability (MP wells)														
	# of Wells	19	31	27	30	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	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	44	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 wells, 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	\$17,935.00	\$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	\$257,600.00	\$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															
	Number of Header Houses per Unit(s)	6	5	10	11	13	10	9	7	13	9	0	11	0	7
	Pre-Restoration and Restoration Period (yrs)	1	7	10	6	9	12	13	14	17	18	0	6	0	16
	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	\$3,222
	Subtotal Header House Heating Cost per Wellfield	\$19,331	\$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	\$3,168,682	\$4,852,018	\$3,381,918	\$5,684,158	\$1,630,203	\$2,343,377	\$2,240,601	\$5,909,163	\$4,698,158	\$0	\$2,699,750	\$0	\$2,671,135
	TOTAL WELLFIELD RESTORATION COSTS	\$37,487,235													

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Ground Water Restoration - Site Wide										
I. Building Utility Costs	CPP	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-27										
Total Building Utility Costs	\$5,135,104									
II. Deep Disposal Well Utility Costs	SR-1	SR-2	REY-1	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	\$4,223
Propane (\$/yr)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Natural Gas (\$/yr)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Years	18	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	\$76,019
Total Deep Disposal Well Utility Costs	\$684,170									
III. Booster Pump Operation Costs										
Restoration Period (yrs)	18									
Booster Pump Operating Cost (\$/yr)	\$155,962.62									
Total Booster Pump Operating Cost	\$2,807,327									
IV. Infrastructure, Equipment Maintenance, Replacement and Repair Costs										
Annual Maintenance Cost	\$92,320									
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									
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								
	\$/hr	\$64.40								
	Number of Restoration Managers	0.5								
	\$/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								

**Cameco Resources
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Well and Drill Hole Abandonment			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	Other
I. Well Abandonment (Wellfields)																	
A. Sealing Costs								Inc in MU-15									
Total # of Wells per Wellfield			308	479	652	750	1505	0	510	328	744	682	60	728	0	431	21
Production, Injection and Perimeter Well Average Depth (ft)			500	850	750	850	450	500	950	864	950	900	900	800	600	825	950
Well Abandonment (Sealing) Costs (\$/ft)			\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75
Subtotal Sealing Costs per Wellfield			\$423,500	\$1,119,663	\$1,344,750	\$1,753,125	\$1,862,438	\$0	\$1,332,375	\$779,328	\$1,943,700	\$1,687,950	\$148,500	\$1,601,600	\$0	\$977,831	\$54,863
B. Casing Removal and Disposal Costs																	
Total # of Wells per Wellfield (In Service)			308	479	652	750	1505	0	510	328	744	682	60	728	0	431	21
# of Previously Abandoned Wells Pending Release			124	100	70	88	121	0	128	11	89	4	0	19	0	0	0
Total # of Wells for Casing Removal and Disposal			432	579	722	838	1626	0	638	339	833	686	60	747	0	431	21
Remove and Dispose Casing (\$/well)			\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33
Subtotal Casing Removal and Disposal Costs per Wellfield			\$14,256	\$19,107	\$23,826	\$27,634	\$53,658	\$0	\$21,054	\$11,187	\$27,489	\$22,638	\$1,980	\$24,651	\$0	\$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	\$55,556
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	0	640	0	385	
Removal of Contaminated Soil Around Wells (\$/well)			\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield			\$21,791	\$36,490	\$50,163	\$56,402	\$117,247	\$0	\$38,541	\$23,415	\$56,231	\$50,420	\$0	\$54,692	\$0	\$32,901	
Total Contaminated Soil Removal/Disposal Costs			\$538,293														
III. Delineation Hole Abandonment																	
A. Drill Hole Plug and Abandonment																	
# of Drill Holes Pending Bond Release																	
2007-08			56														
2008-09			55														
2009-10			638														
2010-11			821														
2011-12			0														
2012-13			564														
# of Projected Drill Holes																	
2013-14			900														
Total # of Drill Holes			3064														
% of Drill Holes Requiring Bentonite Top 100 ft			20%														
Total Footage Requiring Abandonment (ft)			61,280														
Hole Abandonment (\$/ft)			\$3.30														
Subtotal Plug and Abandonment Costs			\$202,224														
B. Incidental Costs																	
Total # of Drill Holes			3064														
Site Location (\$/hole)			\$11														
Capping (\$/hole)			\$11														
Small Site Grading and Seeding (\$/site)			\$55														
Subtotal Incidental Costs			\$235,928														
Total Delineation Hole Abandonment			\$438,152														
IV. Waste Disposal Well Abandonment			SR-1	SR-2	SRIHUP #6	SRIHUP #7	SRIHUP #8	SRIHUP #10	REY-1	REY-2	REY-3						
A. Well Sealing																	
Total Depth of Well			10,097	9,996	9,600	9,900	9,700	9,550	9,950	9,950	9,950						
Sealing Cost Per Foot			\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62	\$13.62						
*Sealing costs per foot includes surface reclamation costs																	
Subtotal Plugging Costs per Well			\$137,521	\$136,146	\$130,752	\$134,838	\$132,114	\$130,071	\$135,519	\$135,519	\$135,519						
B. Pump Dismantling and Decontamination																	
Number of Pumps			2	2	2	2	2	2	2	2	2						
Pump Dismantling 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	2.875						
Volume of Tubing String (ft³)			193	192	207	212	207	205	191	191	191						
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 Tubing String Disposal Costs per Well			\$1,410	\$1,408	\$1,519	\$1,552	\$1,519	\$1,501	\$1,401	\$1,401	\$1,401						
Total Waste Disposal Well Abandonment Costs			\$1,271,295														
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS			\$17,539,778														

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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 27	Mine Unit 21	Mine Unit 7
I. Wellfield Piping															
	Number of Header Houses per Wellfield	6	5	10	11	13	10	9	7	13	9	0	11	0	7
	Length of Piping per Header House (ft)	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800
	*Based on 46 wells per header house with 300 ft pipeline per well														
	Approximate Total Length of Piping (ft)	82800	69000	138000	151800	179400	138000	124200	96600	179400	124200	0	151800	0	96600
A.	Removal and Loading														
	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	\$1.86	\$1.86	\$1.86
	Subtotal Wellfield Piping Removal and Loading Costs	\$153,731	\$128,109	\$256,218	\$281,840	\$333,083	\$256,218	\$230,596	\$179,352	\$333,083	\$230,596	\$0	\$281,840	\$0	\$179,352
B.	Transport and Disposal Costs (NRC-licensed Facility)														
	Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Chipped Volume Reduction (ft ³ /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	0.011
	Chipped Volume per Wellfield (ft ³)	888	740	1480	1628	1923	1480	1332	1036	1923	1332	0	1628	0	1036
	Volume for Disposal Assuming 10% Void Space (ft ³)	977	814	1628	1790	2116	1628	1465	1139	2116	1465	0	1790	0	1139
	Transportation and Disposal Unit Cost (\$/ft ³)	\$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	\$5.77
	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	\$6,572
	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	\$185,924
	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														
	Number of Production Wells	95	164	257	259	477	0	171	99	260	210	0	220	0	135
	Number of Injection Wells	160	263	330	401	896	0	280	175	398	380	0	420	0	250
	Number of Monitor Wells	52	50	62	90	130	0	59	53	79	91	60	85	0	44
1.	Pump Volume														
	Number of Production Wells with Pumps	57	98	154	155	286	0	103	59	156	126	0	132	0	81
	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	0.43	0.43
	Pump Volume per Wellfield (ft ³)	24.7	42.5	66.7	67.1	123.9	0.0	44.6	25.6	67.6	54.6	0.0	57.2	0.0	35.1
2.	Tubing Volume														
	Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	839	925	875	875	775	575	800
	*Based on average well depth minus 25 ft														
	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	343,200
	Diameter of Production Well Fiberglass Tubing (inches)	2	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	1.25
	Chipped Volume Reduction (ft ³ /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	0.011
	Chipped Volume per Wellfield (ft ³)	1563	4219	5045	6634	6844	0	5058	2941	7309	6389	563	6024	0	3680
	Volume of Pump and Tubing (ft ³)	1588	4261	5112	6701	6968	0	5103	2967	7377	6444	563	6081	0	3715
	Volume for Disposal Assuming Void Space (ft ³)	1746	4688	5623	7371	7665	0	5613	3263	8114	7088	619	6689	0	4087
	Transportation and Disposal Unit Cost (\$/ft ³)	\$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	\$5.77
	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	\$23,581
	Total 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	5400
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	\$3.71	\$3.71	\$3.71	\$3.71	\$3.71
	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	\$20,052
B.	Transport and Disposal Costs (NRC-licensed Facility)														
1.	3" HDPE Trunkline														
	Piping Length (ft)	5075	7600	4790	12565	0	0	0	0	0	0	0	0	0	0
	Chipped Volume per foot of pipe (ft ³ /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	0.0233
	Chipped Volume (ft ³)	118	177	112	293	0	0	0	0	0	0	0	0	0	0
2.	6" HDPE Trunkline														
	Piping Length (ft)	2410	10000	4820	7320	28170	2320	2288	3466	4800	6850	0	6500	0	0
	Chipped Volume per foot of pipe (ft ³ /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	0.0834	0.0834
	Chipped Volume (ft ³)	201	834	402	610	2349	193	191	289	400	571	0	542	0	0
3.	8" HDPE Trunkline														
	Piping Length (ft)	4100	0	1100	4240	4000	6266	1104	948	15980	5000	0	0	0	4000
	Chipped Volume per foot of pipe (ft ³ /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	0.1413	0.1413
	Chipped Volume (ft ³)	579	0	155	599	565	885	156	134	2258	707	0	0	0	565
4.	10" HDPE Trunkline														
	Piping Length (ft)	0	5200	3660	4680	6000	1400	0	1028	2800	2000	0	800	0	2000
	Chipped Volume per foot of pipe (ft ³ /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	0.2196	0.2196
	Chipped Volume (ft ³)	0	1142	804	1028	1317	307	0	226	615	439	0	176	0	439

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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 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	0
	Chipped Volume per foot of pipe (ft ³ /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	0.3088
	Chipped Volume (ft ³)			451	0	0	1627	0	333	0	885	1269	0	0	618	0	0
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 (ft ³ /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	0.3723
	Chipped Volume (ft ³)			276	0	0	0	0	2308	0	0	681	0	0	0	0	1489
7.	16" HDPE Trunkline																
	Piping Length (ft)			1440	0	0	3620	0	0	2010	2210	1420	0	0	0	0	0
	Chipped Volume per foot of pipe (ft ³ /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	0.4864
	Chipped Volume (ft ³)			700	0	0	1761	0	0	978	1075	691	0	0	0	0	0
8.	18" HDPE Trunkline																
	Piping Length (ft)			0	0	0	0	24170	0	2086	18600	7640	6550	0	25000	0	0
	Chipped Volume per foot of pipe (ft ³ /ft)			0.6155	0.6155	0.6155	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 ³)			0	0	0	0	14877	0	1284	11448	4702	4032	0	15388	0	0
	Total Chipped Volume (ft ³)			2325	2153	1472	5918	19108	4028	2608	14057	10617	5748	0	16723	0	2494
	Volume for Disposal Assuming Void Space (ft ³)			2558	2368	1620	6509	21019	4431	2869	15463	11678	6323	0	18395	0	2743
	Transportation and Disposal Unit Cost (\$/ft ³)			\$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	\$5.77
	Subtotal Trunkline Transport and Disposal Costs			\$14,759	\$13,663	\$9,347	\$37,555	\$121,275	\$25,566	\$16,553	\$89,218	\$67,379	\$36,482	\$0	\$106,135	\$0	\$15,826
	Trunkline Decommissioning Costs per Wellfield			\$33,604	\$41,884	\$27,134	\$84,213	\$192,143	\$53,416	\$16,553	\$153,079	\$110,323	\$70,087	\$0	\$180,401	\$0	\$35,878
	Total Trunkline Decommissioning Costs			\$998,715													
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	\$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	\$5,052
	Total Well Head Removal and Disposal Costs			\$84,121													
V.	Header Houses (Includes Booster Stations)																
	Booster Houses			0	0	1	1	6	0	3	0	1	0	0	0	0	0
	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																
	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																
	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	409	215	258	151	301	194	0	237	0	151
	Disposal Cost - Landfill (cy)			\$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	\$6,367
	Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)			500	500	500	500	500	500	500	500	500	500	500	500	500	500
	11e (2) Disposal Cost (ft ³)			\$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	\$14,926	\$14,829	\$55,146	\$29,024	\$14,829	\$20,317	\$40,634	\$26,122	\$0	\$14,926	\$0	\$20,317
	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	\$34,459
	Total Header House Removal and Disposal Costs			\$605,265													
	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													

**Cameco Resources
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Wellfield and Satellite Surface Reclamation		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
I. Wellfield Pattern Area, and Road Reclamation															
	Area (acres)	50.9	104.3	99.8	125.1	117.3	44.5	83.3	65.4	88.7	99.5	0.0	\$1.0	0.0	68.4
	*Assume wellfield pattern area X 2														
	Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548
	Subtotal Pattern Area and Road Reclamation Costs	\$27,865	\$57,111	\$54,679	\$68,524	\$64,231	\$24,393	\$45,610	\$35,828	\$48,567	\$54,504	\$0	\$44,361	\$0	\$37,471
	Total Wellfield Area Reclamation Costs	\$563,144													
II. Wellfield Road Reclamation															
	Road Construction														
	Length of Wellfield Roads (1000 ft)	6.2	10.1	11.2	92.4	19.8	13.6	9.6	2.8	12.7	16.2	0	16.2	0	16.2
	Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416
	Subtotal Wellfield Road Reclamation Costs	\$8,781	\$14,305	\$15,863	\$130,867	\$28,043	\$19,262	\$13,597	\$3,966	\$17,987	\$22,944	\$0	\$22,944	\$0	\$22,944
	Total Wellfield Road Reclamation Costs	\$252,671													
III. Laydown area reclamation															
	Area of Disturbance (acres)	1	1	2	2	1	1	2	2	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	0.67	0.67	0.67	0.67	0.67
	Surface Grade: Level Ground														
	Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	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	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331
	Subtotal Ripping Costs	\$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	\$1,331
	B. Topsoil Application with Scraper														
	Volume of Topsoil Removed (cy)	1,081	1,081	2,162	2,162	1,081	1,081	1,621	1,621	1,081	1,081	1,081	1,081	1,081	1,081
	Moving Materials (.0% Grade)	\$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	\$1.19
	Subtotal Topsoil Application Costs	\$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	\$1,284
	C. Discing and Seeding														
	Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548
	Subtotal Discing/Seeding Costs	\$548	\$548	\$1,095	\$1,095	\$548	\$548	\$822	\$822	\$548	\$548	\$548	\$548	\$548	\$548
	Subtotal Surface Reclamation Costs per WF laydown area	\$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	\$3,163
	Total Wellfield Laydown Area Reclamation Costs	\$53,766													
	SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$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	\$63,578
	TOTAL WELLFIELD SURFACE RECLAMATION COSTS	\$869,581													
IV. Fence Removal															
	Length of Fencing (ft)	16,487	11,580	7,388	25,047	7,074	0	23,271	23,271	21,887	21,595	0	19,732	0	8,674
	Fence Removal Costs	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35
	Subtotal Fence Removal Costs per Wellfield	\$5,803	\$4,076	\$2,601	\$8,817	\$2,490	\$0	\$8,191	\$8,191	\$7,704	\$7,601	\$0	\$6,946	\$0	\$3,053
	Total Fence Removal Costs	\$65,474													
V. Satellite Area Reclamation		SR-1	SR-2	REY											
	Assumptions:														
	Area of Disturbance (acres)	2.70	5.00	5.00											
	Average Depth of Stripped Topsoil (ft)	1	1	1											
	Surface Grade: Level Ground														
	Average Length of Topsoil Haul (ft)	1000	500	500											
	A. Ripping Overburden with Dozer														
	Ripping Cost (per acre)	\$1,330.59	\$1,330.59	\$1,330.59											
	Subtotal Ripping Costs	\$3,593	\$6,653	\$6,653											
	B. Topsoil Application with Scraper														
	Volume of Topsoil Removed (cy)	4356	8067	8067											
	Moving Materials (.0% Grade)	\$1.42	\$1.42	\$1.42											
	Subtotal Topsoil Application Costs	\$6,176	\$11,438	\$11,438											
	C. Discing and Seeding														
	Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548											
	Subtotal Discing/Seeding Costs	\$1,479	\$2,738	\$2,738											
	Subtotal Surface Reclamation Costs per Location	\$11,248	\$20,829	\$20,829											
	Total Satellite Building Area Reclamation Costs	\$52,906													
	TOTAL WELLFIELD AND SATELLITE SURFACE RECLAMATION COSTS	\$987,961													

**Cameco Resources
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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	10
		Volume of Tank Construction Material (ft³)	900	1340	300	560	260	164	164	397	397
		<u>Tank Removal Cost</u>	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12	\$144.12
		Subtotal Tankage Removal and Loading Costs	\$129,709	\$193,122	\$43,236	\$80,708	\$37,471	\$23,636	\$23,636	\$57,144	\$57,216
	B.	PVC/Steel Pipe									
		PVC Pipe Footage	4800	5000	0	6000	1500	0	0	4000	4000
		Average PVC Pipe Diameter (inches)	3	3	3	3	3	3	0	3	3
		<u>Shredded PVC Pipe Volume Reduction (ft3/ft)</u>	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
		Volume of Shredded PVC Pipe (ft³)	112	116	0	140	35	0	0	93	93
		Steel Pipe Footage	1100	0	0	0	0	80	0	0	0
		Average Steel Pipe Diameter (inches)	6	0	0	0	0	8	0	0	0
		Volume (ft³)	216	0	0	0	0	30	0	0	0
		<u>Pipe Removal Cost</u>	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93	\$8.93
		Subtotal PVC/Steel Pipe Removal and Loading Costs	\$52,682	\$44,646	\$0	\$53,575	\$13,394	\$714	\$0	\$35,717	\$35,717
	C.	Pumps									
		Number of Pumps	22	43	0	16	12	2	0	13	13
		Average Volume (ft³/pump)	4.93	4.93	0	4.93	4.93	4.93	4.93	4.93	4.93
		Volume of Pumps (ft³)	108	212	0	79	59	10	0	64	64
		<u>Pump Removal Cost</u>	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108
		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	\$6,920.70
	D.	Dryer									
		Dryer Volume (ft³)	0	0	1,000	0	0	0	0	0	0
		<u>Dryer Removal Costs</u>	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71	\$14.71
		Subtotal Dryer Dismantling and Loading Cost	\$0	\$0	\$14,709	\$0	\$0	\$0	\$0	\$0	\$0
	E.	RO Units									
		Number of RO Units (500 gpm)									
		Current	0	1	0	1	0	0	0	0.25	0
		Planned	0	0	0	0	0	0	0	1	1
		Number of Degasser Units									
		Current	0	0	0	1	0	0	0	0	0
		Planned	0	1	0	0	0	0	0	1	1
		RO/Degasser Average Volume (ft3/Unit)	250	250	250	250	250	250	250	250	250
		<u>RO and Degasser Removal Cost</u>	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
		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	\$2,512.43
		Subtotal Equipment Removal and Loading Costs per Facility	\$194,069	\$263,205	\$57,945	\$145,338	\$57,245	\$25,431	\$23,636	\$102,608	\$102,366
		Total Equipment Removal and Loading Costs	\$971,843								
II.	Transportation and Disposal Costs (NRC-Licensed Facility)										
	A.	Tankage									
		Volume of Tank Construction Material (ft³)	900	1340	300	560	260	164	164	397	397
		Volume for Disposal Assuming Void Space (ft³)	990	1474	330	616	286	180	180	436	437
		<u>Transportation and Disposal Unit Cost (\$/ft3)</u>	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
		Subtotal Tankage Transportation and Disposal Costs	\$7,250	\$10,795	\$2,417	\$4,511	\$2,095	\$1,318	\$1,318	\$3,193	\$3,200
	B.	PVC / Steel Pipe									

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Equipment Removal and Loading				CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2	Satellite 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	0
	Volume for Disposal Assuming Void Space (ft ³)			238	0	0	0	0	33	0	0	0
	Transportation and Disposal Unit Cost (\$/ft ³)			\$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 (\$/ft ³)			\$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	0
	Volume for Disposal Assuming Dryer Remains Intact (ft ³)			0	0	1000	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
	Total Dryer Transportation and Disposal Costs			\$0	\$0	\$7,323	\$0	\$0	\$0	\$0	\$0	\$0
E.	RO/Degasser Units											
	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									
	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								

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			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																	
A	Wall Decontamination																
	(Area to be Decontaminated (ft²))		10,810	15,900	9,600	0	1,152	\$76	4,826	12,000	0	0	0	0	720	700	
	[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	\$0.94	\$0.94	\$0.94	
	Subtotal Wall Decontamination Costs		\$10,199	\$15,002	\$9,058	\$0	\$1,087	\$543	\$4,553	\$11,322	\$0	\$0	\$0	\$0	\$679	\$664	
B	Concrete Floor Decontamination																
	(Area to be Decontaminated (ft²))		11,550	16,500	3,500	0	1,678	839	7,028	17,477	0	0	0	0	450	480	
	[HCl 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	\$0.53	\$0.53	
	Subtotal Concrete Floor Decontamination Costs		\$6,066	\$8,665	\$1,838	\$0	\$881	\$441	\$3,691	\$9,178	\$0	\$0	\$0	\$0	\$236	\$252	
C	Deep Well Injection Costs																
	Total Gals for Injection (1 gal used per ft²)		22,36	32.4	13.1	0	2.83	1,415	11,854	29,477	0	0	0	0	1.17	1.184	
	[Deep Well Injection Unit Cost (\$/gals)]		\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	
	Subtotal Deep Well Injection Costs		\$24	\$34	\$14	\$0	\$3	\$1	\$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	
Total Decontamination Costs			\$113,517														
II. Demolition Costs																	
A	Building																
	Height of Building (ft)		30	35	35	15	10	10	25	18	10	0	0	0	8	10	
	Volume of Building (m³)		346,500	577,500	122,500	120,000	16,780	8,390	175,700	314,586	8,320	0	0	0	3600	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	\$0.31	\$0.31	
	Subtotal Building Demolition Costs		\$105,960	\$176,400	\$37,401	\$36,696	\$5,131	\$2,366	\$53,729	\$96,200	\$2,544	\$0	\$0	\$0	\$1,101	\$1,468	
B	Concrete Floor																
	Area of Concrete Floor (ft²)		11,550	16,500	3,500	8,000	1,678	839	7,028	17,477	832	400	375	400	450	480	
	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	\$5.84	\$5.84	
	Subtotal Concrete Floor Demolition Costs		\$67,464	\$96,377	\$20,444	\$46,728	\$9,801	\$4,901	\$41,051	\$102,083	\$4,860	\$2,336	\$2,190	\$2,336	\$2,628	\$2,804	
C	Concrete Footing																
	Length of Concrete Footing (ft)		430	514	237	358	164	116	335	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	\$21.76	\$21.76	
	Subtotal Concrete Footing Demolition Costs		\$9,353	\$11,179	\$5,149	\$7,784	\$3,565	\$2,521	\$7,296	\$11,306	\$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	\$209,789	\$9,914	\$4,077	\$3,875	\$4,077	\$5,575	\$6,179	
Total Demolition Costs			\$1,921,408														
III. Disposal Costs																	
A	Building																
	Volume of Building (cu)		12833	21389	4537	4444	621	311	6507	11651	308	0	0	0	133	178	
	Off-site County Facility																
	Percentage (%)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	
	Total Volume for Disposal - Incl. 33% Factor (cu)																
	Volume for Disposal (cubic yards)		4235	7058	1497	1467	205	103	2147	3845	102	0	0	0	44	59	
	[Disposal Unit Cost (\$/cu)]		\$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 county facility off-Site Disposal Costs		\$178,576	\$297,626	\$63,133	\$61,844	\$8,648	\$4,324	\$90,551	\$162,128	\$4,288	\$0	\$0	\$0	\$1,855	\$2,474	
B	Concrete Floor																
	Area of Concrete Floor (ft²)		11,550	16,500	3,500	8,000	1,678	839	7,028	17,477	832	400	375	400	450	480	
	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	0.75	0.75	
	Volume of Concrete Floor (ft³)		8662.5	12375	2625	6000	1258.5	629.25	5271	13107.75	624	300	281.25	300	337.5	360	
	Volume of Concrete Floor (cu)		321	458	97	222	47	23	195	485	23	11	10	11	13	13	
1	Off-site County disposal																
	Percentage (%)		75	75	75	100	100	100	100	75	100	100	100	100	75	75	
	Volume for Disposal (cu)		241	344	73	222	47	23	195	364	23	11	10	11	9	10	
	[Disposal Unit Cost (\$/cu)]		\$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 county facility off-Site Disposal Costs		\$10,146	\$14,495	\$3,075	\$9,370	\$1,965	\$983	\$8,232	\$15,353	\$975	\$469	\$439	\$469	\$395	\$422	
2	NRC-Licensed Facility																
	Percentage (%)		25	25	25	0	0	0	0	25	0	0	0	0	25	25	
	Volume for Disposal (ft³)		2166	3094	656	0	0	0	0	3277	0	0	0	0	84	90	
	[Transportation and Disposal Unit 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 NRC-Licensed Facility Disposal Costs		\$12,571	\$17,959	\$3,809	\$0	\$0	\$0	\$0	\$19,022	\$0	\$0	\$0	\$0	\$190	\$522	
	Subtotal Concrete Floor Disposal Costs		\$22,717	\$32,454	\$6,884	\$9,370	\$1,965	\$983	\$8,232	\$34,375	\$975	\$469	\$439	\$469	\$885	\$944	
C	Concrete Footing																
	Length of Concrete Footing (ft)		430	514	237	358	164	116	335	529	115	80	77	80	85	88	
	Average Depth of Concrete Footing (ft)		4	4	4	4	4	4	4	4	4	4	4	4	4	4	

**Cameco Resources
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[illegible]

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[illegible]

**Cameco Resources
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[illegible]

**Cameco Resources
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Miscellaneous Reclamation											
I. CPP/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation											
	Concrete Pad= 0.3 acres										
	Total Area = 10.57 acres										
A.	Concrete Pad										
	Area of Concrete Pad (ft ²)									13068	
	Demolition Cost									\$5.84	
	Average Thickness of Concrete Floor (ft)									0.50	
	Volume of Concrete Floor (ft ³)									6,534	
	Volume of Concrete Floor (cy)									242	
	Concrete Disposal On Site (\$/cy)									\$9.08	
	Subtotal Concrete Pad Demolition and Disposal Costs									\$78,526	
B.	Gravel Road Base Removal										
	Average haul distance (ft)									1000	
	Gravel Road Base Area (acres)									8.0	
	Average Road Base Depth (ft)									0.5	
	Volume of Road Base (cy)									6453	
	Moving Materials									\$1.42	
	Subtotal Gravel Road Base Removal Costs									\$9,150	
C.	Ripping Overburden with Dozer										
	Overburden Surface Area (acres)									10.6	
	Ripping Cost (per acre)									\$1,330.59	
	Subtotal Ripping Overburden Costs									\$14,064	
D.	Topsoil Application										
	Area of surface disturbance (ft ²)									460426	
	Average thickness of topsoil (ft)									0.5	
	Average haul distance (ft)									2000	
	Surface grade (%)										
	Volume of Topsoil (cy)									8,526	
	Moving Materials									\$1.42	
	Subtotal Topsoil Application Costs									\$12,090	
E.	Discing/Seeding										
	Surface Area (acres)									10.57	
	Discing/Seeding Unit Cost (\$/acre)									\$548	
	Subtotal Discing/Seeding Costs									\$5,789	
	Total CPP/Office/Yard Area Reclamation									\$119,619	
II. 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	Access SRHUP 10 from MU-4	
A.	Assumptions										
	Surface grade	1%	5%	5%	0%	5%	0%	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	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	
	Average Thickness of Asphalt (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	Ripping Cost (per acre)	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18	
	Volume of Asphalt (cy)	3832	8793	4033	5867	4722	1389	556	4167	926	
	Moving Materials	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84	
	Subtotal Ripping and Hauling Asphalt	\$11,647	\$26,726	\$12,259	\$17,832	\$14,353	\$4,222	\$1,689	\$12,665	\$2,814	
B.	Gravel Road Base Removal										
	Average haul distance (ft)	1000	1000	1000	1000	1000	1000	1000	1000	1000	
	Gravel Road Base Width (ft)	30	20	10	20	20	20	20	20	20	
	Gravel Road Base Area (acres)	3.56	7.27	3.57	4.85	3.90	1.15	0.69	5.17	1.15	
	Average Road Base Depth (ft)	0.75	0.5	0.5	0.5	0.5	0	0	0	0	
	Volume of Road Base (cy)	4311	5862	2881	3911	3148	0	0	0	0	
	Moving Materials	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	
	Subtotal Gravel Road Base Removal Costs	\$6,112	\$8,312	\$4,085	\$5,546	\$4,464	\$0	\$0	\$0	\$0	
C.	Ripping Overburden with Dozer										
	Overburden Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	5.2	1.1	
	Ripping Cost (per Acre)	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	
	Subtotal Ripping Overburden Costs	\$6,321	\$14,504	\$6,653	\$9,677	\$7,789	\$2,291	\$916	\$6,873	\$1,527	
D.	Topsoil Application										

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Miscellaneous Reclamation											
	Average haul distance (ft)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Topsoil Surface Area (ft ²)	206920	474810	217798	316800	255000	75000	30000	225000	50000	
	Depth of Topsoil (ft)	0.3058	0.3058	0.3058	0.3058	0.3058	0.3058	0.3058	0.3058	0.3058	
	Volume of Topsoil (cy)	2344	5378	2467	3588	2888	849	340	2548	566	
	Moving Materials	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42	
	Subtotal Topsoil Application Costs	\$3,323	\$7,625	\$3,498	\$5,088	\$4,095	\$1,204	\$482	\$3,613	\$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	\$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	0	1	0	0	0	0	0	0	
	Subtotal Reclamation Costs per Access Road	\$30,005	\$63,137	\$58,467	\$42,126	\$33,907	\$8,660	\$3,464	\$25,980	\$5,773	
	Total Access Road Reclamation Costs	\$271,519									
III. Trunk Lines											
		Trunk Line #1 (CPP to MU-4)	Trunk Line #2 (CPP to SR-1)	Trunk Line #3 (MU-15 to SR-1) Included in MU 15 WF REC	Trunk Line #4 (O-Sand Pilot)	Trunk Line (SR-2 to CPP)	WF 4 to CPP - projected	Waste Transfer SR2 to MU-15	Waste Transfer SR2 to SRHUP 8	Waste Transfer SR1 to SRHUP 7	SR to HUP DDW Pipeline
	Length of Trench (ft)	7750	8500	0	5500	2500	10000	12000	10000	7000	9700
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	\$3.71
	Subtotal Trunkline Removal and Loading Costs	\$28,778	\$31,363	\$0	\$20,423	\$9,283	\$37,133	\$44,560	\$37,133	\$25,993	\$36,019
B	Transport and Disposal Costs (NRC-Licensed Facility)										
	1 2" HDPE Trunkline										
	Piping Length (ft)	7750	8500	0	22000	0	0	0	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107
	Chipped Volume (ft ³)	83	91	0	236	0	0	0	0	0	0
	1 4" HDPE Trunkline										
	Piping Length (ft)	0	0	0	0	15000	10000	12000	10000	7000	0
	Chipped Volume Reduction (ft ³ /ft)	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385	0.0385
	Chipped Volume (ft ³)	0	0	0	0	577	385	462	385	269	0
	2 6" HDPE Trunkline										
	Piping Length (ft)	7750	17000	0	0	0	0	0	0	0	9700
	Chipped Volume Reduction (ft ³ /ft)	0.0834	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	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088	0.3088
	Chipped Volume (ft ³)	0	1,853	0	0	0	0	0	0	0	0
	4 16" HDPE Trunkline										
	Piping Length (ft)	15500	11000	0	15500	15500	0	0	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.4864	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	0	7,539	7,539	0	0	0	0	0
	5 18" HDPE Trunkline										
	Piping Length (ft)	0	0	0	0	2320	0	0	0	0	0
	Chipped Volume Reduction (ft ³ /ft)	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
	Chipped Volume (ft ³)	0	0	0	0	1,428	0	0	0	0	0
	Total Volume Chipped (ft ³)	8,268	8,712	0	7,775	9,544	385	462	385	269	809
	Volume for Disposal Assuming Void Space (ft ³)	9,095	9,583	0	8,552	10,498	423	508	423	296	890
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft ³)	\$5.77	\$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	\$0	\$49,343	\$60,571	\$2,441	\$2,931	\$2,441	\$1,708	\$5,135
C	Discing/Seeding										
	Width of Pipeline Trench (ft)	4	4	4	4	4	5	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	\$548	\$548
	Subtotal Discing/Seeding Costs	\$390	\$427	\$0	\$277	\$126	\$629	\$754	\$629	\$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								
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										

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Miscellaneous Reclamation					
	Thickness of clay liner (ft)		1	0.5	
	Thickness of contaminated subsoil (ft)		1	0.5	
	Width of Pond (ft)		200	232	
	Length of Pond (ft)		100	432	
	Depth of Pond (ft)		10	20	
	Surface area of pond (ft ²)		20000	108864	
1.	Removal and Loading				
	Volume of Clay Liner (cy)		1481	4032	
	Clay Liner Removal and Loading Unit Cost (\$/cy)		\$5.12	\$5.12	
	Subtotal Liner Removal and Loading Costs		\$7,580	\$20,629	
2.	Transportation and Disposal				
	Volume of Clay Liner (ft ³)		1481	4032	
	Volume of Geotextile Liner (ft ³)		52	0	
	Volume of Geotextile Liner @ 40% void (ft ³)		87	0	
	Transportation and Disposal Unit Cost (\$/ft ³)		\$5.80	\$5.80	
	Subtotal Liner Transportation and Disposal Costs		\$9,103	\$23,405	
	Subtotal Liner Removal and Disposal Costs		\$16,683	\$44,034	
C.	Grade and Contour				
	Volume of Embankment Material (CY)		7,407	80,640	
	Average Grade (%)		0	0	
	Distance (ft)		50	100	
	Material Moving Unit Cost per WDEQ Guideline No 12, App E (\$/cy)		\$0.176	\$0.297	
	Subtotal Grade and Contour Costs		\$1,304	\$23,950	
D.	Topsoil Application				
	Area of surface disturbance (ft ²)		20000	108899	
	Average thickness of topsoil (ft)		1	1	
	Average haul distance (ft)		1000	1000	
	Surface grade (%)		0%	3%	
	Volume of Topsoil (cy)		741	4,033	
	Topsoil Unit Cost per WDEQ Guideline No 12, App C (\$/cy)		\$1.418	\$1.418	
	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 Reclamation Costs		\$23,136	\$78,897	
	Total Settling Basin/Ponds Reclamation Costs		\$102,033		
V.	Potential Ground Water Mitigation for Casing Leak Investigation				
A.	CLI Investigation Costs		\$93,577	*Based on planned expenditures (June 2013)	
B.	Ground Water Pump and Treat Costs				
	Subtotal Ground Water Pump and Treat Costs		\$0		
C.	Well Abandonment (CLI Shallow Wells)				
	# of Monitoring Wells (Current)		0		
	Average Well Depth (ft)		0		
	# of Monitoring Wells (Planned)		8		
	Average Well Depth (ft)		250		
	Total Well Depth (ft)		2,000		
	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		\$7,084		
	Total CLI Ground Water Mitigation Costs		\$940,661		
	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	1.16	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/Schedule Update)														
Pre-Restoration Period (yrs)	0	1	6	0	2	9	8	11	10	10	0	0	0	10
Restoration Period (yrs)	1	6	4	6	7	3	5	3	7	8	0	6	0	6
Stability Period (yrs)	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 (yrs)	18													
End of Stability (yrs)	19													
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													
Number of Wells (In Service) per Wellfield														
Production Wells (P)														
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)														
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)														
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.)														
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.)														
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
Total Estimated	1	2	3	0	3	0	0	1	7	1	0	3	0	2
Wellfield Refurbishment (I or P)														
Planned	0	60	100	60	121	0	0	0	0	0	0	0	0	0
Number of In Service Wells per Wellfield	308	479	652	750	1505	0	510	328	744	682	60	728	0	431
Total Number of Wells	7,177													
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	11,580	7,388	25,047	7,074	0	23,271	23,271	21,887	21,595	0	19,732	0	8,674

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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 Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)					
**Mountain States Employers Council, 2012 Survey, Mining Industry Compensation & 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	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	included	pound	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		\$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		\$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		Rate (\$)	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		\$30.09	\$33.10	hour	Equipment Watch
Pick-up Truck 3/4 ton 4X4		\$20.13	\$22.14	hour	Equipment Watch
Pulling Unit***		\$35.32	\$38.85	hour	Equipment Watch
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 12, Section 12(b)					
**Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)					
***1 3/4 Ton 4x4 Truck with Hoist					
Quoted Costs		Rate (\$)	Profit & Overhead	Units	Source
Deep Disposal Well - Plug & Abandonment Costs		\$13.62	included	foot	UIC Permit-2012
Deep Disposal Well - MIT Costs		\$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		\$32,000	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	Appendix C	\$1.671	\$1.838	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 50 feet, 0% grade	Appendix E	\$0.160	\$0.176	lcy	Guideline-10/2012
Moving Materials: One-Way Distance 100 feet, 0% grade	Appendix E	\$0.270	\$0.297	lcy	Guideline-10/2012
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	\$0.351	\$0.386	lcy	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	acre	Guideline-10/2012

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Ripping Operating Costs (Overburden)	Appendix I	\$1,209.63	\$1,330.59	acre	Guideline-10/2012
Building Demolition - Mixture of Types	Appendix K	\$0.278	\$0.31	ft3	Guideline-10/2012
Building Demo Disposal (Average)	Appendix K	\$9.50	\$10.45	cy	Guideline-10/2012
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	\$5.31	\$5.84	ft2	Guideline-10/2012
Concrete (Footings) 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	cy	Guideline-10/2012
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	\$3.00	\$3.30	foot	Guideline-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	Guideline-10/2012
Incidental Costs: Capping	Appendix L	\$10	\$11	each	Guideline-10/2012
Incidental Costs: Site Location	Appendix L	\$10	\$11	hole	Guideline-10/2012
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	\$0.40	\$0.44	foot	Guideline-10/2012
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	\$30	\$33	well	Guideline-10/2012
Incidental Costs: Monitoring Well Concrete Pedestal Disposal	Appendix L	\$100	\$110	each	Guideline-10/2012
Scarification Costs	Appendix P	\$69.02	\$75.92	acre	Guideline-10/2012
Revegetation Costs-Seed	Appendix Q	\$106	\$117	acre	Actual Costs-2013
Revegetation Costs-Mulch	Appendix Q	\$91.88	\$101.07	acre	Actual Costs-2013
Revegetation Costs-Fertilizer	Appendix Q	\$300.00	\$330.00	acre	Actual Costs-2013
Revegetation Costs-Total	Appendix Q	\$497.88	\$547.67	acre	Actual Costs-2013
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 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)	Transport (\$/load)	C&D (cy/load)	Total (\$/cy)
C&D Debris (county landfill)	\$62.00	2	\$335.00	30	\$42.17
					Total (\$/ft3)
*Transportation and disposal costs based on actual costs (2013). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 320, September 2010.					
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)	Transport (\$/cy)	Total (\$/cy)
Type I: Soil, sand, gravel, rock, concrete rubble, etc.	\$138.97	\$152.87	13.0	\$247.95	\$400.82
Type II: Process material, pumps, motors, etc.	\$160.08	\$67.23	24.7	\$130.50	\$197.73
Type II: Chipped piping	\$160.08	\$67.23	36.4	\$88.55	\$155.78
Pathfinder					
Type I: Soil, sand, rock, gravel, demolition masonry, concrete rubble	N/A	\$130.00	13.0	\$26.73	\$156.73
Type II: Other process waste, process equipment, etc.	N/A	\$378.00	24.7	\$14.07	\$392.07
Type II: Chipped piping	N/A	\$378.00	36.4	\$9.55	\$387.55
*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. Transportation 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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GROUNDWATER RESTORATION UNIT COSTS			
Wellfield Pumping			
Equipment			
Wellfield Pump Sizes	5	hp	
Wellfield Pump Flow Rate	25	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0597	kWhr	
Efficiency	80%		
Wellfield Pumping Cost	\$0.19	per kgal	
Satellite Pumping			
Equipment			
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			
Equipment			
Deep Disposal Well Pump Size	75	hp	
Deep Disposal Well Flow Rate	75	gpm	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0597	kWhr	
Efficiency	90%		
Reagent			
Antiscalant Cost (Scaletrol)	\$4.5177	per lb	
Density of Water	8.34	lbs/gal	
Specific Gravity (Scaletrol)	1.284		
Antiscalant Cost (Scaletrol)	\$48.38	per gal	
Antiscalant Dose (ScaleTrol)	0.0000048	gal/gal	
Deep Disposal Well Cost	\$1.06	per kgal	
Total Groundwater Sweep Costs	\$1.90	per kgal	
Reverse Osmosis			
Equipment			
System Capacity	250	gpm	
Unit Pump	60	hp	
Injection Pump	60	hp	
Waste Pump	15	hp	
kW to HP Conversion Factor	0.746		
Cost of Electricity	\$0.0597	kWhr	
Efficiency	90%		
Reagents			
Tripolyphosphate Usage Rate	0.00000130	lb/gal	
Tripolyphosphate Cost	\$1.0893	per lb	
EDTA Usage Rate	0.00000315	lb/gal	
EDTA Cost	\$1.8774	per lb	
Antiscalant Cost (Hypersperse)	\$3.9050	per lb	
Density of Water	8.34	lbs/gal	
Specific Gravity (Hypersperse)	1.124		
Antiscalant Cost (Hypersperse)	\$36.6061	per gal	
Antiscalant Dose (Hypersperse)	0.0000036	gal/gal	
Sodium Sulfide Usage Rate	0.00017	lb/gal	
Sodium Sulfide Cost	\$0.5520	per lb	
RO Cost (without Reductant)	\$0.58	per kgal	
RO Cost (with Reductant)	\$0.67	per kgal	
MIT Costs for Production Wells			
Equipment			
Pulling Unit Hours	4	hrs/day	
Pulling Unit Cost	\$38.85	\$/hour	
MIT Unit Hours	8	hrs/day	
MIT Unit Cost	\$33.10	\$/hour	
Labor			

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Required Hours	8	hrs/day
Required Laborers	1.5	per day
Labor Cost	\$32.20	\$/hour
Productivity	4	wells/day
MIT Cost for Production Wells	\$201.65	per well
MIT Costs for Injection Wells		
Equipment		
Pulling Unit Hours	0	hrs/day
Pulling Unit Cost	\$38.85	\$/hour
MIT Unit Hours	8	hrs/day
MIT Unit Cost	\$33.10	\$/hour
Labor		
Required Hours	8	hrs/day
Required Laborers	1	per day
Labor Cost	\$32.20	\$/hour
Productivity	4	wells/day
MIT Cost for Injection Wells	\$130.60	per well
Booster Pump Operating Cost		
Equipment		
Wellfield Pump Sizes	40	hp
Number of Pumps Running (avg.)	9	per year
Hours Running	24	per day
kW to HP Conversion Factor	0.746	
Cost of Electricity	\$0.0597	kWhr
Efficiency	90%	
Booster Pump Operating Costs	\$155,962.62	per year
WELL ABANDONMENT UNIT COSTS		
Removal of Contaminated Soil Around Wells		
Equipment		
Cat 416 Backhoe Time	0.25	hours
Cat 416 Backhoe Cost	\$38.47	per hour
Labor		
Radiation Technician	0.25	hours
Radiation Technician Cost	\$35.00	per hour
Operator	0.25	hours
Operator Cost	\$36.40	per hour
Disposal		
ByProduct Disposal	0.37	cubic yard
Disposal Cost (incl. Transport)	\$156.73	per cubic yard
Removal of Contaminated Soil Cost	\$85.46	per well
DDW Pump Dismantling and Disposal		
Labor		
Number of Laborers	2	per day
Number of Pumps Dismanteled	0.5	per day
Hours Per Day	8	hours
Laborers Cost	\$32.20	
Disposal		
Volume of DDW Pump	240	ft ³
ByProduct Disposal	\$7.32	per ft ³
DDW Pump Dismanteling and Disposal	\$2,788.03	per pump
WELLFIELD RECLAMATION COSTS		
Wellfield Piping Removal		
Equipment		
Trackhoe	1	per day
Trackhoe Cost	\$110.03	per hour
Loader	1	per day
Loader Cost	\$58.22	per hour
Pickup Truck	1	per day
Pickup Cost	\$22.14	per hour
Chipper Cost	\$52.72	per hour

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

[illegible]

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

[illegible]

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

[illegible]

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

Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
SR 1 & SR 2 Power Costs	\$37,985	per year
Reynolds Ranch Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP
Lighting	24	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Reynolds Ranch Power Costs	\$37,985	per year
DDW - Typical		
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP
Lighting	0.4875	kW
Heating	12.5	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
DDW Electrical Cost	\$4,223	per year
Maintenance Shop Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP
Lighting	8.785	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Maintenance Shop Power Costs	\$5,293	per year
Fresh Water Pumphouse Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	10	HP
Lighting	1.04	kW
Heating	10	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Fresh Water Pumphouse Power Costs	\$9,279	per year
Office Building Power Costs		
Miscellaneous Pumps, Fans, Sumps, etc.	7.5	HP
Lighting	10	kW
Air Conditioning	30	kW
kW to HP Conversion Factor	0.746	kW (per square ft)
Electricity Cost	\$0.0597	per kWhr
Efficiency Factor	90%	
Operating Hours Per Year	8760	hours
Office Building Power Costs	\$23,538	per year
MISCELLANEOUS RECLAMATION AND RESTORATION COSTS		
Liner and Subsoil Removal Costs		
Equipment		
Trackhoe Cost	\$ 110.03	per hour
Loader Cost	\$ 58.22	per hour
Labor		
Operator	36.40	per hour
Productivity	40	cubic yards/hour
Total Removal	\$ 5.12	per cubic yard

Smith Ranch Water Balance Permit 633

7-Jun-13
Assumes 9 Pore Volumes of Treatment (1 P.V. GWS and 8 P.V. RO)
Rev. 8

Year				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Satellite CPP \ SR1 Water Balance																						
Total CPP SR1 Production Flow (gpm)				3630	6110	5330	3700	3800	3870	4500	4500	4550	4500	4800	3900	7700	7500	5200	3600	2000	500	0
Total CPP SR1 Production Bleed (gpm)				56.3	61.1	53.3	37	38	38.7	45	45	45.3	45	48	39	77	75	52	36	20	5	0
Total CPP/SR1 Production RO Con. (gpm)				11.26	12.22	10.64	7.4	7.6	7.74	9	9	9.1	9	9.6	7.8	15.4	15	10.4	7.2	4	1	0
Satellite SR2 Water Balance																						
Total SR2 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)				42	40	33	37	29	22	16	4	15	33	35	25	22	32	30	28	20	30	28
Total SR2 Production RO Con. (gpm)				8.4	8.0	6.6	7.4	5.8	4.4	3.2	0.8	3.0	6.6	7.0	5.0	4.4	6.4	6.0	5.6	4.0	6.0	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)				30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Restoration Flows																						
PV With Flair (Kgal)																						
MU 1 (gal) (RO)	62,841																					
GWS (gal)																						
Total Disposal (gal)																						
MU 2 (gal) (RO)	110,793																					
GWS (gal)																						
Total Disposal (gal)																						
MU 3 (gal) (RO)	152,836																					
GWS (gal)																						
Total Disposal (gal)																						
MU 4/6A (gal) (RO)	119,224																					
GWS (gal)																						
Total Disposal (gal)																						
MU 13 (gal) (RO)	137,435																					
GWS (gal)																						
Total Disposal (gal)																						
MU 15A (gal) (RO)	52,673																					
GWS (gal)																						
Total Disposal (gal)																						
MU 7 (gal) (RO)	104,743																					
GWS (gal)																						
Total Disposal (gal)																						
MU 9 (gal) (RO)	136,386																					
GWS (gal)																						
Total Disposal (gal)																						
MU 10 (gal) (RO)	190,448																					
GWS (gal)																						
Total Disposal (gal)																						
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)																						
Deep Disposal Well Capacity (gpm)																						
DDW #1	150	50		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
DDW #2	158	80		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
DDW #10	126	20		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DDW #6	105	30		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
DDW #7 (Fut)	100	0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
DDW #8 (Fut)	100	0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Pipeline to HUP	0	75		75	75	75	75	75	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																						
Total Production Bleed (gpm)				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
Control Bleed				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
Total Restoration Disposal (gpm)				105.0	155.0	205.0	230.0	230.0	230.0	280.0	280.0	280.0	280.0	230.0	280.0	280.0	280.0	280.0	240.0	200.0	100.0	0.0
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	344.8	350.0	344.5	300.2	254.9	154.4	52.5
Total Disposal Balance				4	4	8	10	61	62	12	15	13	10	59	13	6	5	11	55	100	201	303

Reynolds Ranch Satellite

June 7, 2013

Assumes 9 Pore Volumes of Treatment (1 P.V. GWS and 8 P.V. RO)

Rev 8.

Year				1	2	3	4	5	6	7	8	9	10	11	12	13	14
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)				0	0	33	35	20	15	5	0	0	0	0	0	0	0

Restoration Flows

	PV With Flair (Kgal)	GWS PV to Finish	RO PV to Finish														
MU 27(gal) (RO)	149140	1	8														
GWS (gal)																	
Total Disposal (gal)																	
MU 21 (gal)(RO)																	
GWS (gal)																	
Total Disposal (gal)																	

Total Restoration Disposal (gpm) 0 0 0 0 0 0 0 0 100 100 100 100 100 100 100 0

Installed RO Capacity (gpm) (feed)

Feed (gpm)
250
250

Total Capacity 500

Deep Disposal Well Capacity (gpm)	Current	Future															
Reynolds Ranch I (gpm)	20			20	20	20	20	20	20	20	20	20	20	20	20	20	20
Additional Disposal Capacity (gpm)		50		0	0	50	50	50	50	50	50	50	50	50	50	50	50
Additional Disposal Capacity (gpm)		50		0	0	0	0	0	0	50	50	50	50	50	50	50	50
Additional Disposal Capacity (gpm)		50															
Total Available	20	150		20	20	70	70	70	70	120	120	120	120	120	120	120	120
Total Production Bleed (gpm)				0	0	33	35	20	15	5	0	0	0	0	0	0	0
Total Restoration Disposal (gpm)				0	0	0	0	0	0	0	100	100	100	100	100	100	0
Total Disposal Required (gpm)				0	0	33	35	20	15	5	100	100	100	100	100	100	0
Total Disposal Balance				20	20	37	35	50	55	115	20	20	20	20	20	20	120

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 costs based on actual operating costs. Reduced time period for
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	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.
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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)
<u>Groundwater Restoration - Wellfield Costs</u>			
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)
<u>Groundwater Restoration - Site-Wide Costs</u>			
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)

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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 WDEQ/LQD Guideline No. 12, Section 12(b)									
² , Per WDEQ/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.									

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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														
Estimated PV's		0	0	0	0	0	0	0	0.7	1	1	1	1	0
Total kgal for GWS		0	0	0	0	0	0	0	63,756	232,890	90,864	84,780	66,812	0
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	\$1.22
Subtotal Ground Water Sweep Costs per Wellfield		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,370	\$283,722	\$110,696	\$103,285	\$81,395	\$0
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	0
Total Kgal for RO		0	0	0	0	0	0	0	309,672	1,048,005	408,888	381,510	300,654	0
Wellfield Pumping Cost		\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$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	\$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%	20%	20%
Brine Volume for Disposal		0	0	0	0	0	0	0	61,934	209,601	81,778	76,302	60,131	0
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	\$1.06
Permeate Volume for Re-Use		0	0	0	0	0	0	0	247,738	838,404	327,110	305,208	240,523	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	\$0.66
Subtotal Reverse Osmosis Costs per Wellfield		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$464,866	\$1,573,221	\$613,805	\$572,707	\$451,329	\$0
Total Reverse Osmosis Costs		\$3,675,928												
III. Reverse Osmosis with Chemical Reductant Costs														
Estimated PV's		0	0	2	1	1	1	1	3.5	3.5	3.5	3.5	3.5	0
Total kgal for RO		0	0	169,644	19,691	0	32,309	19,233	318,780	815,115	318,024	296,730	233,842	0
Wellfield Pumping Cost		\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19	\$0.19
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)		\$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
Bleed to Deep Disposal Well (%)		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Brine Volume for Disposal (kgal)		0	0	33,929	3,938	0	6,462	3,847	63,756	163,023	63,605	59,346	46,768	0
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	\$1.06
Permeate Volume for Re-Use		0	0	135,715	15,753	0	25,847	15,386	255,024	652,092	254,419	237,384	187,074	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	\$0.66
Subtotal RO with Chemical Reductant Costs per Wellfield		\$0	\$0	\$270,582	\$31,407	\$0	\$51,533	\$30,677	\$508,453	\$1,300,106	\$507,247	\$473,284	\$372,977	\$0
Total Reverse Osmosis with Chemical Reductant Costs		\$3,546,266												
IV. Mechanical Integrity Testing (MIT) Costs														
Pre-Restoration, Restoration and Stability Period (yrs)		0	0	3	3	3	3	3	6	14	6	8	10	0
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	0.0
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	\$0
Total Wellfield MIT Costs		\$479,165												
V. Wellfield Refurbishment Costs														
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	0	0	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	0
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														
A. Pre-Restoration Monitoring														
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	0

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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	6048	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 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													
	1. Sampling Prior to Start-up (MP Wells)													
	# of Wells	0	0	0	0	0	0	0	0	21	12	6	12	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
	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	60	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	\$162,720.00	\$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	11	9	5	29	21	12	6	12	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
	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	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)	5	18	20	0	0	4	3	15	45	10	6	9	0
	Pre-Restoration and Restoration Period (yrs)	0	0	2	2	2	2	2	5	13	5	7	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 Cost per Wellfield	\$0	\$0	\$128,876	\$0	\$0	\$25,775	\$19,331	\$241,642	\$1,884,809	\$161,095	\$135,320	\$260,973	\$0
	Total Header House Heating Costs	\$2,857,821												
	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												

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Ground Water Restoration - Site Wide			Deep Disposal Wells				
I.	Building Utility Costs	Satellite No.2	Selenium Plant	Satellite No.3	Morton 1-20	Vollman 33-27	SRHUP #9
	Assumptions:						
	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
	Subtotal Utility Cost per Building	\$285,679	\$939,768	\$1,334,950	\$76,042	\$76,042	\$76,042
	*Yrs for Satellite No. 2 assumes end of restoration for MU-I						
	*Yrs for Satellite No. 3 assumes end of restoration for MU-K-North						
	Total Building Utility Costs	\$2,788,524					
II.	Irrigation 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	\$82,080	*Based on two year proposal (2012)			
	Subtotal Phytoremediation Studies	\$0	\$122,080				
	B. Harvesting Costs						
	Irrigation Area (acres)	55	106				
	Harvesting Costs (\$/acre)	\$250	\$250				
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Subtotal Harvesting Costs per Irrigator	\$247,500	\$477,000				
	C. Irrigation Monitoring						
	# 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				
	# of Soil Water Samples/Year	12	2				
	\$/sample	\$150	\$150				
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Subtotal Monitoring Costs per Irrigator	\$220,860	\$212,220				
	Subtotal Monitoring and Harvesting Costs per Irrigator	\$468,360	\$811,300				
	Total Maintenance and Monitoring Costs	\$1,279,660					
III.	Selenium Plant Operation Costs						
	Restoration Period (yrs)	18		* Based on timeline to support Smith Ranch restoration activities			
	Selenium Plant Operating Cost (\$/yr)	\$157,852					
	Total Selenium Plant Operating Cost	\$2,841,339					
IV.	Booster Pump Operation Costs						
	Restoration Period (yrs)	13					

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

	Booster Pump Operating Cost (\$/yr)	\$34,658.36				
	Total Booster Pump Operating Cost	\$450,559				
V.	Infrastructure, Equipment Maintenance, Replacement and Repair Costs					
	Annual Maintenance Cost (\$/yr)	\$92,320		*Based on planned expenditures (2013)		
	Restoration Period (yrs)	13				
	Total Cost	\$1,200,160				
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				
VII.	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				
TOTAL SITE-WIDE RESTORATION COSTS		\$26,470,167				

Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate

Well and Drill Hole Abandonment		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	Other
I. Well Abandonment (Wellfields)															
A	Sealing Costs				Inc in MU-C	Inc in MU-C		Inc in MU-D							
	Total # of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	544	448	410	40	3
	Production, Injection and Perimeter Well Average Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540	540	650
	Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$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	\$0	\$662,475	\$2,627,625	\$748,000	\$800,800	\$608,850	\$59,400	\$5,363
B	Casing Removal and Disposal Costs														
	Total # of Wells per Wellfield	8	392	567	0	0	288	0	438	1470	544	448	410	40	3
	# of Previously Abandoned Wells Pending Release	54	118	180	0	0	86	0	271	330	50	40	20	0	0
	Total # of Wells for Casing Removal and Disposal	62	510	747	0	0	374	0	709	1800	594	488	430	40	3
	Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33	\$33
	Subtotal Casing Removal and Disposal Costs per Wellfield	\$2,046	\$16,830	\$24,651	\$0	\$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	\$0	\$0	\$487,542	\$0	\$685,872	\$2,687,025	\$767,602	\$816,904	\$623,040	\$60,720	\$5,462
	Total Well Abandonment Costs	\$7,531,382													
II. Removal of Contaminated Soil Around Wells															
	# of Production and Injection Wells	1	327	464	0	0	234	0	379	1343	466	412	365	0	
	Removal of Contaminated Soil Around Wells (\$/well)	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46	\$85.46
	Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$85	\$27,944	\$39,652	\$0	\$0	\$19,997	\$0	\$32,388	\$114,769	\$39,823	\$35,208	\$31,192	\$0	
	Total Contaminated Soil Removal/Disposal Costs	\$341,058													
III. Drill Hole Abandonment															
A	Drill Hole Plug and Abandonment														
	# of Drill Holes Pending Bond Release														
	2009-10	89													
	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 Abandonment (\$/ft)	\$3.30													
	Subtotal Plug and Abandonment Costs	\$53,592													
B	Incidental Costs														
	Total # of Drill Holes	812													
	Site Location (\$/hole)	\$11													
	Capping (\$/hole)	\$11													
	Small Site Grading and Seeding (\$/site)	\$55													
	Subtotal Incidental Costs	\$62,524													
	Total Delineation Hole Abandonment	\$116,116													
IV. Waste Disposal Well Abandonment															
		Morton No. 1-20	Vollman No. 33-27	SRHUP # 9											
A	Well Sealing														
	Total Depth of Well	9,206	14,412	9,500											
	Sealing Cost Per Foot	\$13.62	\$13.62	\$13.62											
	*Sealing 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 (ft)	8,498	8,869	8,820											
	Diameter of Tubing String (inches)	2.875	2.875	2.875											
	Volume of Tubing String (ft ³)	383	400	397											
	Transportation and Disposal Unit Cost (\$/ft ³)	\$7.32	\$7.32	\$7.32											
	Subtotal Tubing String Disposal Costs per Well	\$2,804	\$2,927	\$2,911											
	Subtotal Waste Disposal Well Abandonment Costs per Well	\$133,766	\$204,795	\$137,877											
	Total Waste Disposal Well Abandonment Costs	\$476,438													
	TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	\$8,461,994													

**Cameco Resources
Highland Uranium Project
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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
I. Wellfield Piping														
	Number of Header Houses per Wellfield	5	18	20	0	0	4	3	15	45	10	6	9	0
	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	13,800	13,800
	*average 46 wells per with 300 ft pipeline/well)													
	Approximate Total Length of Piping (ft)	69,000	248,400	276,000	0	0	55,200	41,400	207,000	621,000	138,000	82,800	124,200	0
A.	Removal and Loading													
	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	\$1.86	\$1.86
	Subtotal Wellfield Piping Removal and Loading Costs	\$128,109	\$461,192	\$512,436	\$0	\$0	\$102,487	\$76,865	\$384,327	\$1,152,980	\$256,218	\$153,731	\$230,596	\$0
B.	Transport and Disposal Costs (NRC-Licensed Facility)													
	Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2
	Chipped Volume Reduction (ft ³ /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
	Chipped Volume per Wellfield (ft ³)	740	2663	2959	0	0	592	444	2219	6658	1480	888	1332	0
	Volume for Disposal Assuming 10% Void Space (ft ³)	814	2930	3255	0	0	651	488	2441	7324	1628	977	1465	0
	Transportation and Disposal Unit Cost (\$/ft ³)	\$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
	Subtotal Wellfield Piping Transport and Disposal Costs	\$4,697	\$16,905	\$18,781	\$0	\$0	\$3,756	\$2,816	\$14,084	\$42,258	\$9,393	\$5,637	\$8,453	\$0
	Subtotal Wellfield Piping Costs per Wellfield	\$132,806	\$478,097	\$531,217	\$0	\$0	\$106,243	\$79,681	\$398,411	\$1,195,238	\$265,611	\$159,368	\$239,049	\$0
	Total Wellfield Piping Costs	\$3,585,721												
II. Well Pumps and Downhole Tubing														
	Assumptions: 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													
	Number of Production Wells	0	133	204	0	0	91	0	145	549	174	155	123	0
	Number of Injection Wells	1	194	261	0	0	143	0	234	794	293	258	242	0
	Number of Monitor Wells	7	64	85	0	0	50	0	59	113	74	34	45	40
1.	Pump Volume													
	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	0.43
	Pump Volume per Wellfield (ft ³)	0.0	57.6	88.1	0.0	0.0	39.4	0.0	62.8	237.8	75.2	66.9	53.3	0.0
2.	Tubing Volume													
	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													
	Number of Production Wells with Tubing	0	80	122	0	0	55	0	87	329	104	93	74	0
	Number of Injection Wells with Tubing	1	116	156	0	0	86	0	140	476	176	155	145	0
	Tubing Length per Wellfield (ft)	3,800	110,500	190,575	0	0	109,825	0	150,150	573,750	168,150	176,250	135,960	20,600
	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
	Chipped Volume Reduction (ft ³ /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
	Chipped Volume per Wellfield (ft ³)	41	1185	2043	0	0	1177	0	1610	6151	1803	1890	1458	221
	Volume of Pump and Tubing (ft ³)	41	1243	2131	0	0	1216	0	1673	6389	1878	1957	1511	221
	Volume for Disposal Assuming Void Space (ft ³)	45	1367	2344	0	0	1338	0	1840	7028	2066	2153	1662	243
	Transportation and Disposal Unit Cost (\$/ft ³)	\$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
	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 Downhole Tubing Costs	\$115,890												
III. Buried Trunkline (Includes \$ for fiber optic cable removal)														
	Assumptions:													
	Length of Trunkline Trench (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	2500	0
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	\$3.71	\$3.71	\$3.71	\$3.71
	Subtotal Trunkline Removal and Loading Costs	\$24,136	\$0	\$21,908	\$0	\$0	\$44,560	\$20,423	\$0	\$43,446	\$49,016	\$39,918	\$9,283	\$0
B.	Transport and Disposal Costs (NRC-Licensed Facility)													
1.	3" HDPE Trunkline													
	Piping Length (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	0	0
	Chipped Volume per Lft (ft ³ /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	0
2.	6" HDPE Trunkline													
	Piping Length (ft)	0	0	0	0	0	0	11000	0	0	0	3000	0	0
	Chipped Volume per Lft (ft ³ /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

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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 (ft³)		0	0	0	0	0	0	917	0	0	0	250	0	0
3.		10" HDPE Trunkline														
		Piping Length (ft)		13000	0	0	0	0	0	0	0	0	0	750	2000	0
		Chipped Volume per L ft (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	0.220
		Chipped Volume (ft³)		2854	0	0	0	0	0	0	0	0	0	165	439	0
4.		12" HDPE Trunkline														
		Piping Length (ft)		0	0	11800	0	0	24000	0	0	0	0	0	2000	0
		Chipped Volume per L ft (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	0.309
		Chipped Volume (ft³)		0	0	3644	0	0	7411	0	0	0	0	0	618	0
5.		14" HDPE Trunkline														
		Piping Length (ft)		0	0	0	0	0	0	0	0	23400	26400	8500	0	0
		Chipped Volume per L ft (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	0.372
		Chipped Volume (ft³)		0	0	0	0	0	0	0	0	8712	9829	3165	0	0
6.		16" HDPE Trunkline														
		Piping Length (ft)		0	0	0	0	0	0	0	0	23400	26400	8500	0	0
		Chipped Volume per L ft (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	0.486
		Chipped Volume (ft³)		0	0	0	0	0	0	0	0	11381	12841	4134	0	0
		Total Trunkline Chipped Volume (ft³)		3006	0	3781	0	0	7691	1045	0	20366	22977	7964	1057	0
		Volume for Disposal Assuming 10% Void Space (ft³)		3306	0	4159	0	0	8460	1150	0	22403	25275	8761	1162	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	\$5.77	\$5.77	\$5.77	\$5.77
		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	\$0
		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	\$0
		Total Trunkline Decommissioning Costs		\$683,552												
IV.		Wellhead Cover Removal					Inc in MU-C	Inc in MU-C								
		Number of Production and Injection Wells		1	327	459	0	0	234	0	369	1163	451	365	347	0
		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		\$12	\$3,833	\$5,380	\$0	\$0	\$2,743	\$0	\$4,325	\$13,631	\$5,286	\$4,278	\$4,067	\$0
		Total Wellhead Cover Removal Costs		\$43,555												
IV.		Header Houses (Includes Booster Stations)					Inc in MU-C	Inc in MU-C								
		Total Quantity		5	18	20	0	0	4	3	15	45	10	6	9	0
		Average Header House Volume (ft³)		1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
A.		Removal														
		Total Volume (ft³)		8000	28800	32000	0	0	6400	4800	24000	72000	16000	9600	14400	0
		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
		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	\$0
B.		Survey and Decontamination														
		Cost per Header House		\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621	\$621
		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	\$0
C.		Disposal														
		Total Volume for Disposal - Incl. 33% Factor (cy)		98	352	391	0	0	78	59	293	880	196	117	176	0
		Volume for Disposal Assuming Void Space (cy)		108	387	430	0	0	86	65	323	968	215	129	194	0
		Disposal Cost, Landfill (cy)		\$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 County Landfill Disposal Costs		\$4,554	\$16,319	\$18,132	\$0	\$0	\$3,626	\$2,741	\$13,620	\$40,817	\$9,066	\$5,440	\$8,180	\$0
		Headerhouse Soil Removal Volume (assumes 10'Wx20'Lx2.5'D)		500	500	500	500	500	500	500	500	500	500	500	500	500
		11c (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
		Subtotal 11(c)2 Disposal Cost		\$14,512	\$52,243	\$58,048	\$0	\$0	\$11,610	\$8,707	\$43,536	\$130,608	\$29,024	\$17,414	\$26,122	\$0
		Subtotal Header House Removal and Disposal Costs per Wellfield		\$24,619	\$88,554	\$98,394	\$0	\$0	\$19,679	\$14,780	\$73,816	\$221,405	\$49,197	\$29,518	\$44,298	\$0
		Total Header House Removal and Disposal Costs		\$664,260												
		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	\$1,402
		TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL		\$5,092,978												

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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
I. 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	0.0
*Assumes wellfield pattern area X 2											
Discing/Seeding Unit Cost (\$/acre)		\$548	\$548	\$548	\$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	\$0
Total Wellfield Pattern Area Reclamation Costs		\$268,248									
II. Wellfield Road Reclamation											
Road Construction											
Length of Wellfield Roads (1000 ft)		12.8	11.3	2.4	13.3	18	15.7	5	5	5	5
Wellfield Road Reclamation Unit Cost (\$/1000 ft)		\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416	\$1,416
Subtotal Wellfield Road Reclamation Costs		\$18,129	\$16,004	\$3,399	\$18,837	\$25,494	\$22,236	\$7,082	\$7,082	\$7,082	\$7,082
Total Wellfield Road Reclamation Costs		\$132,427									
III. Laydown area reclamation											
Area of Disturbance (acres)		1	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	0.67
Surface Grade: Level Ground											
Average Length of Topsoil Haul (ft)		500	500	500	500	500	500	500	500	500	500
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	\$1,331
Subtotal Ripping Costs		\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331	\$1,331
B. Topsoil Application with Scraper											
Volume of Topsoil Removed (cy)		1081	1081	1081	1081	1081	1081	1081	1081	1081	1081
Moving Materials (0% Grade)		\$1.19	\$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	\$1,284
C. Discing and Seeding											
Discing/Seeding Unit Cost (\$/acre)		\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548	\$548
Subtotal Discing/Seeding Costs		\$548	\$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	\$3,163
Total Wellfield Laydown Area Reclamation Costs		\$31,630									
IV. Fence Removal											
Length of Fencing (ft)		0	18,694	14,060	0	18,426	29,540	9,680	0	9,977	0
Fence Removal Costs		\$0.35	\$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	\$0
Total Fence Removal Costs		\$35,333									
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD		\$42,038	\$60,754	\$19,726	\$46,437	\$121,445	\$66,543	\$18,723	\$39,085	\$42,641	\$10,245
TOTAL WELLFIELD SURFACE RECLAMATION COSTS		\$467,638									
V. Satellite Area Reclamation		Satellite No.1	Satellite No.2	Satellite No.3	Se Plant						
Assumptions:											
Area of Disturbance (acres)		1	3	2.5	2						
Average Depth of Stripped Topsoil (ft)		1	0.67	0.67	0.67						
Surface Grade: Level Ground											
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)		\$1.42	\$1.42	\$1.42	\$1.42						
Subtotal Topsoil Application Costs		\$2,288	\$4,598	\$3,832	\$3,065						
C. Discing and Seeding											
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									
TOTAL WELLFIELD & SATELLITE SURFACE RECLAMATION COSTS		\$497,386									

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Equipment Removal and Loading				Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
I. Removal and Loading Costs								
A.	Tankage							
	Number of Tanks			39	8	14	18	7
	Volume of Tank Construction Material (ft ³)			1629	162	290	397	290
	<u>Tank Removal Cost</u>			\$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	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	0
	Average Steel Pipe Diameter (inches)			2	0	0	0	0
	Volume (ft ³)			15	0	0	0	0
	<u>Pipe Removal Cost</u>			\$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	\$35,717
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
	<u>Pump Removal Cost</u>			\$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	0
	<u>Dryer Removal Cost</u>			\$14.71	\$14.71	\$14.71	\$14.71	\$14.71
	Subtotal Dryer Removal Costs			\$13,017	\$0	\$0	\$0	\$0
E.	RO and Degasser Units							
	Number of RO Units (500 gpm)							
	Current			0	0	2.5	0	0
	Planned			0	0	0	0	0
	Number of Degasser Units							
	Current			0	0	0	0	1
	Planned			0	0	0	0	0
	RO/Degasser Average Volume (ft3/Unit)			250	250	250	250	250
	<u>RO and Degasser Removal Cost</u>			\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
	Subtotal RO Unit Removal and Loading Costs			\$0	\$0	\$3,141	\$0	\$1,256
	Subtotal Equipment Removal and Loading Costs per Facility			\$397,315	\$37,608	\$88,116	\$99,863	\$86,231
	Total Equipment Removal and Loading Costs			\$709,133				

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Equipment Removal and Loading				Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Selenium Plant
II. Transportation and Disposal Costs (NRC-Licensed Facility)								
A. Tankage								
	Volume of Tank Construction Material (ft³)			1629	162	290	397	290
	Volume for Disposal Assuming Void Space (ft³)			1792	178	319	437	319
	Transportation and Disposal Unit Cost (\$/ft3)			\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
	Subtotal Tankage Transportation and Disposal Costs			\$13,124	\$1,304	\$2,336	\$3,200	\$2,336
B. PVC / Steel Pipe								
	Volume of Shredded PVC Pipe (ft³)			303	23	93	93	93
	Volume for Disposal Assuming Void Space (ft³)			333	25	102	102	102
	Volume of Steel Pipe (ft³)			15	0	0	0	0
	Volume for Disposal Assuming Void Space (ft³)			17	0	0	0	0
	Transportation and Disposal Unit Cost (\$/ft3)			\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
	Subtotal PVC Pipe Transportation and Disposal Costs			\$2,019	\$144	\$589	\$589	\$589
C. Pumps								
	Volume of Pumps (ft³)			256.36	49.3	69.02	64.09	69.02
	Volume for Disposal Assuming Void Space (ft³)			282	54	76	70	76
	Transportation and Disposal Unit Cost (\$/ft3)			\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
	Subtotal Pump Transportation and Disposal Costs			\$2,065	\$395	\$557	\$513	\$557
D. Dryer								
	Dryer Volume (ft³)			885	0	0	0	0
	Volume for Disposal Assuming Dryer Remains Intact (ft³)			885	0	0	0	0
	Transportation and Disposal Unit Cost (\$/ft3)			\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
	Subtotal Dryer Transportation and Disposal Costs			\$6,481	\$0	\$0	\$0	\$0
E. RO/Degasser Units								
	Volume of RO/Degasser Units (ft³)			0	0	625	0	250
	Volume for Disposal Assuming Volume Reduction (ft³)			0	0	687.5	0	275
	Transportation and Disposal Unit Costs			\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
	Subtotal RO Unit Transportation and Disposal Costs			\$0	\$0	\$5,035	\$0	\$2,014
Subtotal Equipment Transportation and Disposal Costs per Facility				\$23,689	\$1,843	\$8,517	\$4,302	\$5,496
Total Equipment Transportation and Disposal Costs				\$43,847				
III. Health and Safety Costs								
	Radiation Safety Equipment			Accounted for on GW REST				
Total Health and Safety Costs								
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY				\$421,004	\$39,451	\$96,633	\$104,165	\$91,727
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS				\$752,980				

**Cameco Resources
Highland Uranium Project
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				Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway	Changehouse and Lab	Process/ Fire Water	Potable Water Bldg
Building Demolition and Disposal															
I.	Decontamination Costs														
	A.	Wall Decontamination													
		Area to be Decontaminated (ft²)		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	\$0.94
		Subtotal Wall Decontamination Costs		\$123,600	\$18,870	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	B.	Concrete Floor Decontamination													
		Area to be Decontaminated (ft²)		17,820	0	6,000	9,600	9,600	0	0	0	0	0	0	0
		HCl 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	\$0	\$0	\$0	\$0
	C.	Deep Well Injection Costs													
		Total kgal 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	\$21	\$6	\$10	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		Subtotal Decontamination Costs per Building		\$133,115	\$18,891	\$3,157	\$5,052	\$5,052	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Decontamination Costs				\$176,086											
II.	Demolition Costs														
	A.	Building													
		Height of Building (ft)		24	24	24	25	25	25	14	19	0	14	21	35
		Volume of Building (ft³)		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													
		Area of Concrete Floor (ft²)		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											
III.	Disposal Costs														
	A.	Building													
		Volume of Building (cy)		29407	1138	7111	11852	11852	1391	3370	12333	207	2704	611	233
		Off-Site County Landfill													
		Percentage (%)		100	100	100	100	100	100	100	100	100	100	100	100
		Total Volume for Disposal - Incl. 33% Factor (cy)		9704	375	2347	3911	3911	459	1112	4070	68	892	202	77
		Disposal Cost, Landfill (cy)		\$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 County Facility Off-Site Disposal Costs		\$409,204	\$15,832	\$98,951	\$164,919	\$164,919	\$19,357	\$46,899	\$171,618	\$2,886	\$37,622	\$8,504	\$3,247
	B.	Concrete Floor													
		Area of Concrete Floor (ft²)		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 (ft³)		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
	I.	On-Site Concrete Disposal													
		Percentage (%)		75	75	75	100	100	100	100	100	100	100	100	100

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

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**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

				Potable Water	Central Plant	Selenium	SRHUP	Vollman	Morton
Building Demolition and Disposal				Tank Slab	Tank Slabs	Plant	#9 DDW	33-27 DDW	1-20 DDW
I.	Decontamination Costs								
	A.	Wall Decontamination							
		Area to be Decontaminated (ft ²)		0	0	4,000	0	0	0
		HCl Acid Wash, including labor (\$/ft ²)		\$0.94	\$0.94	\$0.94	\$0.94	\$0.94	\$0.94
		Subtotal Wall Decontamination Costs		\$0	\$0	\$3,774	\$0	\$0	\$0
	B.	Concrete Floor Decontamination							
		Area to be Decontaminated (ft ²)		0	0	9,600	1260	1260	1260
		HCl Acid Wash, including labor (\$/ft ²)		\$0.53	\$0.53	\$0.53	\$0.53	\$0.53	\$0.53
		Subtotal Concrete Floor Decontamination Costs		\$0	\$0	\$5,042	\$662	\$662	\$662
	C.	Deep Well Injection Costs							
		Total kgals for Injection (1 gal used per ft ²)		0	0	13.6	1.26	1.26	1.26
		Deep Well Injection Unit Cost (\$/kgals)		\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06
		Subtotal Deep Well Injection Costs		\$0	\$0	\$14	\$1	\$1	\$1
		Subtotal Decontamination Costs per Building		\$0	\$0	\$8,830	\$663	\$663	\$663
Total Decontamination Costs									
II.	Demolition Costs								
	A.	Building							
		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
		Subtotal Building Demolition Costs		\$0	\$0	\$97,856	\$4,624	\$4,624	\$4,624
	B.	Concrete Floor							
		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
		Subtotal Concrete Floor Demolition Costs		\$7,336	\$45,875	\$74,765	\$7,360	\$7,360	\$7,360
	C.	Concrete Footing							
		Length of Concrete Footing (ft)		0	0	453	142	142	142
		Demolition Cost		\$21.76	\$21.76	\$21.76	\$21.76	\$21.76	\$21.76
		Subtotal Concrete Footing Demolition Costs		\$0	\$0	\$9,847	\$3,089	\$3,089	\$3,089
		Subtotal Demolition Costs per Building		\$7,336	\$45,875	\$182,468	\$15,073	\$15,073	\$15,073
Total Demolition Costs									
III.	Disposal Costs								
	A.	Building							
		Volume of Building (cy)		0	0	11852	560	560	560
		Off-Site County Landfill							
		Percentage (%)		100	100	100	100	100	100
		Total Volume for Disposal - Incl. 33% Factor (cy)		0	0	3911	185	185	185
		Disposal Cost, Landfill (cy)		\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
		Subtotal County Facility Off-Site Disposal Costs		\$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 Concrete Floor (ft)		0.75	0.75	0.75	0.75	0.75	0.75
		Volume of Concrete Floor (ft ³)		942	5890.5	9600	945	945	945
		Volume of Concrete Floor (cy)		35	218	356	35	35	35
	1.	On-Site Concrete Disposal							
		Percentage (%)		100	100	100	100	100	100

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

				Potable Water	Central Plant	Selenium	SRHUP	Vollman	Morton
				Tank Slab	Tank Slabs	Plant	#9 DDW	33-27 DDW	1-20 DDW
Building Demolition and Disposal									
		Volume for Disposal (cy)		35	218	356	35	35	35
		Concrete Disposal On Site (cy)		\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08
		Subtotal County Facility Off-Site Disposal Costs		\$317	\$1,980	\$3,227	\$318	\$318	\$318
	2.	NRC-Licensed Facility							
		Percentage (%)		0	0	0	0	0	0
		Volume for Disposal (ft ³)		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
		Subtotal NRC-Licensed Facility Disposal Costs		\$0	\$0	\$0	\$0	\$0	\$0
		Subtotal Concrete Floor Disposal Costs		\$317	\$1,980	\$3,227	\$318	\$318	\$318
	C.	Concrete Footing							
		Length of Concrete Footing (ft)		0	0	453	142	142	142
		Average Depth of Concrete Footing (ft)		4	4	4	4	4	4
		Average Width of Concrete Footing (ft)		1	1	1	1	1	1
		Volume of Concrete Footing (ft ³)		0	0	1810	568	568	568
		Volume of Concrete Footing (cy)		0	0	67	21	21	21
		Concrete Disposal On Site (cy)		\$9.08	\$9.08	\$9.08	\$9.08	\$9.08	\$9.08
		Subtotal Concrete Footing Disposal Costs		\$0	\$0	\$608	\$191	\$191	\$191
		Subtotal Disposal Costs per Building		\$317	\$1,980	\$168,754	\$8,301	\$8,301	\$8,301
Total Disposal Costs									
IV. Health and Safety Costs				Accounted for on GW REST					
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS				\$7,653	\$47,855	\$360,052	\$24,037	\$24,037	\$24,037
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS									

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Miscellaneous Reclamation						
I. 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)	\$969.18				
	Average Thickness (ft)	0.50				
	Moving Materials (0% Grade)	\$1,188				
	Volume of Asphalt (cy)	2,743				
	Disposal Cost	\$42.17				
	Subtotal Asphalt Ripping and Disposal Costs	\$130,524				
B.	Ripping Overburden with Dozer					
	Overburden Surface Area (acres)	10.6				
	Ripping Cost (per acre)	\$1,330.59				
	Subtotal Ripping Overburden Costs	\$14,064				
C.	Topsoil Application					
	Area of surface disturbance (ft ²)	130680				
	Average thickness of topsoil (ft)	0.5				
	Average haul distance (ft)	2000				
	Surface grade (%)	0%				
	Volume of Topsoil (cy)	2,420				
	Moving Materials (0% Grade)	\$1.84				
	Subtotal Topsoil Application Costs	\$4,448				
D.	Discing/Seeding					
	Surface Area (acres)	13				
	Discing/Seeding Unit Cost (\$/acre)	\$548				
	Subtotal Discing/Seeding Costs	\$7,120				
	Total CPP/Office/Yard Area Reclamation	\$156,156				
II. Access Road Reclamation (includes culverts)		CPP/Office Area	Sat No. 1	Sat No. 3	Connecting Road	Sat No. 2 to Rancher Rd
A.	Assumptions					
	Surface grade	5%	0%	0%	0%	0%
	Length of Road (ft)	13200	15840	5280	10560	2640
	Width of Road (ft)	25	30	30	30	10
	Area of road (acres)	7.6	10.9	3.6	7.3	0.6
B.	Ripping and Hauling Asphalt					
	Assumptions					
	Average Haul Distance (feet)	5500	0	0	0	0.0
	Average Thickness of Asphalt (ft)	0.5	0.5	0.5	0.5	0.5
	Ripping Cost (per acre)	\$969.18	\$969.18	\$969.18	\$969.18	\$969.18
	Volume of Asphalt (cy)	6111	8800	2933	5867	489
	Moving Materials (0% Grade)	\$1.84	\$1.84	\$1.84	\$1.84	\$1.84
	Subtotal Ripping and Hauling Asphalt	\$18,575.08	\$26,748.12	\$8,916.04	\$17,832.08	\$1,486.01
C.	Gravel Road Base Removal					
	Average haul distance (ft)	0	1000	1000	1000	0
	Gravel Road Base Width (ft)	0	14	14	14	0
	Gravel Road Base Area (acres)	0.00	5.09	1.70	3.39	0.00
	Average Road Base Depth (ft)	0	0.5	0.5	0.5	0
	Volume of Road Base (cy)	0	4107	1369	2738	0
	Moving Materials (0% Grade)	\$1.42	\$1.42	\$1.42	\$1.42	\$1.42
	Subtotal Gravel Road Base Removal Costs	\$0	\$5,823	\$1,941	\$3,882	\$0
D.	Ripping Overburden with Dozer					
	Overburden Surface Area (acres)	0.0	10.9	3.6	7.3	0.6
	Ripping Cost (per acre)	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59	\$1,330.59
	Subtotal Ripping Overburden Costs	\$0	\$14,516	\$4,839	\$9,677	\$806
E.	Topsoil Application					
	Average haul distance (ft)	1500	5000	1500	1500	1500

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Miscellaneous Reclamation											
	Topsoil Surface Area (ft ²)	330000	475200	158400	316800	26400					
	Depth of Topsoil (ft)	0	0	0	0	0					
	Volume of Topsoil (cy)	0	0	0	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					
F.	Discing/Seeding										
	Surface Area (acres)	7.6	10.9	3.6	7.3	0.6					
	Discing/Seeding Unit Cost (\$/acre)	\$548	\$548	\$548	\$548	\$548					
	Subtotal Discing/Seeding Costs	\$4,149	\$5,975	\$1,992	\$3,983	\$332					
	Multiplier for Projected Additions	0	0	0	0	0					
	Subtotal Reclamation Costs per Access Road	\$22,724	\$53,062	\$17,688	\$35,374	\$2,624					
	Total Access Road Reclamation Costs	\$131,472									
III. Waste Water Pipeline Reclamation											
	Length of Trench (ft)	24000	22000	2200	13000	4000	10950	9700	24000	5600	
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	
	Subtotal Trunkline Removal and Loading Costs	\$89,119	\$81,693	\$8,169	\$48,273	\$14,853	\$40,661	\$36,019	\$89,119	\$20,794	
B.	Transport and Disposal Costs (NRC-Licensed Facility)										
1.	3" HDPE Trunkline										
	Piping Length (ft)	24000	0	2200	0	4000	0	0	0	0	
	Chipped Volume Reduction (ft ³ /ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	
	Chipped Volume (ft ³)	559	0	51	0	93	0	0	0	0	
2.	4" HDPE Trunkline										
	Piping Length (ft)	0	22000	0	13000	0	0	0	6000	0	
	Chipped Volume Reduction (ft ³ /ft)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	
	Chipped Volume (ft ³)	0	846	0	500	0	0	0	231	0	
3.	6" HDPE Trunkline										
	Piping Length (ft)	0	0	0	0	0	10950	9700	0	3500	
	Chipped Volume Reduction (ft ³ /ft)	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	
	Chipped Volume (ft ³)	0	0	0	0	0	913	809	0	292	
4.	8" HDPE Trunkline										
	Piping Length (ft)	0	0	0	0	0	0	0	24000	0	
	Chipped Volume Reduction (ft ³ /ft)	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
	Chipped Volume	0	0	0	0	0	0	0	3391	0	
	Total Pipeline Disposal Volume	559	846	51	500	93	913	809	3622	292	
	Volume for Disposal Assuming Void Space (ft ³)	615	931	56	550	102	1004	890	3984	321	
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft ³)	\$5.77	\$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	\$1,852	
C.	Discing/Seeding										
	Width of Pipeline Trench (ft)	10	10	8	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	1.0	
	Discing/Seeding Unit Cost (\$/acre)	\$548	\$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	\$563	
	Subtotal Reclamation Costs per Pipeline	\$95,684	\$89,831	\$8,713	\$52,754	\$15,844	\$47,555	\$42,130	\$114,520	\$23,209	
	Total Pipeline Reclamation Costs	\$490,240									
IV. Radium Settling Basin Reclamation											
	*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	\$15,687	\$15,687								
D.	Site Backfill	\$14,334	\$14,334								
E.	Revegetation	\$6,318	\$6,318								
F.	Transportation & Disposal to 11e(2) Facility										

**Cameco Resources
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[illegible]

**Cameco Resources
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[illegible]

**Cameco Resources
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	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													
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 Annual Water Balance/Schedule Update)													
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	1	1	1	1	1	1	1	1	1	1	0
Total # of Years	0	0	3	3	3	3	3	6	14	6	8	10	0
End of Restoration (yrs)	13												
End of Stability (yrs)	14												
Number of Header Houses per Wellfield													
Current	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 (ft3)	1600												
Number of Wells (In Service) per Wellfield													
Production Wells (P)				Inc in MU-C	Inc in MU-C		Inc in MU-D						
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)													
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.)													
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
Wellfield 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
Wellfield Fencing													
Length of Fencing (ft)	0	0	18694	0	0	14060	0	18426	29540	9680	0	9977	0

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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 Surface Metal and Industrial Mineral Mines - Western U.S. (Table 5)					
**Mountain States Employers Council. 2012 Survey, Mining Industry Compensation & 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 - 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		\$1.8774	included	pound	Actual Costs-2013
Sodium Sulfide		\$0.5520	included	pound	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		\$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		\$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 (\$)	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 (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***		\$35.32	\$38.85	hour	Equipment Watch
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 12, Section 12(b)					
**Equipment Watch Rental Rate Blue Book: Volume 1 (1st Half 2013)					
***1 3/4 Ton 4x4 Truck with Hoist					
Quoted Costs		Rate (\$)	Profit & Overhead	Units	Source
Deep Disposal Well - Plug & Abandonment Costs		\$13.62	included	foot	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	Appendix C	\$1.671	\$1.838	bcy	Guideline-10/2012
Moving Materials: One-Way Distance 150 feet, 0% grade	Appendix E	\$0.351	\$0.386	lcy	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	acre	Guideline-10/2012
Ripping Operating Costs (Overburden)	Appendix I1	\$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

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Building Demo Disposal (Average)	Appendix K	\$9.50	\$10.45	cy	Guideline-10/2012	
Concrete (Floor) Demolition - 6" Thick with Rebar	Appendix K	\$5.31	\$5.84	ft2	Guideline-10/2012	
Concrete (Footings) 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	cy	Guideline-10/2012	
Drill Hole Abandonment: Wet Exploration Holes >25 holes	Appendix L	\$3.00	\$3.30	foot	Guideline-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	Guideline-10/2012	
Incidental Costs: Capping	Appendix L	\$10	\$11	each	Guideline-10/2012	
Incidental Costs: Site Location	Appendix L	\$10	\$11	site	Guideline-10/2012	
Incidental Costs: Remove Pump, Wiring, and Drop Pipe	Appendix L	\$0.40	\$0.44	foot	Guideline-10/2012	
Incidental Costs: Remove and Dispose Casing (top few feet)	Appendix L	\$30.00	\$33.00	well	Guideline-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	Guideline-10/2012	
Revegetation Costs-Seed	Appendix Q	\$106.00	\$116.60	acre	Actual Costs-2013	
Revegetation Costs-Mulch	Appendix Q	\$91.88	\$101.07	acre	Actual Costs-2013	
Revegetation Costs-Fertilizer	Appendix Q	\$300.00	\$330.00	acre	Actual Costs-2013	
Revegetation Costs-Total	Appendix Q	\$497.88	\$547.67	acre	Actual Costs-2013	
*Includes additional 10% Profit & Overhead per WDEQ/LQD Guideline No. 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)	Transport (\$/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). Transportation and disposal costs include profit and overhead of service provider. Conversion factors of 2 cy/ton and 0.33 to account for air space in buildings based on FEMA - Debris Estimating Field Guide, FEMA 320, September 2010.						
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)	Transport (\$/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. Transportation 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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GROUNDWATER RESTORATION UNIT COSTS							
Wellfield Pumping							
Equipment							
Wellfield Pump Sizes	5	hp					
Wellfield Pump Flow Rate	25	gpm					
kW to HP Conversion Factor	0.746						
Cost of Electricity	\$0.0597	kWhr					
Efficiency	80%						
Wellfield Pumping Cost	\$0.19	per kgal					
Satellite Pumping							
Equipment							
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							
Equipment							
Deep Disposal Well Pump Size	75	hp					
Deep Disposal Well Flow Rate	75	gpm					
kW to HP Conversion Factor	0.746						
Cost of Electricity	\$0.0597	kWhr					
Efficiency	90%						
Reagent							
Antiscalant Cost (Scaletrol)	\$4.5177	per lb					
Density of Water	8.34	lbs/gal					
Specific Gravity (Scaletrol)	1.284						
Antiscalant Cost (Scaletrol)	\$48.38	per gal					
Antiscalant Dose (ScaleTrol)	0.0000048	gal/gal					
Deep Disposal Well Cost	\$1.06	per kgal					
PSR2 & Irrigator							
Equipment							
Feed Water Pump	40	hp					
Irrigator Pump	50	hp					
Sampler	0.5	kW					
Irrigator Flow Rate	200	gpm					
kW to HP Conversion Factor	0.746						
Cost of Electricity	\$0.0597	kWhr					
Efficiency	90%						
PSR 2 & Irrigator Cost	\$0.37	per kgal					
Total Groundwater Sweep Costs	\$1.22	per kgal					
Reverse Osmosis							
Equipment							
System Capacity	250	gpm					
Unit Pump	60	hp					
Injection Pump	60	hp					
Waste Pump	15	hp					
kW to HP Conversion Factor	0.746						
Cost of Electricity	\$0.0597	kWhr					
Efficiency	90%						
Reagents							
Tripolyphosphate Usage Rate	0.00000130	lb/gal					
Tripolyphosphate Cost	\$1.0893	per lb					
EDTA Usage Rate	0.00000315	lb/gal					
EDTA Cost	\$1.8774	per lb					
Antiscalant Cost (Hypersperse)	\$3.9050	per lb					
Density of Water	8.34	lbs/gal					
Specific Gravity (Hypersperse)	1.124						
Antiscalant Cost (Hypersperse)	\$36.6061	per gal					

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Antiscalant Dose (Hypersperse)	0.000036	gal/gal			
Sodium Sulfide Usage Rate	0.00017	lb/gal			
Sodium Sulfide Cost	\$0.5520	per lb			
RO Cost (without Reductant)	\$0.58	per kgal			
RO Cost (with Reductant)	\$0.67	per kgal			
MIT Costs for Production Wells					
Equipment					
Pulling Unit Hours	4	hrs/day			
Pulling Unit Cost	\$38.85	\$/hour			
MIT Unit Hours	8	hrs/day			
MIT Unit Cost	\$33.10	\$/hour			
Labor					
Required Hours	8	hrs/day			
Required Laborers	1.5	per day			
Labor Cost	\$32.20	\$/hour			
Productivity	4	wells/day			
MIT Cost for Production Wells	\$201.65	per well			
MIT Costs for Injection Wells					
Equipment					
Pulling Unit Hours	0	hrs/day			
Pulling Unit Cost	\$38.85	\$/hour			
MIT Unit Hours	8	hrs/day			
MIT Unit Cost	\$33.10	\$/hour			
Labor					
Required Hours	8	hrs/day			
Required Laborers	1	per day			
Labor Cost	\$32.20	\$/hour			
Productivity	4	wells/day			
MIT Cost for Injection Wells	\$130.60	per well			
Selenium Plant Operating Costs					
Plant Operation					
Selenium Plant Media Change	4	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	20.000	lb/column			
Gravel Cost	\$0.0190	\$/lb			
Disposal					
ByProduct for Disposal	63	yd ³ /year			
Disposal Cost (incl. Transport)	\$157	per yd ³			
Selenium Plant Operating Cost	\$157,852.16	per year			
Booster Pump Operating Cost					
Equipment					
Wellfield Pump Sizes	40	hp			
Number of Pumps Running (avg.)	2	per year			
Hours Running	24	per day			
kW to HP Conversion Factor	0.746				
Cost of Electricity	\$0.0597	kWhr			
Efficiency	90%				
Booster Pump Operating Costs	\$34,658.36	per year			
WELL ABANDONMENT UNIT COSTS					
Removal of Contaminated Soil Around Wells					
Equipment					
Cat 416 Backhoe Time	0.25	hours			

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Cat 416 Backhoe Cost	\$38.47	per hour			
Labor					
Radiation Technician	0.25	hours			
Radiation Technician Cost	\$35.00	per hour			
Operator	0.25	hours			
Operator Cost	\$36.40	per hour			
Disposal					
ByProduct Disposal	0.37	cubic yard			
Disposal Cost (incl. Transport)	\$156.73	per cubic yard			
Removal of Contaminated Soil Cost	\$85.46	per well			
DDW Pump Dismantling and Disposal					
Labor					
Number of Laborers	2	per day			
Number of Pumps Dismantled	0.5	per day			
Hours Per Day	8	hours			
Laborers Cost	\$32.20				
Disposal					
Volume of DDW Pump	240	ft ³			
ByProduct Disposal	\$7.32	per ft ³			
DDW Pump Dismanteling and Disposal	\$2,788.03	per pump			
WELLFIELD RECLAMATION COSTS					
Wellfield Piping Removal					
Equipment					
Trackhoe	1	per day			
Trackhoe Cost	\$110.03	per hour			
Loader	1	per day			
Loader Cost	\$58.22	per hour			
Pickup Truck	1	per day			
Pickup Cost	\$22.14	per hour			
Chipper Cost	\$52.72	per hour			
Labor					
Backhoe Operator	\$36.40	per hour			
Loader Operator	\$36.40	per hour			
Laborer	\$32.20	per hour			
Hours Per Day	8	per day			
Productivity	1500	ft/day			
Piping Removal Cost	\$1.86	per foot of pipe			
Piping Reduction					
2" Pipe	0.0107				
3" Pipe	0.0233				
4" Pipe	0.0385				
6" Pipe	0.0834				
8" Pipe	0.1413				
10" Pipe	0.2196				
12" Pipe	0.3088				
14" Pipe	0.3723				
16" Pipe	0.4864				
Production Pump Volume					
Length	66	inches			
Diameter	3.8	inches			
Cubic Inch to Cubic Foot Conversion	0.0006				
Production Pump Volume	0.43	cubic feet			
Trunk Line Removal					
Equipment					
Trackhoe	1	per day			
Trackhoe Cost	\$110.03	per hour			
Loader	1	per day			
Loader Cost	\$58.22	per hour			
Pickup Truck	1	per day			
Pickup Cost	\$22.14	per hour			
Chipper Cost	\$52.72	per hour			
Labor					
Trackhoe Operator	\$36.40	per hour			

Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate

	Loader Operator	\$36.40	per hour			
	Laborer	\$32.20	per hour			
	Hours Per Day	8	per day			
	Productivity	750	ft/day			
	Buried Piping Removal Cost	\$3.71	per foot of pipe			
Removal of Well Head Covers						
	Volume of Well Head Cover (ft³)	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	\$36.40	per hour			
	Productivity	10	wellheads per hour			
	Disposal					
	Void space	10%				
	Transportation and Disposal Cost	\$1.56	per ft3			
	Removal of Well Head Cover Cost	\$11.72	per well			
Header House Decontamination						
	Decontamination					
	Acid Usage	20	pounds per header house			
	Acid Cost	\$0.20	per pound			
	Labor					
	Radiation Tech	\$35.00	per hour			
	Number of Operators	2	per day			
	Operator	\$36.40	per hour			
	Hours Per Day	8	per day			
	Productivity	1	header house per day			
	Header House Decontamination Cost	\$ 621.38	per header house			
Header House Heating						
	Heater Power Usage	12.5	kW			
	Days Used	180	days per year			
	Electricity Cost	\$0.0597	kWhr			
	Header House Heating Cost	\$3.222	per year			
WELLFIELD AND SATELLITE AND SURFACE RECLAMATION						
Wellfield Road Reclamation						
	Gravel Road Base					
	Average Depth	0.25	feet			
	Average Width	10	feet			
	Material Moved (0% Grade)	\$1.42	bcy			
	Cubic Yard to Cubic Feet Conversion	0.04				
	Scarification of Road					
	Scarification Costs	\$76	per acre			
	Average Width	25	feet			
	Acre to Sq. Foot Conversion	2.29568E-05				
	Grading Cost	\$83	per acre			
	Topsoil Depth	0.67	feet			
	Discing/Seeding Costs	\$548	per acre			
	Linear Feet for Unit Cost	1000	feet			
	Wellfield Road Reclamation Cost	\$1,416.31	per 1000 feet			
EQUIPMENT COSTS						
Tank Removal						
	Equipment					
	Loader	\$58.22	per hour			
	Trackhoe	\$110.03	per hour			
	Manlift	\$52.29	per hour			
	Pickup	\$22.14	per hour			
	Lift Truck	\$62.08	per hour			

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Labor			
Number of Operators	4		
Operator Cost	\$36.40	per hour	
Hours Per Day	8	per day	
Productivity	25	ft ³ /day	
Tank Removal Cost	\$144	per ft³	
Pipe Removal			
Equipment			
Manlift	\$52.29	per hour	
Pickup	\$22.14	per hour	
Lift Truck	\$62.08	per hour	
Chipper	\$52.72	per hour	
Labor			
Number of Operators	4		
Operator Cost	\$36.40	per hour	
Hours Per Day	8	per day	
Productivity	300	ft/day	
Pipe Removal Cost (Inside Buildings)	\$8.93	per ft	
Pump Removal			
Equipment			
Truck	\$22.14	per hour	
Skid Steer	\$40.23	per hour	
Labor			
Number of Operators	2		
Operator Cost	\$36.40	per hour	
Hours Per Day	8	per day	
Productivity	10	ft ³ /day	
Pump Removal	\$108.14	per ft³	
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	
Hours Per Day	8	per day	
Productivity	125	ft ³ /day	
Dryer Removal Cost	\$14.71	per ft³	
RO and Degasser Removal			
Equipment			
Truck	\$22.14	per hour	
Lift Truck	\$62.08	per hour	
Labor			
Number of Operators	2		
Operator Cost	\$36.40	per hour	
Hours Per Day	8	per day	
Productivity	250	ft ³ /day	
RO and Degasser Removal Cost	\$5.02	per ft³	
BUILDING COSTS			
Acid Wash Walls			
Acid			
Acid Usage	0.05	per square foot	
Acid Cost	\$0.20	per pound	
Equipment			
Manlift	\$52.29	per hour	
Labor			
Laborer	2	people	
Laborer Cost	\$32.20	per hour	

**Cameco Resources
Highland Uranium Project
2013-14 Surety Estimate**

Productivity	125	square feet per hour			
Acid Wash Walls Cost	\$0.94	per square foot			
Acid Wash Floors					
Acid					
Acid Usage	0.05	per square foot			
Acid Cost	\$0.20	per pound			
Labor					
Laborer	2	people			
Laborer Cost	\$32.20	per hour			
Productivity	125	square feet per hour			
Acid Wash Floors Cost	\$0.53	per square foot			
Electrical Power					
*Pumping Costs for Operating DDWs, RO, and Wellfield are included in GW Rest Costs					
Satellite 2					
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP			
Lighting	35.0625	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 2 Power Cost	\$26.221	per year			
Satellite 3					
Miscellaneous Pumps, Fans, Sumps, etc.	22.5	HP			
Lighting	35.0625	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					
Miscellaneous Pumps, Fans, Sumps, etc.	72.5	HP			
Lighting	23.3	kW			
kW to HP Conversion Factor	0.746	kW (per square ft)			
Electricity Cost	\$0.0597	per kWhr			
Efficiency Factor	90%				
Operating Hours Per Year	8760	hours			
Selenium Power Cost	\$37.619	per year			
DDW - Typical					
Miscellaneous Pumps, Fans, Sumps, etc.	2	HP			
Lighting	0.49	kW			
Heating	12.5	kW	assume operation only 6 mos/yr		
kW to HP Conversion Factor	0.746	kW/hp			
Electricity Cost	\$0.0597	per kWhr			
Efficiency Factor	90%				
Operating Hours Per Year	8760	hours			
DDW Electrical Cost	\$4.225	per year			
MISCELLANEOUS RECLAMATION AND RESTORATION COSTS					
Liner and Subsoil Removal Costs					
Equipment					
Trackhoe Cost	\$ 110.03	per hour			
Loader Cost	\$ 58.22	per hour			
Labor					
Operator	36.40	per hour			
Productivity	40	cubic yards/hour			
Total Removal	\$ 5.12	per cubic yard			

Highland Water Balance Permit 603

7-Jun-13
Assumes 9 Pure Volumes of Treatment (1 P.V. GWS and 8 P.V. RO)
Rev. 8

Year				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Production Flows																						
Total Production Flow (gpm)				5370	3825	2580	1755	1330	870	370	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	0	0	0	0	0	0	0	0	0	0
Misc. GWS					10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Control Bleed (gpm)				40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Restoration Flows																						
NU C (gal) (RO)	PV With Flair (Kgal)	GWS PV to Finish	RO PV to Finish																			
GWS (gal)	84,828	0	2	360	100																	
Total Disposal (gal)				72	25																	
NU D (gal) (RO)	32,311	0	1	50	20																	
GWS (gal)				10	5																	
Total Disposal (gal)				10	5																	
NU D Ext. (gal) (RO)	19,235	0	1	50	20																	
GWS (gal)				10	5																	
Total Disposal (gal)				10	5																	
NU E (gal) (RO)	91,086	0.7	7	100	400	400	400	400														
GWS (gal)				30	24	95	100	100	100													
Total Disposal (gal)				30	25	100	100	100	100													
NU H (gal) (RO)	90,870	1	8	400	400	400	400	400														
GWS (gal)				90	10	10	100	100	75													
Total Disposal (gal)				100	100	100	100	100	75													
NU I (gal) (RO)	84,786	1	8	200	200	200	200	200	400	50												
GWS (gal)				48	48	48	71	100	13													
Total Disposal (gal)				50	50	50	75	100	13													
NU J (gal) (RO)	232,906	1	8	150	600	600	600	600	600	600	400	600	400									
GWS (gal)				88	143	143	143	143	150	150	150	150	150	100								
Total Disposal (gal)				88	150	150	150	150	150	150	150	150	150	100								
NU J (gal) (RO)	66,817	1	8	600	400	200																
GWS (gal)				143	100	50																
Total Disposal (gal)				150	100	50																
NU K (gal) (RO)	84,214	1	8	200	400	400	400	400	400	100	100	100	100	100	100	100	100	100	100	100	100	100
GWS (gal)				48	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Total Disposal (gal)				50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
NU K North (gal) (RO)	78,568	1	8	200	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
GWS (gal)				48	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Total Disposal (gal)				50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total Restoration Disposal (gpm)				122	210	250	250	250	100	250	250	250	250	250	250	250	150	0	0	0	0	0
Restoration Water From Smith Ranch (gpm)																						
Installed RO Capacity (gpm) (feed)	Feed (gpm)	Feed (Future)																				
	200																					
	200																					
	100																					
	250																					
	250																					
Total RO Capacity (gpm)	1350																					
Deep Disposal Well Capacity (gpm)	Permitted	Current	Future																			
Morton 1-20 (gpm)	147	30		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
DDW 5 (gpm)	158	30		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Vulcan 33-27 (gpm)	105	50		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
PSR2 Evaporation (gpm)	20	20		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Irrigator Circle 2 (gpm)	180	180		180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	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	100
Total Available		310	300	310	310	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
HUP Resin Transfer				6.4	11	11.2	9.5	11.3	11.9	12.4	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.1	9	7.1	6	5.2
Total Production Bleed (gpm)				53.7	38.3	25.8	17.6	13.3	8.7	3.7	2.7	2	0	0	0	0	0	0	0	0	0	0
Misc. GWS				0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Control Bleed (gpm)				40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Total Restoration Disposal (gpm)				122	210	250	250	250	100	250	250	250	250	250	250	250	150	0	0	0	0	0
Total Disposal Required (gpm)				215.7	309.3	337	327.1	324.5	170.6	316.1	315.6	314.9	312.9	312.9	312.9	312.9	312.9	212.9	62.1	59	57.1	55.2
Water from Smith Ranch				0	0	0	25	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Total Disposal Balance				94	1	78	58	11	164	19	19	20	22	22	22	22	122	273	276	278	279	280