Cameco

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June 30, 2011

Mr. Douglas Mandeville
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
#2 White Flint, T7E18
Rockville, MD 20852-27381

RE: Smith Ranch-Highland Uranium Project, Docket No. 40-8964, License SUA-1548
2011-12 Surety Estimate Updates

Dear Mr. Mandeville:

Pursuant to License Condition 9.5 of Source Materials License SUA-1548, Power Resources, Inc. d/b/a/ Cameco Resources is herein providing two (2) paper copies of the Smith Ranch-Highland 2011-12 Surety Estimate Revisions for NRC review and approval. These estimates are consistent with those recently submitted in the Permit Nos. 633 and 603 Annual Reports to the Wyoming Department of Environmental Quality. The updates result in proposed surety amounts of $78,839,439 and $79,594,406 for the Smith Ranch and Highland Uranium Projects, respectively.

If you have any questions, please contact me at (307) 316-7588.

Sincerely,

Josh Leftwich
Director, Radiation Safety & Licensing

JL/sb

Att Permit 633 Smith Ranch Uranium Project 2011-12 Surety Estimate
Permit 603 Highland Uranium Project 2011-12 Surety Estimate

cc: File SRH 4.6.4.1
ec: CR-Cheyenne

Cameco Resources
Smith Ranch Uranium Project
2011-12 Surety Estimate

Smith Ranch Reclamation Cost Estimate, June 30, 2011

I.	Groundwater Restoration (GW REST Sheet)		$25,632,881
II.	Well Abandonment and Wellfield Reclamation (WA, WF REC and WF-SAT-SURF Sheets)		$28,826,257
III.	Equipment and Building Costs (EQUIP, BLDGS Sheets)		$ 7,220,111
IV.	Miscellaneous Site Reclamation (MISC REC Sheet)		$1,392,302
	Subtotal Reclamation Cost		$63,071,551
	Contingency	25%	$15,767,888
		TOTAL	$78,839,439

Permit 633

items highlighted in yellow have changed from previous version

Ground Water Restoration

			Mine Unit-1	Mine Unit-2	Mine Unit-3/3Ext	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit 8
I. Ground Water Sweep Costs															
Estimated PV's			0	1	1	1	1	1	1	1	1	0	0	1	1
Total Kgals for GWS			0	125235	151878	119216	137426	52669	157279	136376	167880	0	0	53608	53608
Bleed to Deep Disposal Well (%)			100	100	100	100	100	100	100	100	100	100	100	100	100
Groundwater Sweep Unit Cost ($/Kgal)			$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15
Subtotal Ground Water Sweep Costs per Wellfield			**$0.00**	**$143,561.44**	**$174,103.28**	**$136,661.64**	**$157,536.43**	**$60,376.39**	**$180,294.64**	**$156,332.77**	**$192,446.96**	**$0.00**	**$0.00**	**$61,452.80**	**$61,452.80**
Total Ground Water Sweep Costs			**$1,262,766.35**												
II. Reverse Osmosis Costs															
Estimated PV's			0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	0	0	4.5	4.5
Total Kgals for RO			0	563,558	683,451	536,472	618,417	237,011	707,756	613,692	755,460	0	0	241,236	241,236
Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Reverse Osmosis Unit Cost ($/Kgal)			$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40
Brine volume for disposal			0	84,534	102,518	80,471	92,763	35,552	106,163	92,054	113,319	0	0	36,185	36,185
DWW Disposal Cost($/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
Disopsal Cost per wellfield			$0.00	$55,981.11	$67,890.76	$53,290.57	$61,430.59	$23,543.49	$70,305.05	$60,961.24	$75,043.79	$0.00	$0.00	$23,963.23	$23,963.23
Subtotal Reverse Osmosis & Disposal Costs per Wellfield			**$0.00**	**$283,711.86**	**$344,069.87**	**$270,076.20**	**$311,329.79**	**$119,318.24**	**$356,305.49**	**$308,951.08**	**$380,321.38**	**$0.00**	**$0.00**	**$121,445.49**	**$121,445.49**
Total Reverse Osmosis Costs			**$2,495,529.40**												
II. Reverse Osmosis with Chemical Reductant Costs															
Estimated PV's			3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Total Kgals for RO			62,837	125,235	151,878	119,216	137,426	52,669	157,279	136,376	167,880	0	0	53,608	53,608
Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Reverse Osmosis with chemical reductant Unit Cost ($/Kgal)			$0.44	$0.44	$0 44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44
Brine volume for disposal			9,426	18,785	22,782	17,882	20,614	7,900	23,592	20,456	25,182	0	0	8,041	8,041
DWW Disposal Cost($/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
Disopsal Cost per wellfield			$6,241.93	$12,440.25	$15,086 84	$11,842 35	$13,651.24	$5,231 89	$15,623.35	$13,546.94	$16,676.40	$0.00	$0.00	$5,325.16	$5,325.16
Subtotal Reverse Osmosis Chemical Reductant & Disposal Costs per Wellfield			**$34,021.85**	**$67,806.01**	**$82,231.34**	**$64,547.14**	**$74,406.59**	**$28,516.59**	**$85,155.60**	**$73,838.08**	**$90,895.30**	**$0.00**	**$0.00**	**$29,024.99**	**$29,024.99**
Total Reverse Osmosis Costs			**$630,443.49**												
III. Bioremediation Costs (information only, data being compiled)															
Estimated PV's			0	0	0	0	0	0	0	0	0	0	0	0	0
Total Kgals for Bioremediation			0	0	0	0	0	0	0	0	0	0	0	0	0
Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Bioremediation Unit Cost ($/Kgal)			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0 00	$0.00	$0.00	$0.00	$0.00	$0 00	$0.00
Subtotal Bioremediation Costs per Wellfield			**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Bioremediation Costs			**$0.00**												
IV. MIT Costs															
MIT Costs per Well			$229.83	$229.83	$229.83	$229 83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83
Restoration period. (months)			36.00	232.00	230.00	276.00	88 00	108.00	56.00	83.00	83.00	0.00	0.00	39.00	12.00
Number of MIT's req'd for Prod & Inj wells			170	1,458	1,403	2,617	974	1,071	767	819	1,008	0	0	117	12
Subtotal MIT Mine Unit			**$39,163.60**	**$335,037.24**	**$322,456.17**	**$601,565.77**	**$223,827.79**	**$246,151.50**	**$176,328.13**	**$188,219.71**	**$231,775.43**	**$0.00**	**$0.00**	**$26,890.50**	**$2,758.00**
5-year MIT Costs for Disposal Wells	$5,907.53														
Number of DDWs	5														
Number of MITs per DDW	5														
Subtotal MIT DDWs			**$147,688.25**												
Total MIT Costs			**$2,539,104.08**												
V. Monitoring and Sampling Costs															
Modified Guideline 8 analysis =	$337.00	analysis													
6 parameter contract laboratory analysis =	$100 00	analysis													
Total monitor wells			62	50	59	90	83	56	128	103	153	0	0	80	120
Groundwater sweep duration (months)			0.00	72.00	72.00	72.00	16.00	24.00	13.00	21.00	21.00	0.00	0.00	8.00	0.00
Reverse Osmosis duration (months)			24 00	148.00	146.00	192.00	60 00	72.00	31.00	50.00	50.00	0.00	0.00	19.00	0.00
Stabilization duration (months)			12	12	12	12	12	12	12	12	12	0	0	12	12
A. Monitor Well Sampling															
1. Well Sampling prior to restoration start															
# of Wells			62	50	59	90	83	56	128	103	153	0	0	80	120

Cameco Resources
Smith Ranch Uranium Project
2011-12 Surety Estimate

Ground Water Restoration															
				Mine Unit-1	Mine Unit-2	Mine Unit-3/3Ext	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit 8
		$/sample		$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
	2.	Groundwater Sweep Sampling (quarterly)														
		# of Wells		62	50	59	90	83	56	128	103	153	0	0	80	120
		Total # samples		0	1200	1416	2160	443	448	555	721	1071	0	0	214	0
		$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	3.	RO Sampling (quarterly)														
		# of Wells		62	50	59	90	83	56	128	103	153	0	0	80	120
		Total # samples		496	2467	2872	5760	1660	1344	1323	1717	2550	0	0	507	0
		$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	4.	Stabilization Sampling (Guideline 8, quarterly)														
		# of Wells		17	31	24	30	61	34	34	56	153	0	0	80	120
		Total # samples		68	124	96	120	244	136	136	224	612	0	0	320	480
		$/sample		$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
	5.	Stabilization Sampling (6 parameter bi-monthly)														
		# of Wells		17	31	24	30	61	34	34	56	153	0	0	80	120
		Total # samples		102	186	144	180	366	204	204	336	918	0	0	480	720
		$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	6.	Monitor Well Sampling														
		# of Wells		62	50	59	90	83	56	128	103	153	0	0	80	120
		$/sample		$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
		Total # samples (2 month intervals)		1116	5800	6785	12420	3652	3024	3584	4275	6350	0	0	1560	720
	7.	Other Laboratory Costs														
		Radon, urinalysis, etc. =	$1,000.00 month													
		Total for Other Laboratory Costs:		$36,000.00	$232,000.00	$230,000.00	$276,000.00	$88,000.00	$108,000.00	$56,000.00	$83,000.00	$83,000.00	$0.00	$0.00	$39,000.00	$12,000.00
	Subtotal Monitoring and Sampling Costs per Mine Unit			**$251,210.00**	**$1,255,938.00**	**$1,403,935.00**	**$2,398,770.00**	**$810,299.00**	**$674,704.00**	**$711,568.00**	**$898,099.00**	**$1,429,705.00**	**$0.00**	**$0.00**	**$449,900.00**	**$358,200.00**
	Total Monitoring and Sampling Costs			**$10,284,128.00**												
VI.	**Supervisory Labor Cost (for all Reclamation)**															
	Environmental Manager/RSO Support		$11,396.12													
	Restoration Manager Support		$8,079.88 month													
	HP Technician support		$4,746.08 month													
	Active restoration period (months)			36.00	232.00	230.00	276.00	88.00	108.00	56.00	83.00	83.00	0.00	0.00	39.00	12.00
	Stabilization period (months)			12	12	12	12	12	12	12	12	12	0	0	12	12
	Total Restoration Period		11 years													
	Manager support during restoration		$2,570,831.21													
	HP Technician support during restoration		$626,482.82													
	Labor Support 5 each		$2,571,140.00													
	RO ops/maint. Labor, 2 each		$1,028,456.00													
	Total Supervisory Labor Costs			**$6,796,910.03**												
	TOTAL RESTORATION COST PER WELLFIELD			**$324,395.45**	**$2,086,054.55**	**$2,326,795.66**	**$3,471,620.75**	**$1,577,399.60**	**$1,129,066.72**	**$1,509,651.86**	**$1,625,440.64**	**$2,325,144.07**	**$0.00**	**$0.00**	**$688,713.78**	**$572,881.28**
IX.	**Cost of Refurbishing Mine Unit to facilitate restoration**															
	Number of Wells, ea			31	30	0	55	0	0	0	0	0	0	0	0	0
	Cost to Refurbish Well, $/well			$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000
	Number of Bell Holes, ea			0	0	0	0	0	0	0	0	0	0	0	0	0
	Cost per Bell Hole, $/ea			$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886
	Number of Header Houses, ea			0	0	0	0	0	0	0	0	0	0	0	0	0
	Cost per Header House, $/ea			$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 cost per header house			**$434,000**	**$420,000**	**$0**	**$770,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Total Cost of Refurbishing Mine Unit to facilitate restoration			**$1,624,000**												
	TOTAL GROUND WATER RESTORATION COSTS			**$25,632,881.36**												

Cameco Resources
Smith Ranch Uranium Project
2011-12 Surety Estimate

Well Abandonment

	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit- 4	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 27	Mine Unit 21	Mine Unit 7	Mine Unit 8	Delineation Holes General	Totals
I. Well Abandonment (Wellfields)															
# of Production Wells	113	145	140	216	211	211	285	238	234	0	0	60	20		1873
# of Injection Wells	171	232	226	353	453	384	537	354	495	0	0	120	40		3365
# of Monitoring Wells	62	50	59	90	83	56	128	103	153	0	0	80	120		984
Total Number of Wells	346	427	425	659	747	651	950	695	882	0	0	260	180		6222
Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5	5		
Production, Injection and Perimeter Well Average Depth (ft)	500	850	750	850	450	500	950	950	900	800	600	950	950		744
Total Mine Unit Well Depth (ft), production wells	56500	123250	105000	183600	94950	105500	270750	226100	210600	0	0	57000	19000		1376250
Total Mine Unit Well Depth (ft), all others	116500	239700	213750	376550	241200	220000	631750	434150	583200	0	0	190000	152000		
Well Abandonment Unit Cost ($/ft. of well)	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50		
Well Abandonment (w/ pump) Unit Cost ($/ft. of well)	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80		
Subtotal Abandonment Cost per Wellfield	**$449,450.00**	**$944,350.00**	**$828,375.00**	**$1,455,455.00**	**$868,860.00**	**$845,400.00**	**$2,337,475.00**	**$1,718,455.00**	**$2,047,680.00**	**$0.00**	**$0.00**	**$634,600.00**	**$433,200.00**		**$12,563,300.00**
II. Removal of Contaminated Soil Around Wells															
# of Production and Injection Wells 5238															
Cost per well ($/well) 214.23															
Subtotal Removal of Soil Around Wells	**$1,122,136.74**														**$1,122,136.74**
III. Delineation Hole Abandonment															
# of Projected Holes	0	0	0	0	0	0	0	0	50	0	0	100	100	2550	
Average Depth (ft)	500	850	750	850	450	500	950	950	900	800	600	950	950	750	
Hole Abandonment Unit Cost ($/ft of hole)	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	
# of holes in 2-5yr revegitation period	0	0	0	0	0	0	0	0	50	0	0	100	100	2550	
Site Reclamation ($/site)	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	
Subtotal Hole Abandonment per Wellfield	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$116,176.50**	**$0.00**	**$0.00**	**$244,853.00**	**$244,853.00**	**$4,968,751.50**	
IV. Waste Disposal Well Abandonment	**DDW #1**	**DDW #2**	**DDW SRHUP 6 (SW)**	**DDW Reynolds**	**DDW SRHUP 10**	**DDW SRHUP 7**	**DDW SRHUP 8**								
A. Well Sealing															
Sealing cost per foot (in UIC permit)	$11.91	$11.91	$11.91	$11.91	$11.91	$11.91	$0.00								
Subtotal Plugging Costs per Well (in UIC permit)	$120,291	$120,291	$97,662	$100,044	$100,044	$100,044	$0								
B. Pump Dismantling and Decontamination															
Number of Persons	2	2	2	2	2	2	0								
Number of Pumps	2	2	2	2	2	2	2								
Pumps/Day	0.5	0.5	0.5	0.5	0.5	0.5	0.5								
Number of Days	4	4	4	4	4	4	4								
$/Day/Person	$263	$263	$263	$263	$263	$263	$263								
Subtotal Dismantling and Decon Costs per Well	$2,104	$2,104	$2,104	$2,104	$2,104	$2,104	$0								
C. Tubing String Disposal (NRC-Licensed Facility)															
Length of Tubing String (ft)	10,100	10,100	8,200	8,400	8,400	8,400	0								
Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875	2.875	2.875	2.875								
Volume of Tubing String (ft^3)	235	235	191	196	196	196	0								
Transportation and Disposal Unit Cost ($/ft^3)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06								
Subtotal Tubing String Disposal Costs per Well	$1,424	$1,424	$1,156	$1,184	$1,184	$1,184	$0								
Subtotal Waste Disposal Well Abandonment Costs per Well	$123,818.78	$123,818.78	$100,921.78	$103,331.78	$103,331.78	$103,331.78	$0.00								
Total Waste Disposal Well Abandonment Costs	**$658,554.66**														
Total Wellfield Abandonment Costs	**$19,918,627.90**														

Cameco Resources
Smith Ranch Uranium Project
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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3/3 Ext	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	Mine Unit-8	
I. Wellfield Piping														
Number of Header Houses per Wellfield	6	5	10	11	13	9	16	13	9		0	3	3	
Approximate Length of Piping per Header House (ft) (ave. 46 wells per with 300 ft pip	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	
Approximate Total Length of Piping (ft)	82800	69000	138000	151800	179400	124200	220800	179400	124200	0	0	41400	41400	1352400
A. Removal and Loading														
Trench Length - usually run multiple pipes in trench assume 1/4 pipe length	20700	17250	34500	37950	44850	31050	55200	44850	31050	0	0	10350	10350	
Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Wellfield Piping Removal and Loading Costs	$151,524	$126,270	$252,540	$277,794	$328,302	$227,286	$404,064	$328,302	$227,286	$0	$0	$75,762	$75,762	
B. Transport and Disposal Costs (NRC-Licensed Facility)														
Average Diameter of Piping (inches)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	
Chipped Volume Reduction (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
Chipped Volume per Wellfield (ft^3)	568	473	946	1041	1230	851	1514	1230	851	0	0	284	284	
Volume for Disposal Assuming 10% Void Space (ft^3)	624	520	1041	1145	1353	937	1665	1353	937	0	0	312	312	
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
Subtotal Wellfield Piping Transport and Disposal Costs	$3,779	$3,149	$6,304	$6,934	$8,193	$5,674	$10,083	$8,193	$5,674	$0	$0	$1,889	$1,889	
Wellfield Piping Costs per Wellfield	$155,303	$129,419	$258,844	$284,728	$336,495	$232,960	$414,147	$336,495	$232,960	$0	$0	$77,651	$77,651	
Total Wellfield Piping Costs	**$2,536,653**													
II. Well Pumps and Tubing														
Assumptions:														
60% of production/injection wells contain pumps and/or tubing														
A. Pump and Tubing Transportation and Disposal														
Number of Production Wells	113	145	140	216	211	211	285	238	234	0	0	60	20	
Number of Injection Wells	171	232	226	353	453	384	537	354	495	0	0	120	40	
1. Pump Volume														
Number of Production Wells with Pumps	68	87	84	130	127	127	171	143	140	0	0	36	12	
Average Pump Volume (ft^3)	1	1	1	1	1	1	1	1	1	1	1	1	1	
Pump Volume per Wellfield (ft^3)	68	87	84	130	127	127	171	143	140	0	0	36	12	
2. Tubing Volume														
Assumptions:														
Average tubing length/wellfield based on average well depth minus 25 ft														
Number of Production Wells with Tubing	68	87	84	130	127	127	171	143	140	0	0	36	12	
Number of Injection Wells with Tubing	103	139	136	212	272	230	322	212	297	0	0	72	24	
Average Tubing Length per Well (ft)	475	825	725	825	425	475	925	925	875	775	575	925	925	
Tubing Length per Wellfield (ft)	81225	186450	159500	282150	169575	169575	456025	328375	382375	0	0	99900	33300	
Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	2	
Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
Chipped Volume Reduction (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
Chipped Volume per Wellfield (ft^3)	557	1278	1093	1934	1162	1162	3126	2251	2621	0	0	685	228	
Volume of Pump and Tubing (ft^3)	625	1365	1177	2064	1289	1289	3297	2394	2761	0	0	721	240	
Volume for Disposal Assuming 10% Void Space (ft^3)	688	1502	1295	2270	1418	1418	3627	2633	3037	0	0	793	264	
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
Pump and Tubing Transport and Disposal Costs Per Wellfield	$4,166	$9,095	$7,842	$13,746	$8,587	$8,587	$21,964	$15,944	$18,391	$0	$0	$4,802	$1,599	
Total Pump and Tubing Disposal Costs	**$114,723**													
III. Buried Trunkline (Includes $ for fiber optic cable removal)														
Assumptions:														
Length of Trunkline Trench (ft)	5075	7600	4790	12565	19085	7500	17198	11565	2500	0	0	5400	5400	98678
A. Removal and Loading														
Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
Subtotal Trunkline Removal and Loading Costs	$9,287	$13,908	$8,766	$22,994	$34,926	$13,725	$31,472	$21,164	$4,575	$0	$0	$9,882	$9,882	
B. Transport and Disposal Costs (NRC-Licensed Facility)														
1. 2" HDPE Trunkline														
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per foot of pipe (ft^3/ft)	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	0.0107	

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3/3 Ext	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	Mine Unit-8	
Chipped Volume (ft^3)				0	0	0	0	0	0	0	0	0	0	
2. 3" HDPE Trunkline														
Piping Length (ft)	5075	7600	4790	12565	0	0	0	0	0	0	0	0	0	30030
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	
Chipped Volume (ft^3)	118	177	112	293	0	0	0	0	0	0	0	0	0	
3. 4" HDPE Trunkline														
Piping Length (ft)					0	0	0	0	0		0	0	0	0
Chipped Volume per foot of pipe (ft^3/ft)	0.0385	0.0385	0.0385	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	0	0	0	0	0	0	0	0	0	
4. 6" HDPE Trunkline														
Piping Length (ft)	2410	10000	4820	7320	28170	2320	5754	4800	2000	0	0	0	0	67594
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	
Chipped Volume (ft^3)	201	834	402	610	2349	193	480	400	167	0	0	0	0	
5. 8" HDPE Trunkline														
Piping Length (ft)	4100	0	1100	4240	4000	6266	2052	15980	3000		0	4000	4000	48738
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	
Chipped Volume (ft^3)	579	0	155	599	565	885	290	2258	424	0	0	565	565	
6. 10" HDPE Trunkline														
Piping Length (ft)	0	5200	3660	4680	6000	1400	1028	2800	0		0	2000	2000	28768
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	
Chipped Volume (ft^3)	0	1142	804	1028	1317	307	226	615	0	0	0	439	439	
7. 12" HDPE Trunkline														
Piping Length (ft)	1460	0	0	5270	0	1080	2866	4110	0		0	0	0	14786
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	
Chipped Volume (ft^3)	451	0	0	1627	0	333	885	1269	0	0	0	0	0	
8. 14" HDPE Trunkline														
Piping Length (ft)	740	0	0	0	0	6200	0	1830	0	0	0	4000	4000	16770
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	
Chipped Volume (ft^3)	276	0	0	0	0	2308	0	681	0	0	0	1489	1489	
9. 16" HDPE Trunkline														
Piping Length (ft)	1440	0	0	3620	0	0	2010	1420	0	0	0	0	0	8490
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	
Chipped Volume (ft^3)	700	0	0	1761	0	0	978	691	0	0	0	0	0	
10. 18" HDPE Trunkline														
Piping Length (ft)	0	0	0	0	24170	0	20686	7640	0		0	0	0	52496
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	
Chipped Volume (ft^3)	0	0	0	0	14877	0	12732	4702	0	0	0	0	0	
Total Chipped Volume (ft^3)	2207	1976	1361	5625	19108	4028	15590	10617	591	0	0	2494	2494	
Volume for Disposal Assuming 10% Void Space (ft^3)	2428	2173	1497	6188	21019	4431	17149	11678	650	0	0	2743	2743	
Transportation and Disposal Unit Cost ($/ft3)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
Subtotal Trunkline Transport and Disposal Costs	$14,703	$13,159	$9,065	$37,472	$127,282	$26,832	$103,847	$70,717	$3,936	$0	$0	$16,610	$16,610	
Trunkline Decommissioning Costs per Wellfield	$23,990	$27,067	$17,831	$60,466	$162,208	$40,557	$135,319	$91,881	$8,511	$0	$0	$26,492	$26,492	
Total Trunkline Decommissioning Costs	**$620,814**													
IV. Well Heads														
Total Quantity	346	427	425	659	747	651	950	695	882	0	0	260	180	
Average Well Head Volume (ft^3)	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
A. Removal														
Total Volume (ft^3)	643.56	794.22	790.5	1225.74	1389.42	1210.86	1767	1292.7	1640.52	0	0	483.6	334.8	
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	
Subtotal Well Head Demolition Costs	$160	$198	$197	$305	$346	$301	$440	$322	$408	$0	$0	$120	$83	
B. Survey and Decontamination														
Cost per Well Head	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	
Subtotal Survey and Decontamination Costs	$2,314	$2,855	$2,842	$4,406	$4,995	$4,353	$6,352	$4,647	$5,898	$0	$0	$1,739	$1,204	
C. Disposal at county landfill Facility														

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-1	Mine Unit-2	Mine Unit-3/3 Ext	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	Mine Unit-8
Total Volume (yd^3)	24	29	29	45	51	45	65	48	61	0	0	18	12
Volume for Disposal Assuming 10% Void Space (yd^3)	26	32	32	50	57	49	72	53	67	0	0	20	14
Transportation and Disposal Unit Cost ($/$yd^3$)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal county landfill Facility Disposal Costs	$211	$260	$260	$406	$463	$398	$584	$430	$544	$0	$0	$162	$114
Well Head Removal and Disposal Costs per Wellfield	$2,685	$3,313	$3,299	$5,117	$5,804	$5,052	$7,376	$5,399	$6,850	$0	$0	$2,021	$1,401
Total Well Head Removal and Disposal Costs	**$48,317**												
V. **Header Houses** (Includes Booster Stations)													
Booster Houses				1	6		3	1					
Total Quantity	6	5	10	12	19	9	19	14	9	0	0	3	3
Average Header House Volume (ft^3)	800	800	800	800	800	800	800	800	800	800	800	800	800
A. Removal													
Total Volume (ft^3)	4800	4000	8000	9600	15200	7200	15200	11200	7200	0	0	2400	2400
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230
Subtotal Building Demolition Costs	$1,102	$919	$1,837	$2,205	$3,491	$1,654	$3,491	$2,572	$1,654	$0	$0	$551	$551
B. Survey and Decontamination													
Cost per Header House	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579
Subtotal Survey and Decontamination Costs	$3,474	$2,895	$5,790	$6,948	$11,001	$5,211	$11,001	$8,106	$5,211	$0	$0	$1,737	$1,737
C. Disposal													
Total Volume (cy)	178	148	296	356	563	267	563	415	267	0	0	89	89
Volume for Disposal Assuming 10% Void Space (cy)	196	163	326	391	619	293	619	456	293	0	0	98	98
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal Off-Site County Landfill Disposal Costs	$1,591	$1,323	$2,646	$3,173	$5,023	$2,378	$5,023	$3,701	$2,378	$0	$0	$795	$795
Headerhouse Soil Removal Volume ft3 (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500	500
Disposal Unit Cost ($/ft3)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal 11e.(2) Disposal Costs	$31,313	$26,094	$52,189	$62,627	$99,159	$46,970	$99,159	$73,064	$46,970	$0	$0	$15,657	$15,657
Header House Removal and Disposal Costs per Wellfield	$37,480	$31,231	$62,462	$74,953	$118,674	$56,213	$118,674	$87,443	$56,213	$0	$0	$18,740	$18,740
Total Header House Removal and Disposal Costs	**$680,823**												
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$223,624	$200,125	$350,278	$439,010	$631,768	$343,369	$697,480	$537,162	$322,925	$0	$0	$129,706	$125,883
VI. **Vehicle Operation Costs**													
Number of Pickup Trucks/Pulling Units (Gas)	10												
Unit Cost in $/hr (UC-Equipment Costs)	$18.08												
Average Operating Time (Hrs/Year)	1,000												
Total Number of Years (Average)	11												
Total Vehicle Operation Costs	$1,988,800												
VII. **Header Houses** (Includes Booster Stations)	6	5	10	12	19	9	19	14	9	0	0	3	3
Years of Active Restoration	2	18	18	22	6	8	4	6	6	0	0	2	0
Heating Cost per Year per header house	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581
Heating Costs per year	$30,974.40	$236,610.00	$468,918.00	$681,436.80	$310,604.40	$185,846.40	$179,823.60	$213,809.40	$137,448.90	$0.00	$0.00	$17,423.10	$0.00
Total Header Heating cost	**$2,462,895**												
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$8,453,025**												

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Wellfield and Satellite Surface Reclamation	Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-3 2nd Comp.	Mine Unit-4	Mine Unit-4A	Mine Unit-15	Mine Unit-15A	Mine Unit-K	Mine Unit-9	Mine Unit-10	Mine Unit-27	Mine Unit-21	Mine Unit-7	Mine Unit-8
I. Wellfield Pattern Area, and Road Reclamation															
Area (acres)	29.3	60.0	47.3	17.0	71.9	35.0	67.4	25.6	89.4	66.5	81.9			28.9	28.9
Disking/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Pattern Area and Road Reclamation Costs	$17,740	$36,359	$28,660	$10,308	$43,625	$21,223	$40,891	$15,529	$54,224	$40,330	$49,653	$0	$0	$17,536	$17,536
Total Wellfield Area Reclamation Costs	$370,078														
II. Laydown area reclamation															
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	2	1	1				
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground															
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer															
Ripping Unit Cost per WDEQ Guideline No.12, App.11 ($/acre)	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903	$903
Subtotal Ripping Costs	$903	$903	$903	$903	$903	$903	$903	$903	$1,354	$903	$903	$0	$0	$0	$0
B. Topsoil Application with Scraper															
Volume of Topsoil Removed (cy)	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,621	1,081	1,081	0	0	0	0
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85
Subtotal Topsoil Application Costs	$921	$921	$921	$921	$921	$921	$921	$921	$1,381	$921	$921	$0	$0	$0	$0
C. Disking and Seeding															
Disking/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Disking/Seeding Costs	$606	$606	$606	$606	$606	$606	$606	$606	$910	$606	$606	$0	$0	$0	$0
Subtotal Surface Reclamation Costs per WF laydown area	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$3,645	$2,430	$2,430	$0	$0	$0	$0
Total Wellfield Laydown Area Reclamation Costs	$27,945														
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	$20,170	$38,789	$31,090	$12,738	$46,055	$23,653	$43,321	$17,959	$57,869	$42,760	$52,083	$0	$0	$17,536	$17,536
III. Satellite & DDW Area Reclamation	SR-1	SR-2	Reynolds Ranch	SRHUP #1 DDW	SRHUP #2 DDW	SRHUP #6 DDW	SRHUP #10 DDW	SRHUP #7 DDW	SRHUP #8 DDW						
Assumptions:															
Area of Disturbance (acres)	2.05	3		1	2	2	2	2	2						
Average Depth of Stripped Topsoil (ft)	1	1	1	1	1	1	1	1	1						
Surface Grade: Level Ground															
Average Length of Topsoil Haul (ft)	1000	500	500	500	500	400	400	400	400						
A. Ripping Overburden with Dozer															
Ripping Unit Cost per WDEQ Guideline No.12, App.11 ($/acre)	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70						
Subtotal Ripping Costs	$1,851	$2,708	$0	$903	$1,805	$1,805	$1,805	$1,805	$1,805						
B. Topsoil Application with Scraper															
Volume of Topsoil Removed (cy)	3307	4840	0	1613	3227	3227	3227	3227	3227						
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02						
Subtotal Topsoil Application Costs	$3,367	$4,927	$0	$1,642	$3,285	$3,285	$3,285	$3,285	$3,285						
C. Disking and Seeding															
Disking/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606						
Subtotal Disking/Seeding Costs	$1,243	$1,819	$0	$606	$1,213	$1,213	$1,213	$1,213	$1,213						
Subtotal Surface Reclamation Costs per Location	$6,461	$9,454	$0	$3,151	$6,303	$6,303	$6,303	$6,303	$6,303						
Total Satellite Building Area Reclamation Costs	$50,581														
Total	$454,604														

Cameco Resources
Smith Ranch Uranium Project
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Equipment Removal and Loading	CPP Ion Ex. Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Water Pumphouse	Bone Yard	Satellite SR-2	Sat. Reynolds
I. Removal and Loading Costs									
A. Tankage									
Number of Tanks	13	[redacted] 52	0	12	15	3	30	10	
Volume of Tank Construction Material (ft^3)	835	1340	300	397	260	164	1648	397	
1. Labor									
Number of Persons	3	3	3	3	3	3	3	3	3
Ft^3/Day	25	25	25	25	25	25	25	25	25
Number of Days	33	54	12	16	10	7	66	16	0
$/Day/Person	$180	$180	$180	$180	$180	$180	$180	$180	$180
Subtotal Labor Costs	$18,025	$28,912	$6,473	$8,630	$5,610	$3,538	$35,557	$8,630	$0
2. Equipment									
Number of Days	33	54	12	16	10	7	66	16	0
$/Day	$1,389	$1,389	$1,389	$1,389	$1,389	$1,389	$1,389	$1,389	$1,389
Subtotal Equipment Costs	$46,428	$74,471	$16,673	$22,230	$14,450	$9,114	$91,588	$22,230	$0
Subtotal Tankage Removal and Loading Costs	$64,453	$103,383	$23,146	$30,860	$20,060	$12,652	$127,145	$30,860	$0
B. PVC/Steel Pipe									
PVC Pipe Footage	2800	5000	0	4000	1500	0	0	4000	
Average PVC Pipe Diameter (inches)	3	3	3	3	3	3	0	3	3
Shredded PVC Pipe Volume Reduction (ft^3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.000	0.023	0.023
Volume of Shredded PVC Pipe (ft^3)	65	116	0	93	35	0	0	93	0
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 (ft^3)	216	0	0	0	0	30	0	0	0
Labor									
Number of Persons	2	2	2	2	2	2	2	2	2
Ft/Day	300	300	300	300	300	300	300	300	300
Number of Days	13	17	0	13	5	0	0	13	0
$/Day/Person	$180	$180	$180	$180	$180	$180	$180	$180	$180
Subtotal PVC/Steel Pipe Labor Costs	$4,675	$5,993	$0	$4,795	$1,798	$96	$0	$4,675	$0
Subtotal PVC/Steel Pipe Removal and Loading Costs	$4,675	$5,993	$0	$4,795	$1,798	$96	$0	$4,675	$0
C. Pumps									
Number of Pumps	21	43	0	13	12	2	0	13	
Average Volume (ft^3/pump)	4.93	4.93	0	4.93	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft^3)	103.53	211.99	0	64.09	59.16	9.86	0	64.09	0
1. Labor & Equipment									
Number of Persons	2	2	2	2	2	2	0	1	1
Pumps/Day	2	2	2	2	2	2	2	2	2
Number of Days	10.5	21.5	0	6.5	6	1	0	7	0
$/Day/Person	$181	$263	$263	$263	$263	$263	$263	$263	$263
$/ Day Equipment	$0	$314	$314	$314	$314	$314	$314	$314	$314
Subtot Subtotal Labor & Equipment Costs	$3,809	$18,069	$0	$5,463	$5,042	$840	$0	$4,042	$0
D. Dryer									
Dryer Volume (ft^3)			200						
1. Labor									
Number of Persons	0	0	5	0	0	0	0	0	0
Ft^3/Day	0	0	175	0	0	0	0	0	0
Number of Days	0	0	2	0	0	0	0	0	0
$/Day/Person	$180	$180	$180	$180	$180	$180	$180	$180	$180
Total Labor Cost	$0	$0	$1,798	$0	$0	$0	$0	$0	$0
Subtotal Dryer Dismantling and Loading Cost	$0	$0	$1,798	$0	$0	$0	$0	$0	$0

Cameco Resources
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Equipment Removal and Loading	CPP Ion Ex. Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Water Pumphouse	Bone Yard	Satellite SR-2	Sat. Reynolds
E. RO Units									
Number of RO Units									
Current	0	[redacted]	0	[redacted]	0	0	0	0	0
Planned	0	0	0	1	0	0	0	[redacted]	0
Average Volume (gpm/RO Unit)	250	250	250	250	250	250	250	250	250
Labor									
Number of Persons	2	2	2	2	2	2	2	2	2
Number of Days	0	0	0	1	1	0	0	0	0
$/Day/Person	$179.80	$179.80	$179.80	$179.80	$179.80	$179.80	$179.80	$179.80	$179.80
Subtotal RO Unit Removal and Loading Costs	$0.00	$0.00	$0.00	$359.60	$359.60	$0.00	$0.00	$0.00	$0.00
Subtotal Equipment Removal and Loading Costs per Facility	$72,937	$127,445	$24,944	$41,478	$27,260	$13,588	$127,145	$39,577	$0
Total Equipment Removal and Loading Costs	**$474,373**								
II. Transportation and Disposal Costs (NRC-Licensed Facility)									
A. Tankage									
Volume of Tank Construction Material (ft^3)	835	1340	300	397	260	164	1648	397	0
Volume for Disposal Assuming 10% Void Space (ft^3)	919	1474	330	436	286	180	1813	436	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal Tankage Transportation and Disposal Costs	$9,592	$15,385	$3,444	$4,551	$2,985	$1,879	$18,924	$4,551	$0
B. PVC / Steel Pipe									
Volume of Shredded PVC Pipe (ft^3)	65.2	116.4	0.0	93.1	34.9	0.0	0.0	93.1	0.0
Volume for Disposal Assuming 10% Void Space (ft^3)	72	128	0	102	38	0	0	102	0
Volume of Steel Pipe (ft^3)	296	0	0	0	0	30	30	0	0
Volume for Disposal Assuming 10% Void Space (ft^3)	326	0	0	0	0	33	33	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06
Subtotal PVC Pipe Transportation and Disposal Costs	$2,410	$775	$0	$618	$230	$200	$200	$618	$0
C. Pumps									
Volume of Pumps (ft^3)	103.53	211.99	0	64	59	9.86	0	64	0
Volume for Disposal Assuming 10% Void Space (ft^3)	114	233	0	70	65	11	0	70	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06
Subtotal Pump Transportation and Disposal Costs	$690	$1,411	$0	$424	$394	$67	$0	$424	$0
D. Dryer									
Dryer Volume (ft^3)	0	0	400	0	0	0	0	0	0
Volume for Disposal Assuming Dryer Remains Intact (ft^3)	0	0	400	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06
Total Dryer Transportation and Disposal Costs	$0	$0	$2,422	$0	$0	$0	$0	$0	$0
E. RO Units									
Volume of RO Units (ft^3)	0	500	0	750	0	0	0	500	
Volume for Disposal Assuming 50% Volume Reduction (ft^3)	0	250	0	375	0	0	0	250	0
Transportation and Disposal Unit Costs	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06
Subtotal RO Unit Transportation and Disposal Costs	$0	$1,514	$0	$2,271	$0	$0	$0	$1,514	$0
Subtotal Equipment Transportation and Disposal Costs per Facility	$12,692	$19,085	$5,866	$7,864	$3,609	$2,146	$19,124	$7,107	$0
Total Equipment Transportation and Disposal Costs	**$77,493**								
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	$85,629	$146,530	$30,810	$49,341	$30,869	$15,734	$146,269	$46,684	$0
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	**$551,866**								

Cameco Resources
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Building Demolition and Disposal	CPP Ion Ex. Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	DDW 1 Buildings 15x30	DDW 10 Buildings 20x24	DDW Reynolds Buildings 20x24	DDW WellHead Buildings 7 ea 8x8
I. Decontamination Costs													
A. Wall Decontamination													
Area to be Decontaminated (ft^2)	10,810	15,900	9,600	0	1,152	576	4,826	12,000	0	720	704	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78
Subtotal Wall Decontamination Costs	$8,409	$12,368	$7,468	$0	$896	$448	$3,754	$9,335	$0	$560	$548	$0	$0
B. Concrete Floor Decontamination													
Area to be Decontaminated (ft^2)	11,550	16,820	3,500	0	1,678	839	7,028	17,477	0	390	392	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$5,922	$8,624	$1,794	$0	$860	$430	$3,603	$8,960	$0	$200	$201	$0	$0
C. Deep Well Injection Costs													
Total Kgals for Injection (1 gal used per ft2)	22.36	32.72	13.1	0	2.83	1.415	11.854	29.477	0	1.11	1.096	0	0
Deep Well Injection Unit Cost ($/Kgals)	$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 Deep Well Injection Costs	$15	$22	$9	$0	$2	$1	$8	$20	$0	$1	$1	$0	$0
Subtotal Decontamination Costs per Building	$14,346	$21,014	$9,271	$0	$1,758	$879	$7,365	$18,315	$0	$761	$750	$0	$0
Total Decontamination Costs	**$87,524**												
II. Demolition Costs													
A. Building													
Volume of Building (ft^3)	346,500	588,700	122,500	120,000	16,780	8,390	175,700	314,586	8,320	3120	4800		4480
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
Subtotal Building Demolition Costs	$86,216	$146,480	$30,480	$29,858	$4,175	$2,088	$43,718	$78,275	$2,070	$776	$1,194	$0	$1,115
B. Concrete Floor													
Area of Concrete Floor (ft^2)	11,550	16,820	3,500	8000	1678	839	7028	17477	832	390	392		0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05
Subtotal Concrete Floor Demolition Costs	$58,362	$84,991	$17,685	$40,424	$8,479	$4,239	$35,512	$88,311	$4,204	$1,971	$1,981	$0	$0
C. Concrete Footing													
Length of Concrete Footing (ft)	430	519	237	360	164	116	335	529	115	90	88		160
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14
Subtotal Concrete Footing Demolition Costs	$7,796	$9,408	$4,292	$6,529	$2,972	$2,101	$6,081	$9,590	$2,086	$1,632	$1,596	$0	$2,902
Subtotal Demolition Costs per Building	$152,374	$240,879	$52,457	$76,811	$15,626	$8,428	$85,311	$176,176	$8,360	$4,379	$4,771	$0	$4,017
Total Demolition Costs	**$1,350,138**												
III. Disposal Costs													
A. Building													
Volume of Building (cy)	12833	21804	4537	4444	621	311	6507	11651	308	116	178	0	166
Off-site County Facility													
Percentage (%)	100	100	100	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	12833	21804	4537	4444	621	311	6507	11651	308	116	178	0	166
Disposal Unit Cost ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal county facility off-Site Disposal Costs	$104,147	$176,945	$36,820	$36,068	$5,044	$2,522	$52,810	$94,555	$2,501	$938	$1,443	$0	$1,347
B. Concrete Floor													
Area of Concrete Floor (ft^2)	11550	16820	3500	8000	1678	839	7028	17477	1186	390	392	0	0
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	8662.5	12615	2625	6000	1258.5	629.25	5271	13107.75	889.5	292.5	294	0	0
Volume of Concrete Floor (cy)	321	467	97	222	47	23	195	485	33	11	11	0	0
1. Off-site County disposal													
Percentage (%)	75	75	75	100	100	100	100	75	100	75	75	75	100
Volume for Disposal (cy)	241	350	73	222	47	23	195	364	33	8	8	0	0
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal county facility off-Site Disposal Costs	$1,953	$2,844	$592	$1,803	$378	$189	$1,584	$2,955	$267	$66	$66	$0	$0
2. NRC-Licensed Facility													
Percentage (%)	25	25	25	0	0	0	0	25	0	25	25	25	0
Volume for Disposal (ft^3)	2166	3154	656	0	0	0	0	3277	0	73	74	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal NRC-Licensed Facility Disposal Costs	$22,604	$32,918	$6,850	$0	$0	$0	$0	$34,204	$0	$763	$767	$0	$0
Subtotal Concrete Floor Disposal Costs	$24,557	$35,762	$7,442	$1,803	$378	$189	$1,584	$37,159	$267	$829	$833	$0	$0
C. Concrete Footing													
Length of Concrete Footing (ft)	430	519	237	360	164	116	335	529	124	90	88	0	160
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	1720	2075	947	1440	655	463	1341	2115	496	360	352	0	640
Volume of Concrete Footing (cy)	64	77	35	53	24	17	50	78	18	13	13	0	24
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal Concrete Footing Disposal Costs	$517	$624	$285	$433	$197	$139	$403	$636	$149	$108	$106	$0	$192
Subtotal Disposal Costs per Building	$129,221	$213,331	$44,547	$38,304	$5,619	$2,850	$54,797	$132,350	$2,917	$1,875	$2,382	$0	$1,539
Total Disposal Costs	**$1,035,082**												
IV. Health and Safety Costs Accounted for on GW REST													
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$295,941	$475,224	$106,275	$115,115	$23,003	$12,157	$147,473	$326,841	$11,277	$7,015	$7,903	$0	$5,556

Cameco Resources
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	CPP Ion Ex. Plant	Central Plant	Dryer Building	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building	Fresh Water Pumphouse	DDW 1 Buildings	DDW 10 Buildings	DDW Reynolds Buildings	DDW WellHead Buildings
Building Demolition and Disposal										15x30	20x24	20x24	7 ea 8x8
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	**$2,472,744**												
Building Utility Costs													
Number of years of operation required for restoration/reclamation	11	11	0	11	0	0	11	0	11	11	11	0	11
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)		$257,832.81		$87,857.08			$47,335.94		$63,903.79	$34,074.71	$37,522.31	$0.00	
TOTAL BUILDING ELECTRICITY COSTS	**$1,571,008.71**												
SUBTOTAL PROPANE AND NATURAL GAS COSTS		$ 905,576		$ 21,904			$ 9,646						
TOTAL PROPANE AND NATURAL GAS COSTS	**$ 2,624,492**												
TOTAL UTILITY COSTS	**$4,195,501**												

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Building Demolition and Disposal	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition	DDW 7 Buildings	DDW 8 Buildings
	160X120		160X120	160X120	50X80	25X40	20x24	20x24
I. Decontamination Costs								
A. Wall Decontamination								
Area to be Decontaminated (ft^2)	0	3100	0	0	0	1300	704	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78	$0.78
Subtotal Wall Decontamination Costs	$0	$2,411	$0	$0	$0	$1,011	$548	$0
B. Concrete Floor Decontamination								
Area to be Decontaminated (ft^2)	9000	2750	9000		0	1000	392	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$4,614	$1,410	$4,614	$0	$0	$513	$201	$0
C. Deep Well Injection Costs								
Total Kgals for Injection (1 gal used per ft2)	9	5.85	9	0	0	2.3	1.096	0
Deep Well Injection Unit Cost ($/Kgals)	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66
Subtotal Deep Well Injection Costs	$6	$4	$6	$0	$0	$2	$1	$0
Subtotal Decontamination Costs per Building	$4,620	$3,825	$4,620	$0	$0	$1,526	$750	$0
Total Decontamination Costs								
II. Demolition Costs								
A. Building								
Volume of Building (ft^3)	445,440	55,000	447,360		80,000	25,000	4800	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
Subtotal Building Demolition Costs	$110,834	$13,685	$111,312	$0	$19,906	$6,221	$1,194	$0
B. Concrete Floor								
Area of Concrete Floor (ft^2)	18560	2750	18640		4000	1000	392	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05
Subtotal Concrete Floor Demolition Costs	$93,783	$13,896	$94,187	$0	$20,212	$5,053	$1,981	$0
C. Concrete Footing								
Length of Concrete Footing (ft)	640	210	560		260	65	88	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14
Subtotal Concrete Footing Demolition Costs	$11,606	$3,804	$10,156	$0	$4,715	$1,179	$1,596	$0
Subtotal Demolition Costs per Building	$216,223	$31,385	$215,655	$0	$44,833	$12,453	$4,771	$0
Total Demolition Costs								
III. Disposal Costs								
A. Building								
Volume of Building (cy)	16498	2037	16569	0	2963	926	178	0
Off-site County Facility								
Percentage (%)	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	16498	2037	16569	0	2963	926	178	0
Disposal Unit Cost ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal county facility off-Site Disposal Costs	$133,885	$16,531	$134,462	$0	$24,046	$7,514	$1,443	$0
B. Concrete Floor								
Area of Concrete Floor (ft^2)	18560	2750	18640	0	4000	1000	392	0
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	13920	2062.5	13980	0	3000	750	294	0
Volume of Concrete Floor (cy)	516	76	518	0	111	28	11	0
1. Off-site County disposal								
Percentage (%)	75	75	75	75	100	90	75	75
Volume for Disposal (cy)	387	57	388	0	111	25	8	0
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal county facility off-Site Disposal Costs	$3,138	$465	$3,151	$0	$902	$203	$66	$0
2. NRC-Licensed Facility								
Percentage (%)	25	25	25	25	0	10	25	25
Volume for Disposal (ft^3)	3480	516	3495	0	0	75	74	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal NRC-Licensed Facility Disposal Costs	$36,323	$5,382	$36,480	$0	$0	$783	$767	$0
Subtotal Concrete Floor Disposal Costs	$39,461	$5,847	$39,631	$0	$902	$986	$833	$0
C. Concrete Footing								
Length of Concrete Footing (ft)	640	210	560	0	260	65	88	0
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2560	839	2240	0	1040	260	352	0
Volume of Concrete Footing (cy)	95	31	83	0	39	10	13	0
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal Concrete Footing Disposal Costs	$769	$252	$673	$0	$313	$78	$106	$0
Subtotal Disposal Costs per Building	$174,115	$22,630	$174,766	$0	$25,261	$8,578	$2,382	$0
Total Disposal Costs								
IV. Health and Safety Costs	Accounted for on GW REST							
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$394,958	$57,840	$395,041	$0	$70,094	$22,557	$7,903	$0

	Satellite SR-1	Yellowcake Warehouse	Satellite SR-2	Satellite Reynolds	Construction Shop	CPP Lab Addition	DDW 7 Buildings	DDW 8 Buildings
Building Demolition and Disposal	160X120		160X120	160X120	50X80	25X40	20x24	20x24
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS								
Building Utility Costs								
Number of years of operation required for restoration/reclamation	9	0	9		0	11	11	0
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$502,479.88		$502,479.88	$0.00		In CPP cost	$37,522.31	$0.00
TOTAL BUILDING ELECTRICITY COSTS								
SUBTOTAL PROPANE AND NATURAL GAS COSTS	$ 442,319		$ 1,245,047			In CPP cost		
TOTAL PROPANE AND NATURAL GAS COSTS								
TOTAL UTILITY COSTS								

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 Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^2$)	$5.05									
	Average Thickness of Concrete Floor (ft)	0.50									
	Volume of Concrete Floor (ft^3)	6,534									
	Volume of Concrete Floor (cy)	242									
	Off-Site CountyLandfill Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12									
	Subtotal Concrete Pad Demolition and Disposal Costs	**$67,996**									
B.	Gravel Road Base Removal										
	Average haul distance (ft)	1000									
	Gravel Road Base Area (acres)	8.0									
	Average Road Base Depth (ft)	0.5									
	Volume of Road Base (cy)	6453									
	Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.02									
	Subtotal Gravel Road Base Removal Costs	**$6,569**									
C.	Ripping Overburden with Dozer										
	Overburden Surface Area (acres)	10.6									
	Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$902.70									
	Subtotal Ripping Overburden Costs	**$9,542**									
D.	Topsoil Application										
	Area of surface disturbance (ft^2)	460426									
	Average thickness of topsoil (ft)	0.5									
	Average haul distance (ft)	2000									
	Surface grade (%)										
	Volume of Topsoil (cy)	8,526									
	Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.32									
	Subtotal Topsoil Application Costs	**$11,246**									
E.	Discing/Seeding										
	Surface Area (acres)	10.57									
	Discing/Seeding Unit Cost ($/acre)	$672									
	Subtotal Discing/Seeding Costs	**$7,107**									
	Total CPP/Office/Yard Area Reclamation	**$95,891**									
II.	**Access Road Reclamation (includes culverts)**	**CPP Access Rd.**	**CPP to SAT 3**	**Access to WF**	**MU-15 Access**	**SR2 Access**	**Reynolds Access**	**Access SRHUP 7**	**Access SRHUP 8**	**Access SRHUP 10 from MU-4**	
A.	Assumptions										
	Surface grade	1%	5%	5%	0%	5%	0	0	0	0	
	Length of Road (ft)	5,173	15,827	15,557	10,560	8,500	2,500	1,500	0	2,500	
	Width of Road (ft)	40	30	14	30	30	30	20	20	20	
	Area of road (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	0.0	1.1	
B.	Gravel Road Base Removal										
	Average haul distance (ft)	1000	1000	1000	1000	1000	1000	1000	1000	1000	
	Gravel Road Base Width (ft)	30	20	10	20	20	20	20	20	20	
	Gravel Road Base Area (acres)	3.56	7.27	3.57	4.85	3.90	1.15	0.69	0.00	1.15	
	Average Road Base Depth (ft)	0.75	0.5	0.5	0.5	0.5	0	0	0	0	
	Volume of Road Base (cy)	4311	5862	2881	3911	3148	0	0	0	0	
	Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	
	Subtotal Gravel Road Base Removal Costs	$4,388	$5,967	$2,933	$3,982	$3,205	$0	$0	$0	$0	
C.	Ripping Overburden with Dozer										
	Overburden Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	0.0	1.1	
	Ripping Unit Cost per WDEQ Guideline No.12, App.I1 ($/acre)	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	
	Subtotal Ripping Overburden Costs	$4,288	$9,840	$4,513	$6,565	$5,284	$1,554	$622	$0	$1,036	
D.	Topsoil Application										
	Average haul distance (ft)	1500	1500	1500	1500	1500	1500	1500	1500	1500	
	Topsoil Surface Area (ft^2)	206920	474810	217798	316800	255000	75000	30000	0	50000	
	Depth of Topsoil (ft)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	Volume of Topsoil (cy)	3832	8793	4033	5867	4722	1389	556	0	926	
	Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	$1.02	
	Subtotal Topsoil Application Costs	$3,901	$8,951	$4,106	$5,972	$4,807	$1,414	$566	$0	$943	
E.	Discing/Seeding										
	Surface Area (acres)	4.8	10.9	5.0	7.3	5.9	1.7	0.7	0.0	1.1	
	Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	
	Subtotal Discing/Seeding Costs	$2,880	$6,610	$3,032	$4,410	$3,550	$1,044	$418	$0	$696	

Miscellaneous Reclamation												
	Multiplier for Projected Additions	0	0	1	0	0	0	0	0	0		
	Subtotal Reclamation Costs per Access Road	$15,457	$31,368	$29,168	$20,929	$16,846	$4,012	$1,606	$0	$2,675		
	Total Access Road Reclamation Costs	**$122,061**										
III.	**Trunk Lines**	**Trunk Line #1 (CPP to MU-4)**	**Trunk Line #2 (CPP to SR-1)**	**Trunk Line #3 (MU-15 to SR-1) Included in MU 15 WF REC**	**Trunk Line #4 (O Sand Pilot)**	**Trunk Line (SR 2 to CPP)**	**WF 4 to CPP - projected**	**Waste Transfer SR2 to MU-15**	**Waste Transfer SR2 to SRHUP 8**	**Waste Transfer SRI to SRHUP 7**	**Waste Transfer CPP to Sat #3**	
	Length of Trench (ft)	7750	8500	0	5500	2500	10000	12000	10000	7000	9700	
A.	Removal and Loading											
	Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
	Subtotal Trunkline Removal and Loading Costs	$14,183	$15,555	$0	$10,065	$4,575	$18,300	$21,960	$18,300	$12,810	$17,751	
B.	Transport and Disposal Costs (NRC-Licensed Facility)											
1	2" HDPE Trunkline											
	Piping Length (ft)	7750	8500		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	9700	
	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	373	
2.	6" HDPE Trunkline											
	Piping Length (ft)	7750	17000		0	0	0	0	0	0	0	
	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	0	
3.	8" HDPE Trunkline											
	Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	
	Chipped Volume Reduction (ft^3/ft)	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	
	Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	
3.	10" HDPE Trunkline											
	Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	
	Chipped Volume Reduction (ft^3/ft)	0.2196	0.2196	0.2770	0.2770	0.2770	0.2770	0.2770	0.2770	0.2770	0.2770	
	Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	
4.	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	
5.	14" HDPE Trunkline											
	Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	
	Chipped Volume Reduction (ft^3/ft)	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	0.3723	
	Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	
5.	16" HDPE Trunkline											
	Piping Length (ft)	15500	11000		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	
6	18" HDPE Trunkline											
	Piping Length (ft)	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	373	
	Volume for Disposal Assuming 10% Void Space (ft^3)	9,095	9,583	0	8,552	10,498	423	508	423	296	410	
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
	Subtotal Transport and Disposal Costs	$55,075	$58,030	$0	$51,787	$63,571	$2,562	$3,076	$2,562	$1,792	$2,483	
C.	Discing/Seeding											
	Width of Pipeline Trench (ft)	4	4	4	4	4	5	5	5	5	4	
	Area of Pipeline Trench (acres)	0.7	0.8	0.0	0.5	0.2	1.1	1.4	1.1	0.8	0.9	
	Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606	
	Subtotal Discing/Seeding Costs	$432	$473	$0	$306	$139	$696	$835	$696	$487	$540	
	Subtotal Reclamation Costs per Pipeline	$69,690	$74,058	$0	$62,158	$68,285	$21,558	$25,871	$21,558	$15,089	$20,774	
	Total Pipeline Reclamation Costs	**$379,041**										
IV.	**Settling Basin/Storage Ponds Reclamation**	**Storage Ponds**	**Settling Pond**									
A.	Soil Sampling and Monitoring											

Miscellaneous Reclamation																
			Number of Soil Samples				15	15								
			$/Sample				$337	$337								
		Subtotal Soil Sampling and Monitoring Costs					$5,055	$5,055								
	B.	Liner/Subsoil Removal and Disposal														
			Thickness of clay liner (ft)				1	0.5								
			Thickness of contaminated subsoil (ft)				1	0.5								
			Width of Pond (ft)				200	252								
			Length of Pond (ft)				100	432								
			Depth of Pond (ft)				10	20								
			Surface area of pond (ft^2)				20000	108864								
		1.	Removal and Loading													
				Volume of Clay Liner (cy)			1481	0								
				Clay Liner Removal and Loading Unit Cost ($/cy)			$3.91	$3.91								
			Subtotal Liner Removal and Loading Costs				$5,795	$0								
		2.	Transportation and Disposal													
				Volume of Clay Liner (ft^3)			1481	0								
				Volume of Geotextile Liner (ft^2)			52	0								
				Volume of Geotextile Liner @ 40% void (ft^3)			87	0								
				Transportation and Disposal Unit Cost ($/$ft^3$)			$10.44	$10.44								
			Subtotal Liner Transportation and Disposal Costs				$16,368	$0								
		Subtotal Liner Removal and Disposal Costs					$22,163	$0								
	C.	Grade and Contour														
				Volume of Embankment Material (CY)			7,407	80,640								
				Average Grade (%)			0	0								
				Distance (ft)			50	100								
				Material Moving Unit Cost per WDEQ Guideline No.12, App.E ($/cy)			$0.092	$0.161								
		Subtotal Grade and Contour Costs					$681	$12,983								
	D.	Topsoil Application														
				Area of surface disturbance (ft^2)			20000	108899								
				Average thickness of topsoil (ft)			1	1								
				Average haul distance (ft)			1000	1000								
				Surface grade (%)			0%	3%								
			Volume of Topsoil (cy)				741	4,033								
			Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)				$1.02	$1.02								
		Subtotal Topsoil Application Costs					$754	$4,106								
	E.	Discing/Seeding														
				Area of surface disturbance (acres)			0.5	2.5								
			Discing/Seeding Unit Cost ($/acre)				$606	$606								
		Subtotal Discing/Seeding Costs					$303	$1,516								
	Subtotal Reclamation Costs						$28,956	$23,660								
	Total Settling Basin/Ponds Reclamation Costs						**$52,617**									
V.	**Miscellaneous**															
	A.	Potable Water Wells														
			Total Depth (ft) (5- 5-inch Diameter Wells, @ 750 ft)				4,500									
			Well Abandonment Unit Cost ($/ft)				$0.00									
		Subtotal Potable Water Wells Abandonment Costs					$0.00									
	B.	Fuel Area														
			Concrete Floor													
				Area of Concrete Floor (ft3)			375									
				Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft3)			$5.05									
			Subtotal Concrete Floor Demolition Costs				$1,895									
			Concrete Footing													
				Length of Concrete Footing (ft)			77									
				Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)			$18.14									
			Subtotal Concrete Footing Demolition Costs				$1,405									
		Subtotal Fuel Area Costs					$3,300									
	C	O_2 Pad MU-15														
			Concrete Floor													
				Area of Concrete Floor (ft2)			400									
				Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)			$5.05									
			Subtotal Concrete Floor Demolition Costs				$2,021									
			Concrete Footing													
				Length of Concrete Footing (ft)			80									
				Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)			$18.14									
			Subtotal Concrete Footing Demolition Costs				$1,451									
		Subtotal O_2 Pad MU-15 Costs					$3,472									
	D	O_2 Pad CPP														

Miscellaneous Reclamation				
		Concrete Floor		
		Area of Concrete Floor (ft2)		400
		Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)		$5.05
		Subtotal Concrete Floor Demolition Costs		$2,021
		Concrete Footing		
		Length of Concrete Footing (ft)		80
		Demolition Unit Cost per WDEQ Guide. No.12,App.K ($/lin. ft)		$18.14
		Subtotal Concrete Footing Demolition Costs		$1,451
		Subtotal O_2 Pad CPP Costs		$3,472
	E	Fence Removal		
		Total Length of Fence (ft)		143,003
		Fence Removal Cost		$0.37
		Subtotal Fence Removal		$52,911
	F	Removal of Drill Water Tanks - MU-10		
		Concrete base rings removal		
		Area of Concrete rings (ft2) 24" thick		132
		Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)		$5.05
		Subtotal Concrete ring Demolition Costs		$666.72
		Tank Demo and Removal		
		Tank volume		13,367
		Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft3)		$0.25
		Subtotal Tank Demolition Costs		$3,326.03
		Disposal Cost of Demolition Debris.		
		Concrete Volume (in truck) -cy 11		11
		Tank Demolisished volume -cy 50		50
		Transport and disposal - municiple landfill -cy		$8.12
		Subtotal Disposal Costs		$489.03
		Subtotal Removal of Drill Water Tanks MU-10		$4,481.77
	G	Removal of Shallow Groundwater Monitor Wells		
		MU-15A 5 shallow (20 foot) monitor wells	Total Depth	100
		Plug & Abandon	per foot	0
		Total Plug & Abandonment Cost		$ -
	Total Miscellaneous Structures Reclamation Costs			**$60,692.88**
VI.	**Infrastructure, Equipment Maintenance, Replacement and Repairs** @$62,000/yr			**$682,000.00**
	Note: 11 years is used to represent additional active restoration beyond permit 603 timeframe			
TOTAL MISCELLANEOUS RECLAMATION COSTS				**$1,392,302**
NOTE: Vehicle operation costs are captured in WF REC				

Cameco Resources
Smith Ranch Uranium Project
2011-2012 Surety Estimate

Groundwater Sweep (GWS) and Deep Disposal Well (DDW) Unit Costs

Assumptions:

1. Wellfield pumps are 5 hp pumping at 32 gpm
2. Cost of electricity = $0.0478 kwh
3. Operator labor costs = $262.97 man-day
4. One 60 hp pump at the plant or satellite feeds two DDWs
5. One 75 hp at each DDW (operating HP)
6. Each DDW can take 105 gpm

Wellfield Pumping Electrical Costs per 1000 Gallons

1000	gal/min		5	hp/pump	1440	Kgal/day	= $	0.12
25	gal/pump		0.746	Kwh/hp	$0.0478	/kwh		
40	pumps		24	hr/day				

Wellfield Pumping Labor Costs per 1000 Gallons

2	Oper.		$526	Labor cost/day		= $	0.37
$263	Cost/oper/day		1,440	kgal/day			

Groundwater Sweep Production Rate

150	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*6,570,000*	*gallons*
	min			hr			day			year		12	month			*month*

Plant or Satellite to DDW or Irrigator No. 2 Pumping Electrical Costs per 1000 Gallons

150	gal	216	Kgal/day	$0.0478	$/Kwh	= $	0.238
60	HP	0.746	Kwh/HP	24	Hr/day		

DDW Pumping Costs per 1000 gallons

105	gal	151.2	Kgal/day	$0.0478	$/Kwh	= $	0.425
75	HP	0.746	Kwh/HP	24	Hr/day		

TOTAL GWS COSTS PER 1000 GALLONS INCLUDES DISPOSAL	**= $**	**1.15**
TOTAL DDW INJECTION COSTS PER 1000 GALLONS	**= $**	**0.66**

Groundwater Reverse Osmosis (RO) and Bioremediation Unit Costs

Assumptions:																
1.	Cost of electricity =														$0.0478	KW hr
2.	Operator labor costs =														$262.97	day
3.	RO System Horsepower:															
				RO Unit Pump				60	hp							
				Permeate/Injection pump				60	hp							
				Waste pump				15	hp							
				TOTAL:				135	hp							
4.	Chemical costs:															
				Sodium Sulfide											$0.38	gal
				Methanol =											$2.43	gal
				Antiscalant =											$16.19	gal
5.	Mix Rates															
				Sodium Sulfide				0.0001	gal/gal							
				Methanol (not used)				0.00025	gal/gal							
				Antiscalant				0.00000833	gal/gal							
6.	Based on 40 pumps to produce 1000 gpm - each pump does 25 gpm														1,440	Kgal/day
7.	RO Maintenance Costs														$0.07	per Kgal
Wellfield Pumping Electrical Costs per 1000 Gallons																
40	pumps			0.746	Kwh/HP		$0.0478	electric rate						= $	$0.12	per Kgal
5	HP			24	Hrs/Day											
Reverse Osmosis/Bioremediation Electrical Costs per 1000 Gallons																
135	HP			0.746	Kwh/HP		$0.0478	electric rate						= $	0.080	per Kgal
				24	Hrs/Day											
Reverse Osmosis/Bioremediation Labor Costs per 1000 Gallons, moved labor to GW Rest page, section VIII																
0	Oper.			$0.00	Labor cost/day									= $	0.000	per Kgal
$263	Cost/oper/day			1,440	kgal/day											
Treatment chemical costs per 1000 Gallons																
	Antiscalant:															
	1000	gal	X	0.000008330	gal antiscalant	X	$16.19							= $	0.135	per Kgal
				1	gal		gal antiscalant									
	Methanol			(not used)												
	1000	gal	X	0.00000	gal methanol	X	$2.43							= $	0.000	per Kgal
				1	gal		gal methanol									
	Sodium Sulfide															
	1000	gal	X	0.00010	pounds	X	$0.38							= $	0.038	per Kgal
				1	gal		pound sodium sulfide									
Reverse Osmosis Production Rate																
	1000	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*43,800,000*	*gallons*
		min			hr			day			year		12	month			*month*
TOTAL RO COSTS PER 1000 GALLONS													= $	**0.40**		
TOTAL RO WITH CHEMICAL COSTS PER 1000 GALLONS (NO BRINE DIS)													= $	**0.44**		

Cameco Resources
Smith Ranch Uranium Project
2011 -12 Surety Estimate

FIVE YEAR MECHANICAL INTEGRITY TESTS (MIT)													
Assumptions:													
1	Pulling Unit for 8 hr/day												
2	MIT Unit for 8 hr/day												
3	Labor for operation of pulling unit requires 2 workers (one operator & one laborer)												
4	Labor for operation of MIT Unit requires 1 worker												
MIT Costs per Well													
Equipment and Labor:													
	Pulling Unit includes one operator												
		8	hours	X	$	82.74	per hour					=$	661.90
	Laborer												
		8	hours	X	$	22.48	per hour					=$	179.80
	MIT Unit includes one operator												
		8	hours	X	$	67.22	per hour					=$	537.76
											TOTAL MIT COST PER DAY	**=$**	1379.00
	Wells Completed					6	per day						
MIT COSTS PER WELL												**=$**	229.83
MIT COSTS PER DEEP DISPOSAL WELL (2010 Cost)												**=$**	5907.53

Cameco Resources
Smith Ranch Uranium Project
2011-12 Surety Estimate

WELL ABANDONMENT Unit Costs

Wells without pumps

Assumptions:												
1	Typical 8 hour working day											
2	Average 700 feet per well											
3	Plug four (4) Wells per day		700	ft	X	4	=			2,800		
Cased Well Abandonment Costs										$ per day	**$ per foot**	
	Cat 416 Backhoe	8	hours	X	$	116.88	per hour		=	$ 935.00	$0.33	
	Water Truck	8	hours	X	$	106.25	per hour		=	$ 850.00	$0.30	
	Hose Reel	8	hours	X	$	62.50	per hour		=	$ 500.00	$0.18	
	Cementer	8	hours	X	$	100.00	per hour		=	$ 800.00	$0.29	
Materials per foot of well												
	Cement	0.085714	sacks/ft	X	$	16.00	per sack		=	$ 3,840.00	$1.37	
	Bentonite	0.006	sacks/ft	X	$	4.31	per sack		=	$ 68.96	$0.02	
Total Estimated Cost per Day										$ 6,993.96		
Total Estimated Cost per Foot based on Tyler Exploration Quote #502 dated 3-11-11:											**$2.50**	

Wells with pumps

Assumptions:												
1	Typical 8 hour working day											
2	Average 700 feet per well											
3	Plug four (4) Wells per day		700	ft	X	4	=			2,800		
Cased Well Abandonment Costs										$ per day	**$ per foot**	
	Cat 416 Backhoe	8	hours	X	$	116.88	per hour		=	$ 935.00	$0.33	
	Pulling Unit	8	hours	X	$	106.25	per hour		=	$ 850.00	$0.30	
	Water Truck	8	hours	X	$	106.25	per hour		=	$ 850.00	$0.30	
	Hose Reel	8	hours	X	$	62.50	per hour		=	$ 500.00	$0.18	
	Cementer	8	hours	X	$	100.00	per hour		=	$ 800.00	$0.29	
Materials per foot of well												
	Cement	0.085714	sacks/ft	X	$	16.00	per sack		=	$ 3,840.00	$1.37	
	Bentonite	0.006	sacks/ft	X	$	4.31	per sack		=	$ 68.96	$0.02	
Total Estimated Cost per Day										$ 7,843.96		
Total Estimated Cost per Foot based on Tyler Exploration Quote #503 dated 4-29-11:											**$2.80**	

REMOVAL OF CONTAMINATED SOIL AROUND WELLS Unit Cost

Assumptions:

1. Use backhoe for 0.25 hr/well to dig
2. Radiation Technician measures extent of contamination for 0.25 hr/well

Assessment/Removal Costs								**Cost per well**
Cat 416 Backhoe								
	0.25	hours	X	$	25.42	per hour		$6.35
Radiation Technician								
	0.25	hours	X	$	27.43	per hour		$6.86
Laborer								
	0.25		X	$	32.87	per hour		$8.22
Remove Casing	1	well	X	$	15.00	per well		$15.00
Hole Plug/Cap	1	each	X	$	7.50	each		$7.50
Site Grading & Seeding	2.13	each	X	$	31.00	per sm site		$66.03
Disposal and Transportation Costs								
Contaminated Soil per Well					0.370	cy per well		
Disposal and Transportation				$	281.82	per cy		$104.27
Total Estimated Cost per Well:								**$214.23**

Cameco Resources
Smith Ranch Uranium Project
2011-12 Surety Estimate

DELINEATION HOLE ABANDONMENT Unit Costs															
Assumptions:															
1	Use the cased well abandonment cost as base.														
2	Other costs per Guideline 12 appendix L														
Hole Abandonment Costs												**$/ft (based on 750 ft holes)**			
												750			
	Cased Well Abandonment Cost (per above breakdown)										1,875.00	$ 2.500			
															Per Guidlir
	Hole Plug/Cap	1	each	X	$	7.50	each			=	7.50	$ 0.010			Area of dis
	Site Grading & Seeding	2.13	each	X	$	31.00	per sm site			=	66.03	$ 0.088			
											73.53				$250/ 10,0
															$31/site (sr
Total Estimated Cost per Well											**1,948.53**				
Total Estimated Cost per Foot:												**$2.60**			

Wellfield Building/Clay Liner Removal					
Cost per Well Head Cover					
	Radiation Tech =	27	per hour		
	Operator =	33	per hour		
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	4.1	pounds per wellhead cover		
	Acid Unit Cost =	$ 0.66	per wellhead cover		
	Total Labor Rate =	$ 66.87	per hour		
	Cleaning Rate	10	wellheads per hour		
	Survey / Decon.	**$ 6.69**	**per wellhead cover**		
Cost per Header House					
	Rad Technician =	27	per hour		
	Operator =	33	per hour		
	Number of Operators =	2			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	20	pounds per header house		
	Acid Unit Cost =	$ 3.20	per header house		
	Total Labor Rate =	$ 578.98	per hour		
	Cleaning Rate	1	header house per day		
	Survey / Decon.	**$ 578.98**	**per header house**		
Clay Liner/Subsoil Removal Cost					
	Operator =	33	per hour		
	Trackhoe =	$ 79.68	per hour		
	Loader =	$ 43.93	per hour		
	Loader Size =	1.5	cubic yards		
	Disposal Rate =	40	yards/hour		
	Total Removal	**$ 3.91**	**per cubic yard**		

	ACID WASH		
	Assumptions:		
	10% wash solution is used		
	0.25 gallon of acid wash is used per sq ft. to clean walls.		
	1 gallon of acid wash is used per sq ft. to clean floors.		
	Using the CPP square footages the assumption is as follows		
	Acid Wash (Walls)		
	Labor	2	Men
	Rate	$22.48	hr.
	Time	20	8hr. Days
	Manlift	$7,976.33	Month
	CPP Wall Area	26,710	square feet
	Labor and manlift	$0.57	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.78	per square foot
	Acid Wash (Floors)		
	Labor	2	Workers
	Rate	$22.48	hr.
	Time	15	8hr. Days
	CPP Floor Area	17820	square feet
	Labor	$0.30	per square foot
	Acid	$0.16	pound
	Consumables	$0.05	per square foot
	Total	$0.51	per square foot

Electrical Power Consumption and Costs - During Restoration

Description	Operating Horsepower	Voltage	Lighting FT^2	Lighting Watts (1.25 watts/FT^2)	Electric Heat Kw	Electric Air Condioning Kw	Kw/HP	Kwhr/HP hr	Operating Hours/yr	Kwhr/yr	Power Cost $/Kwhr	Electrical Cost/year
CPP 500 Gallon RO and Support Equip												
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Fan	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			28,370	1.25					8,760	310,652	0.04780	$ 14,849.14
Laboratory Power	5.0						0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
CPP Electrical Power Cost per Year Total												**$ 23,439.35**
SR1 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)		480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
DDW 2 injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
SR1 500 Gallon RO and Support Equip. Total												**$ 55,831.10**
SR2 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
DDW SHRUP 6 injection Pump	75.0	480					0.746	0.746	8,760	490,122	0.04780	$ 23,427.83
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
SR2 500 Gallon RO and Support Equip. Total												**$55,831.10**
Reynolds Ranch 1 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			-	1.25					8,760	-	0.04780	$ -
SR1 500 Gallon RO and Support Equip. Total												**$22,646.90**
DDW 1												
DDW PD Injection Pump (is in DDW disposal cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			390	1.25					8,760	4,271	0.04780	$ 204.13
DDW 1 Injection Pump Support Equip. Total												**$3,097.70**

DDW SHRUP #7													
DDW PD Injection Pump (is in DDW disposal cost)	-	480					0.746	0.746	8,760	-	0.04780	$	-
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$	2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$	205.18
DDW SRHUP 10 Injection Pump Support Equip. Total													**$3,411.12**
DDW SHRUP #8													
DDW PD Injection Pump (is in DDW disposal cost)	-	480					0.746	0.746	8,760	-	0.04780	$	-
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$	2,581.20
Lighting (1.25 watts/sqft)			-	1.25					8,760	-	0.04780	$	-
DDW SRHUP 10 Injection Pump Support Equip. Total													**$3,205.94**
DDW SHRUP #10													
DDW PD Injection Pump (is in DDW disposal cost)	-	480					0.746	0.746	8,760	-	0.04780	$	-
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$	2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$	205.18
DDW SRHUP 10 Injection Pump Support Equip. Total													**$3,411.12**
DDW Reynolds Ranch													
DDW PD Injection Pump (is in DDW disposal cost)		480					0.746	0.746	8,760	-	0.04780	$	-
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$	312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$	2,581.20
Lighting (1.25 watts/sqft)			-	1.25					8,760	-	0.04780	$	-
Reynolds Ranch Injection Pump Support Equip. Total													**$3,205.94**
Maintenance Shop Building													
Misc. Equip. (fans, sump pumps)	2.0	480					0.746	0.746	8,760	13,070	0.04780	$	624.74
Lighting (1.25 watts/sqft)			7,028	1.25					8,760	76,957	0.04780	$	3,678.53
Maintenance Shop Building Total												**$**	**4,303.27**
Fresh Water Pumphouse													
Water Pumps, fans, and metering pumps	10.0	480					0.746	0.746	8,760	65,350	0.04780	$	3,123.71
Lighting (1.25 watts/sqft)			1,186	1.25					8,760	12,987	0.04780	$	620.76
Heater - electric Kw	-	480			10.0				4,320	43,200	0.04780	$	2,064.96
Fresh Water Pumphouse Total												**$**	**5,809.44**
Office Building													
Water Pumps, fans	7.5	480					0.746	0.746	8,760	49,012	0.04780	$	2,342.78
Lighting (1.00 watts/sqft)			8,000	1.00					8,760	70,080	0.04780	$	3,349.82
Air conditioning - electric Kw	-	480				30.0			1,600	48,000	0.04780	$	2,294.40
Office Building Total												**$**	**7,987.01**
Header house													
Heater - electric Kw	-	480			12.5				4,320	54,000	0.04780	**$**	**2,581.20**

Cameco Resources
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Heating Costs By Building

	Flooring Sq. Feet	Wall Sq. Feet	Number Of Fans	Fan CFM	AIR Exchange BTU/hr (ΔT=40)	Building BTU/hr (ΔT=40, R=20)	Combined BTU/hr	Heating Months	Determine Which Fuel is Used $$ per Million BTUs (Fuel Specific)	Nat. Gas $$ / yr	Propane $$ / yr
CPP	31,500	26,710	5	70,000	2,882,674	116,420	2,999,094	5	$6.00	$82,325	
Maintenance Shop (est. 200 cfm)	7,028	4826	1	200	8,236	23,708	31,944	5	$6.00	$877	
SR-1	17,600	12800	3	42,000	1,729,604	60,800	1,790,404	5	$6.00	$49,147	
SR-2	19,200	11200	3	42,000	1,729,604	60,800	1,790,404	5	$17.00		$138,339
Office Building	8,000	7,680	5	1,000	41,181	31,360	72,541	5	$6.00	$1,991	
Reynolds Ranch Satellite	19,200	11200	3	42,000	1,729,604	60,800	1,790,404	5	$17.00		$138,339
					0	0	0	5			
										$132,349	$276,677

Smith Ranch Total (all restoration Bldings) $409,026

WELLFIELD PIPING REMOVAL Unit Costs

Assumptions:

1. Trenching with Trackhoe at 1000 ft per day
2. Pipeline extraction and backfilling with Trackhoe & loader at 20 1000 feet per day
4. Trackhoe operation requires 1 worker
5. Pipeline extraction requires 2 workers
6. Operating schedule: 8 hrs/day, 5 days/week

Equipment

Trackhoe											
	$ 79.68	X	8	hours		1	day		=$	0.64	per foot
	hour			day		1000	ft				
Loader											
	$ 43.93	X	8	hours	X	1	day		=$	0.35	per foot
	hour			day		1000	ft				
Pickup											
	$ 18.08	X	8	hours	X	1	day		=$	0.14	per foot
	hour			day		1000	ft				

Labor

Trackhoe Operation											
	$ 32.87	X	8	man hrs	X	1	days		=$	0.26	per foot
	man hr		1	day		1000	ft				
Loader Operation											
	$ 32.87	X	8	man hrs	X	1	day		=$	0.26	per foot
	man hr		1	day		1000	ft				
Pipeline Extraction Laborer											
	$ 22.48	X	8	man hrs	X	1	day		=$	0.18	per foot
	man hr		1	day		1000	ft				

MAIN PIPELINE REMOVAL COST =$ **1.830** per foot

Chipped Pipe Volume Calculations

Pipe Diam Inches	SDR	OD	ID	Wall Thickness	Area of Plastic in Crossection (ft^2)	Volume of Plastic per Linear Foot (ft^3)
1.5	11	1.900	1.534	0.183	0.0069	0.0069
2	11	2.375	1.917	0.229	0.0107	0.0107
3	11	3.500	2.825	0.3375	0.0233	0.0233
4	11	4.500	3.633	0.4335	0.0385	0.0385
6	11	6.625	5.348	0.6385	0.0834	0.0834
8	11	8.625	6.963	0.831	0.1413	0.1413
10	11	10.750	8.678	1.036	0.2196	0.2196
12	11	12.750	10.293	1.2285	0.3088	0.3088
14	11	14.000	11.302	1.349	0.3723	0.3723
16	11	16.000	12.916	1.542	0.4864	0.4864
18	11	18.000	14.531	1.7345	0.6155	0.6155

Equipment Costs - based on Cost Reference Guide - Equipment Watch 2010

Gasoline cost/gallon= 2 $ 2.63

Diesel Cost/ gallon = $ 2.68

GEC = ground engaging components 18%

Equipment Description	Hourly Ownership & Overhaul Cost					Field Repair & Operating Expenses (no operator labor)							Total Operating cost/hr	Total Hourly Cost	Owner's Profit & OH / hr	Cost/hr
	Ownership			Overhaul												
	Depr. $	CFC $	O'Head $	Labor $	Parts $	Labor $	Parts $	Fuel consum. Gal/hr	Fuel $	Lube $	Tires $	GEC $				
Cat 14H Grader - 14' Blade	$ 16.53	$ 7.29	$ 9.16	$ 3.95	$ 8.32	$ 3.29	$ 8.07	7.04	$ 18.87	$ 4.22	$ 5.14	$ 0.64	$ 40.23	$ 85.48	$ 15.39	$ 100.86
Bobcat S250 Skid Steer Loader	$ 1.95	$ 0.64	$ 0.78	$ 1.75	$ 1.31	$ 1.42	$ 0.93	2.78	$ 7.44	$ 0.84	$ 0.85	$ 0.08	$ 11.56	$ 17.99	$ 3.24	$ 21.23
Backhoe 416E Extendable Boom	$ 3.85	$ 1.51	$ 1.30	$ 1.21	$ 0.92	$ 1.23	$ 1.14	2.88	$ 7.71	$ 1.57	$ 0.95	$ 0.15	$ 12.75	$ 21.54	$ 3.88	$ 25.42
Cat 924H 4-WD Wheel Loader	$ 8.05	$ 2.76	$ 2.63	$ 2.30	$ 1.85	$ 2.85	$ 1.80	4.12	$ 11.05	$ 1.87	$ 1.83	$ 0.24	$ 19.64	$ 37.23	$ 6.70	$ 43.93
Cat 615C Elevating Scarper	$ 17.88	$ 7.79	$ 7.88	$ 7.89	$ 14.79	$ 12.27	$ 13.31	10.07	$ 26.98	$ 5.18	$ 3.33	$ 1.14	$ 62.21	$ 118.44	$ 21.32	$ 139.76
Cat D8R Dozer - Semi U Blade	$ 21.97	$ 7.90	$ 7.53	$ 7.89	$ 14.36	$ 8.77	$ 13.86	11.36	$ 30.44	$ 5.41	$ -	$ 2.01	$ 60.49	$ 120.14	$ 21.63	$ 141.77
Cat 320C L Trackhoe	$ 16.31	$ 5.02	$ 3.64	$ 5.70	$ 5.60	$ 5.70	$ 5.60	5.80	$ 15.53	$ 3.52	$ -	$ 0.90	$ 31.25	$ 67.52	$ 12.15	$ 79.68
Concrete Jaws Labounty - CP-60	$ 1.57	$ 0.47	$ 0.47	$ 0.81	$ 0.39	$ 7.30	$ 1.95	-	$ -	$ 0.21	$ -	$ -	$ 9.46	$ 13.17	$ 2.37	$ 15.54
Grove RT700E 50 ton RT Crane	$ 20.62	$ 6.85	$ 8.83	$ 6.07	$ 9.81	$ 5.85	$ 13.79	11.54	$ 30.93	$ 6.22	$ 5.70	$ -	$ 62.49	$ 114.67	$ 20.64	$ 135.31
Vermeer 1230 Chipper	$ 2.19	$ 0.40	$ 0.60	$ 1.21	$ 1.38	$ 0.99	$ 1.02	2.92	$ 7.82	$ 0.83	$ 0.26	$ 0.69	$ 11.61	$ 17.39	$ 3.13	$ 20.52
JLG 600S Manlift - 60 ft (Gas)	$ 11.12	$ 2.18	$ 1.51	$ 5.10	$ 4.52	$ 5.26	$ 1.87	3.11	$ 8.18	$ 1.71	$ 0.80	$ -	$ 17.82	$ 42.25	$ 7.60	$ 49.85
Pressure Washer 5 gpm 2200 psi	$ 0.21	$ 0.04	$ 0.03	$ 0.34	$ 0.09	$ 0.52	$ 0.04	0.50	$ 1.32	$ 0.17	$ -	$ -	$ 2.05	$ 2.76	$ 0.50	$ 3.25
Pick-up Truck 3/4 ton 4X4	$ 2.66	$ 0.44	$ 0.37	$ 0.59	$ 0.54	$ 0.75	$ 0.52	3.14	$ 8.26	$ 0.79	$ 0.40	$ -	$ 10.72	$ 15.32	$ 2.76	$ 18.08
Pulling Unit - Truck 1.75 Ton 4X4	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11		
Hoisting Unit - Hydraulic 18000#	$ 4.91	$ 0.90	$ 0.78	$ 1.46	$ 1.32	$ 1.80	$ 1.52	-	$ -	$ 0.46	$ -	$ -	$ 3.78	$ 13.15		
Pulling Unit Total	$ 8.97	$ 1.61	$ 1.50	$ 2.12	$ 2.20	$ 2.63	$ 2.37	6.88	$ 18.09	$ 2.12	$ 0.65	$ -	$ 25.86	$ 42.26	$ 7.61	$ 49.87
MIT Truck - 1.75 Ton 4X4 Gas	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11	$ 5.24	$ 34.35
Mobile Mixer Trailer Mounted - Cementer - Grout mixer pumper	$ 5.86	$ 1.12	$ 1.07	$ 4.16	$ 1.68	$ 5.48	$ 1.85	2.02	$ 5.41	$ 0.85	$ 0.40	$ -	$ 13.99	$ 27.88	$ 5.02	$ 32.90
GooseNeck Trailer 3 Axle - fixed	$ 2.85	$ 0.76	$ 0.45	$ 1.42	$ 0.88	$ 1.64	$ 1.22	-	$ -	$ 0.29	$ 2.24	$ -	$ 5.39	$ 11.75	$ 2.12	$ 13.87
GEHL DL-8 Rough Terrain Lift Truck	$ 8.35	$ 1.88	$ 1.92	$ 5.06	$ 4.93	$ 5.28	$ 3.31	3.23	$ 8.66	$ 1.61	$ 1.43	$ -	$ 20.29	$ 42.43	$ 7.64	$ 50.07

Cameco Resources
Smith RanchUranium Project
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Mine Unit Data

		Mine Unit-1	Mine Unit-2	Mine Unit-3	Mine Unit-4/4A/4Ext	Mine Unit-15	Mine Unit-15A	Mine Unit K	Mine Unit 9	Mine Unit 10	Mine Unit 11	Mine Unit 27	Mine Unit 21	Mine Unit 7
Total number of production wells		113	145	140	216	211	211	285	238	234	0	0	0	60
Total number of injection wells		171	232	226	353	453	384	537	354	495	0	0	0	120
Total number of monitor wells		62	50	59	90	83	56	128	103	153	0	0	0	80
Flare Factor		1.56	1.05	1.05	1.14	1.48	1.68	1.21	1.52	1.52	0	0	0	1.58
Wellfield Area (ft2)		1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	3,387,399	1,931,533	2,377,728	0	0	0	840,000
Wellfield Area (acres)		25.44	52.14	41.10	62.56	58.64	22.27	77.76	44.34	54.59	0.00	0.00	0.00	19.28
Affected Ore Zone Area (ft2)		1,108,034	2,271,426	1,790,519	2,725,270	2,554,278	970,206	3,387,399	1,931,533	2,377,728	0	0	0	840,000
Avg. Completed Thickness		18.0	26.0	40.0	19.0	18.0	16.0	19.0	23.0	23.0	0.0	0.0	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
Affected Volume (ft3)		31,113,595	62,009,930	75,201,798	59,029,348	68,045,966	26,079,137	77,876,312	67,526,394	83,125,371	0	0	0	26,544,000
Kgallons per Pore Volume		62,837	125,235	151,878	119,216	137,426	52,669	157,279	136,376	167,880	0	0	0	53,608
Number of Wells in Unit(s)														
Production Wells														
	Current	113	145	140	216	211	211	285	238	234	0	0	0	60
	Total Estimated	113	145	140	216	211	211	285	238	234	0	0	0	60
Injection Wells														
	Current	171	232	226	353	453	384	537	354	495	0	0	0	120
	Total Estimated	171	232	226	353	453	384	537	354	495	0	0	0	120
Monitor Wells														
	Current	62	50	59	90	83	56	128	103	153	30	0	0	80
	Total Estimated	62	50	59	90	83	56	128	103	153	30	0	0	80
Number of Wells per Wellfield		346	427	425	659	747	651	950	695	882	30	0	0	260
Total Number of Wells	6,072													
Average Well Depth (ft)		500	850	750	850	450	500	950	950	900	900	800	600	950
Average Diameter of Casing (inches)		5	5	5	5	4.5	4.5	4.5	5	5	0	0	0	5
Delineation Holes Estimated Next Report Period		0	0	0	0	0	0	0	0	50	100	0	0	100
Length of Fencing (ft)		16,487	11580	7388	25047	7074	0	23271	21887	21595	0	0	0	8674
Number of Deep Disposal Wells	5													

Electrical Costs			
		2009 Actual	
Power cost		$0.0478	kw1hr
Kilowatt to Horsepower		0.746	Kw/HP
Horsepower per gallon per minute		0.167	HP/gpm
Labor Rates			
Latest Available, Wyoming, Mountain States Employers Council, July, 2009		Inc 45% benefits (i.e., overhead)	
Environmental Manager/RSO	$45.43	$65.87	hour
Restoration Manager/Hydrologist	$32.21	$46.70	hour
Operator	$22.67	$32.87	hour
Laborer	$15.50	$22.48	hour
Engineer	$32.21	$46.70	hour
Radiation/Environmental Engineering Technician	$18.92	$27.43	hour
2,080 working hours in a year	173	hours per month	
Chemical Costs			
		2010 Actual	
Antiscalant for RO		$16.19	gal
Sodium Sulfide		$0.38	pound
Methanol		$2.43	gal
Cement		$5.94	sack
Bentonite Tubes		$2.90	tube
Plug Gel		$7.30	50# sack
Well Cap - Guideline 12		$7.50	each
Hydrochloric Acid		$0.16	pound
Analytical Costs			
		2010 Actual	
Modified Guideline 8 (contract lab)		$337.00	analysis
6 parameter (contract lab) Est Rate (CPI)		$100.00	analysis
Other (radon, bio, etc.) Est Rate (CPI)		$1,000.00	month

Cost to Refurbish Mine Units	$/ea
Cost to refurbiush Well	$14,000
Cost to refurbish Bell Hole	$8,886
Cost to refurbish Header House	$32,000

Equipment Costs (includes profit and overhead)

Equipment	Base Rental Rate ($/hr)	Labor Costs ($/hr)	Total ($/hr)
Cat 924G Loader	$ 43.93	N/A	$43.93
Cat 416 Backhoe	$ 25.42	N/A	$25.42
Shredder	$ 20.52	N/A	$20.52
Cat D8N Bulldozer	$ 141.77	N/A	$141.77
Pulling Unit with Operator	$ 49.87	$32.87	$82.74
MIT Unit with Operator	$ 34.35	$32.87	$67.22
GEHL DL-8 Rough Terrain Lift Truck	$ 50.07	N/A	$50.07
Drill Rig (workover, repair, P&A) with all labor, water	$ 200.00	inc	$200.00
Goose Neck Trailer	$ 13.87	N/A	$13.87
Manlift	$ 49.85	N/A	$49.85
Cementer	$ 32.90	N/A	$32.90
Crane with operator	$ 135.31	$32.87	$168.18
Cat 320C L Trackhoe	$ 79.68	N/A	$79.68
Concrete Jaws Labounty - CP-60	$ 15.54	N/A	$15.54
Pick-up Truck 3/4 ton 4X4	$ 18.08	N/A	$18.08
Hose Reel	$ 62.50	N/A	$62.50
Bobcat S250 Skid Steer Loader	$ 21.23	N/A	$21.23
Cat 14H Grader - 14' Blade	$ 100.86	N/A	$100.86
Cat 615C Elevating Scarper	$ 139.76	N/A	$139.76

Basis:
Drill rig based on current 2010 contracts
Equipment rates based on Cost Reference Guide - Equipment Watch 2010 updated addition - see UC - Equip Cost Tab

Waste Disposal Costs

Waste Form	Fee*		Load Correction Factor (Tons/Yd3)	Fee per Cubic Yard	Transport Cost		Total Trans and Disposal	
Soil, Concrete Bulk Byproduct Material - 11e2	$141.20	per Ton	1.1	$155.32	$126.50	per Yd3**	$281.82	per Yd3
							$10.44	per ft3
Unpackaged Bulk Byproduct Material (e.g., pipe) - 11e2	$165.22	per Ton	0.42	$69.39	$94.11	per Yd3 ***	$163.50	per Yd3
							$6.06	per ft3
Solid Waste (county landfill)	$0.00827	per Lb			Incl	per Lb	$0.00827	per Lb
Solid Waste (county landfill)	$133.75	per Load			Incl.	per Load	$133.75	per Load
Void Factor (for disposal)	1.25							

* Fee includes all misc taxes and other surcharges. Based on Denison Mines Invoice rec. 4/25/11
** Transport costs based on invoice from Greenfield logistics rec'd 4/14/11, all-in rate is $224.07/tn
*** Transport costs based on rates from equipment watch last qtr 2009; no actual ceest availible at this time. $75/hr * 25.3 to dump site / 15cy load
County landfill charges 3yd = $113.58, 6yd = $172.10 plus surcharge

Load Correction Factors - difference between solid material and when it is broken because of air space between the pieces of material, the coarser the material the lower the load factor (or the finer the material the higher the factor) The table below shows some examples of load factors for several common materials, including concrete These factors are from the Caterpillar Performance Handbook and the Engineering Pocket Reference Guide.

Material	Pounds/CY Solid (bank)	Pounds/CY Broken (Loose)	% Dif	Load Factor
Granite	4536	2781	39%	0.61
Limestone	4401	2619	40%	0.60
Sandstone	3915	2538	35%	0.65
Concrete	3996	2176	46%	0.54
Sand & gravel	2700	2400	11%	0.89

Guideline No. 12 Unit Costs (includes profit)

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

Task	Cost per unit	Regional Cost Adjustment	Adjusted Cost per Unit
Mixture of Types	$0.26 ft3	0.957	$0.249 ft3
Explosive Demolition, Concrete or Steel	0.24 ft3	0.957	$0.230 ft3
Disposal (Average)	8.48 cy	0.957	$8.115 cy
City Landfill Dump Charges	$100.00 ton	0.957	$95.700 ton
Concrete Footings and Foundations			
6" Thick with Rebar	5.28 ft2	0.957	$5.053 ft2
Footings - 2' Thick, 3' Wide	18.95 lin. ft	0.957	$18.135 lin. ft.
Concrete Disposal On-Site	8.48 cy	0.957	$8.115 cy

App C, Calculations for Moving Materials with a Caterpillar 637G Push-Pull Scraper Fleet	Operating Cost per bank (in situ)	
One-Way Distance 500 feet, 0% grade	$0.852	$0.852 bcy
One-Way Distance 1,000 feet	$1.018	$1.018 bcy
One-Way Distance 2,000 feet	$1.319	$1.319 bcy

App E, Calculations for Moving Material with a Caterpillar D9R Dozer	Operating Cost per linear cubic yard	
Distance 50 feet	$0.126	$0.126 lcy

App H, Cost Estimates for Handling Wire Fencing and Electrical Power Lines		
Fencing Removal	$0.37	$0.37 linear foot

App I1, Cost Estimate for Ripping Overburden Using a Caterpillar D10R Dozer	Operating Costs	
0.27 acre/hour	$243.73	$243.73 per hour
		$902.70 per acre

Seeding Unit Costs

Discing / Seeding/Topsoil Costs	2010 Actual
Seed cost	$65.99 per acre
Hay Mulch Crimped and Soil Amendment	$540 per acre
Seed and Mulch	$606 per acre
Depth of Topsoil	0.5 feet

Cameco Resources
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Mine Unit 8
20
40
120
1.58
840,000
19.28
840,000
20.0
0.27
26,544,000
53,608
20
20
40
40
120
120
180
950
5
100
8674

Cameco Resources
Highland Uranium Project
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Highland Uranium Project Reclamation Cost Estimate, June 30, 2011

I.	Groundwater Restoration (GW REST Sheet)			$27,557,801
II.	Well Abandonment and Wellfield Reclamation (WA, WF REC, WF-SAT-SURF Sheets)			$20,589,272
III.	Equipment and Building Costs (EQUIP, BLDGS Sheets)			$3,711,654
IV.	Miscellaneous Site Reclamation (MISC REC Sheet)			$11,816,797
	Subtotal Reclamation Cost			$63,675,525
		Contingency	25%	$15,918,881
			TOTAL	$79,594,406

Permit 603

Items in Yellow have been changed since the previous submission

Cameco Resources
Highland Uranium Project
2011-12 Surety Estimate

Ground Water Restoration														
				Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
I.	**Ground Water Sweep Costs**														
	Estimated PV's			0	0	0	0	0	1	1	1	1	1	1	1
	Total Kgals for GWS			0	0	0	0	0	28046	17296	81658	243980	94815	231640	86995
	Bleed to Deep Disposal Well (%)			100	100	100	100	100	100	100	100	100	100	100	100
	Groundwater Sweep Unit Cost ($/Kgal)			$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15	$1.15
	Subtotal Ground Water Sweep Costs per Wellfield			**$0**	**$0**	**$0**	**$0**	**$0**	**$32,150**	**$19,827**	**$93,608**	**$279,683**	**$108,690**	**$265,537**	**$99,726**
Total Ground Water Sweep Costs				**$899,221**											
II.	**Reverse Osmosis Costs**														
	Estimated PV's			0	0	0	0	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Total Kgals for RO			0	0	0	0	0	126,207	77,832	367,461	1,097,910	426,668	1,042,380	391,478
	Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
	Reverse Osmosis Unit Cost ($/Kgal)			$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40
	Brine volume for disposal			0	0	0	0	0	18,931	11,675	55,119	164,687	64,000	156,357	58,722
	DDW Disposal Cost($/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
	Disopsal Cost per wellfield			$0.00	$0.00	$0.00	$0.00	$0.00	$12,536.80	$7,731.46	$36,501.82	$109,061.14	$42,383.11	$103,545.06	$38,887.51
	Subtotal Reverse Osmosis Costs per Wellfield			**$0**	**$0**	**$0**	**$0**	**$0**	**$63,020**	**$38,864**	**$183,486**	**$548,225**	**$213,050**	**$520,497**	**$195,479**
Total Reverse Osmosis Costs				**$1,762,621**											
III.	**Reverse Osmosis with Chemical Reductant Costs**														
	Estimated PV's			0	0	3	3	1	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Total Kgals for RO			0	0	206,883	59,073	0	98,161	60,536	285,803	853,930	331,853	810,740	304,483
	Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
	Reverse Osmosis with chemical reductant Unit Cost ($/Kgal)			$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44	$0.44
	Brine volume for disposal			0	0	31,032	8,861	0	14,724	9,080	42,870	128,090	49,778	121,611	45,672
	DDW Disposal Cost($/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
	Disposal Cost per wellfield			$0.00	$0.00	$20,550.77	$5,868.03	$0.00	$9,750.85	$6,013.36	$28,390.31	$84,825.33	$32,964.64	$80,535.04	$30,245.84
	Subtotal Reverse Osmosis Chemical Reductant & Disposal			**$0**	**$0**	**$112,013**	**$31,984**	**$0**	**$53,147**	**$32,776**	**$154,742**	**$462,343**	**$179,675**	**$438,959**	**$164,856**
Total Reverse Osmosis Chemical Reductant Costs				**$1,630,496**											
IV.	**Bioremediation**														
	Estimated PV's			0	0	0	0	0	0	0	0	0	0	0	0
	Total Kgals for Treatment			0	0	0	0	0	0	0	0	0	0	0	0
	Bleed to Deep Disposal Well (%)			15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
	Bioremediation Unit Cost ($/Kgal)			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Subtotal Bioremediation Costs per Wellfield			**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Total Bioremediation Costs				**$0.00**											
V.	**Selenium Plant Operation**														
	Years			7											
	$/year			$114,000.00											
	Subtotal Selenium Plant Operation Costs			**$798,000.00**											
VI.	**MIT Costs**														
	MIT Costs per Well			$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83	$229.83
	Restoration period, plus stabilization (months)			12.00	12.00	42.00	12.00	12.00	34.00	30.00	113.00	120.00	120.00	101.00	102.00
	Number of MIT's req'd for Prod & Inj Wells			0	66	315	0	0	86	21	672	3,124	930	1,192	993
	Subtotal MIT Mine Unit			**$0.00**	**$15,123.03**	**$72,397.50**	**$0.00**	**$0.00**	**$19,666.84**	**$4,826.50**	**$154,528.44**	**$717,999.33**	**$213,745.00**	**$273,915.37**	**$228,178.53**
	5-year MIT Costs for Disposal Wells	$5,907.53													
	Number of DDWs	3													
	Number of MITs per DDW	3													
	Subtotal MIT DDW Costs			**$53,167.77**											
Total MIT Costs				**$1,753,548.32**											
VII.	**Monitoring and Sampling Costs**														
	Modified Guidline 8 =	$337.00	analysis												

Cameco Resources
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Ground Water Restoration																
					Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
		6 parameter contract laboratory analysis =	$100.00	analysis												
		Total monitor wells			9	69	104	0	0	38	15	72	109	86	78	82
		Groundwater sweep duration (months)			0.00	0.00	0.00	0.00	0.00	4.00	4.00	29.00	48.00	36.00	29.00	30.00
		Reverse Osmosis duration (months)			0.00	0.00	30.00	0.00	0.00	18.00	14.00	72.00	60.00	72.00	60.00	60.00
		Stabilization duration (months)			12	12	12	12	12	12	12	12	12	12	12	12
A.	Monitor Well Sampling															
	1. Well Sampling prior to restoration start															
		# of Wells			9	69	104	0	0	38	15	72	109	86	78	82
		$/sample			$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
	2. Groundwater Sweep Sampling (quarterly)															
		# of Wells			9	69	104	0	0	38	15	72	109	86	78	82
		Total # samples			0	0	0	0	0	51	20	696	1744	1032	754	820
		$/sample			$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	3. RO Sampling (quarterly)															
		# of Wells			9	69	104	0	0	38	15	72	109	86	78	82
		Total # samples			0	0	1040	0	0	228	70	1728	2180	2064	1560	1640
		$/sample			$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	4. Stabilization Sampling (Guideline 8, quarterly)															
		# of Wells			6	56	44	6	2	19	16	28	89	69	33	33
		Total # samples			24	224	176	24	8	76	64	112	356	276	132	132
		$/sample			$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00	$337.00
	5. Stabilization Sampling (6 parameter bi-monthly)															
		# of Wells			6	56	44	6	2	19	16	28	89	69	33	33
		Total # samples			36	336	264	36	12	114	96	168	534	414	198	198
		$/sample			$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	6. Monitor Well Sampling															
		# of Wells			9	69	104	0	0	38	15	72	109	86	78	82
		$/sample			$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
		Total # samples (2.2/mo for entire period)			54	414	2184	0	0	646	225	4068	6540	5160	3939	4182
	7. Other Laboratory Costs															
		Radon, etc. =	$1,000.00	month												
		Total for Other Laboratory Costs:			$12,000.00	$12,000.00	$42,000.00	$12,000.00	$12,000.00	$34,000.00	$30,000.00	$113,000.00	$120,000.00	$120,000.00	$101,000.00	$102,000.00
Subtotal Monitoring and Sampling Costs per Mine Unit					**$32,121.00**	**$185,741.00**	**$485,160.00**	**$23,688.00**	**$15,896.00**	**$176,318.00**	**$97,723.00**	**$841,008.00**	**$1,376,505.00**	**$1,108,994.00**	**$816,870.00**	**$858,118.00**
Total Monitoring and Sampling Costs					**$6,018,142.00**											

Cameco Resources
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Ground Water Restoration															
				Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
VIII.	Supervisory Labor Cost (for all Reclamation)														
	Environmental Manager/RSO Support	$11,593.74	month												
	Restoration Manager Support	$8,219.99	month												
	HP Technician support	$4,828.38	month												
	Active restoration period (months)			0.00	0.00	30.00	0.00	0.00	22.00	18.00	101.00	108.00	108.00	89.00	90.00
	Stabilization period (months)			12	12	12	12	12	12	12	12	12	12	12	12
	Total Restoration Period	11	years												
	Manager support during restoration	$2,615,412.10													
	HP Technician support during restoration	$637,346.69													
	Labor Support 5 each	$2,571,140.00													
	RO ops/maint. Labor, 2 each	$1,028,456.00													
Total Supervisory Labor Costs				$6,852,354.78											
TOTAL RESTORATION COST PER WELLFIELD				$32,121.00	$200,864.03	$669,570.20	$55,671.91	$15,896.00	$344,301.92	$194,016.81	$1,427,372.57	$3,384,756.12	$1,824,153.96	$2,315,778.92	$1,546,356.60
				$12,010,860.05											
TOTAL GROUND WATER RESTORATION COSTS				$21,467,930.92											
IX.	Cost of Refurbishing Mine Unit to facilitate restoration														
	Number of Wells, ea			0	0	55	0	0	0	0	110	150	0	0	0
	Cost to Refurbish Well, $/well			$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000	$14,000
	Number of Bell Holes, ea			0	0	0	0	0	0	0	0	45	0	0	0
	Cost per Bell Hole, $/ea			$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886	$8,886
	Number of Header Houses, ea			0	0	0	0	0	0	0	0	$40	0	0	0
	Cost per Header House, $/ea			$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 cost per Mine Unit			$0	$0	$770,000	$0	$0	$0	$0	$1,540,000	$3,779,870	$0	$0	$0
Total Cost of Refurbishing Mine Unit to facilitate restoration				$6,089,870											
TOTAL GROUND WATER RESTORATION COSTS				$27,557,800.92											

Cameco Resources
Highland Uranium Project
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Well Abandonment

		Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 22	Mine Unit-C Haul Dr	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	Delineation Holes General	Totals
I.	**Well Abandonment (Wellfields)**														
	# of Production Wells	0	141	137	0	0	49	13	120	614	136	249	197		1656
	# of Injection Wells	0	188	313	0	0	102	29	237	948	329	459	387		2992
	# of Monitoring Wells	9	69	104	0	0	38	15	72	109	86	78	82		662
	Total Number of Wells	9	398	554	0	0	189	57	429	1671	551	786	666		5310
	Average Diameter of Casing (inches)	5	5	5	5	5	5	5	5	5	5	5	5		
	Production, Injection and Perimeter Well Average Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540		544
	Total Mine Unit Well Depth (ft), production wells	0	63450	75350	0	0	29400	7800	66000	399100	68900	161850	106380		24200
	Total Mine Unit Well Depth (ft), all others	4500	115650	229350	0	0	84000	26400	169950	687050	207500	349050	253260		629850
	Well Abandonment Unit Cost ($/ft. of well)	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50		
	Well Abandonment (w/pump) Unit Cost ($/ft. of well)	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80	$2.80		
	Subtotal Abandonment Cost per Wellfield	$11,250	$466,785	$784,355	$0	$0	$292,320	$87,840	$609,675	$2,835,105	$709,150	$1,325,805	$931,014		$8,053,299
III.	**Removal of Contaminated Soil Around Wells**														
	# of Production and Injection Wells 4648														
	Cost per well ($/well) 214.23														
	Subtotal Removal of Soil Around Wells	$995,741.04													$995,741.04
IV.	**Delineation Hole Abandonment**														
	# of Projected Holes	0	0	0	0	0	0	0	0	0	0	0	0	600	
	Average Depth (ft)	500	450	550	550	550	600	600	550	650	500	650	540	600	
	Hole Abandonment Unit Cost ($/ft of hole)	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	$2.50	
	# of holes in 2-5yr revegitation period	0	0	0	0	0	0	0	0	0	0	0	0	600	
	Size Reclamation ($/site)	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	$73.53	
	Subtotal Hole Abandonment per Wellfield	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$944,118	$944,118
V.	**Waste Disposal Well Abandonment**	Morton No. 1-20	Vollman No. 33-27	SRHUP # 9											
	A. Well Sealing														
	Sealing cost per foot (in Reynolds UIC permit)	$11.91	$11.91	$11.91											
	Subtotal Plugging Costs per Well	$107,190	$119,100	$119,100											
	B. Pump Dismantling and Decontamination														
	Number of Persons	2	2	2											
	Number of Pumps	2	2	2											
	Pumps/Day	0.5	0.5	0.5											
	Number of Days	4	4	4											
	$/Day/Person	$263	$263	$263											
	Subtotal Dismantling and Decon Costs per Well	$2,104	$2,104	$2,104											
	C. Tubing String Disposal (NRC-Licensed Facility)														
	Length of Tubing String (ft)	9,000	10,000	10,000											
	Diameter of Tubing String (inches)	2.875	2.875	2.875											
	Volume of Tubing String (ft^3)	210	233	233											
	Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06											
	Subtotal Tubing String Disposal Costs per Well	$1,269	$1,410	$1,410											
	Subtotal Waste Disposal Well Abandonment Costs per Well	$110,562.78	$122,613.78	$122,613.78											
	Total Waste Disposal Well Abandonment Costs	$355,790.33													
	Total Wellfield Abandonment Costs	$10,348,948.37													

Wellfield Buildings and Equipment Removal and Disposal		Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	
I.	**Wellfield Piping**				Not Used, Included w/MU-C									
	Number of Header Houses per Wellfield	5	18	20	0	0	4	3	15	47	10	12	13	
	Approximate Length of Piping per Header House (ft) (ave. 46 wells per with 300 ft	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	13800	
	Approximate Total Length of Piping (ft)	69000	248400	276000	0	0	8000	41400	207000	648600	138000	165600	179400	1981400
A.	Removal and Loading													
	Wellfield Piping Removal Unit Cost ($/ft of pipe)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
	Subtotal Wellfield Piping Removal and Loading Costs	$126,270	$454,572	$505,080	$0	$0	$14,640	$75,762	$378,810	$1,186,938	$252,540	$303,048	$328,302	
B.	Transport and Disposal Costs (NRC-Licensed Facility)													
	Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2	2	2	
	Chipped Volume Reduction (ft^3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	
	Chipped Volume per Wellfield (ft^3)	740	2663	2959	0	0	86	444	2219	6954	1480	1775	1923	
	Volume for Disposal Assuming 10% Void Space (ft^3)	814	2930	3255	0	0	94	488	2441	7649	1628	1953	2116	
	Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
	Subtotal Wellfield Piping Transport and Disposal Costs	$4,929	$17,743	$19,711	$0	$0	$569	$2,955	$14,782	$46,319	$9,858	$11,826	$12,814	
	Wellfield Piping Costs per Wellfield	$131,199	$472,315	$524,791	$0	$0	$15,209	$78,717	$393,592	$1,233,257	$262,398	$314,874	$341,116	
	Total Wellfield Piping Costs	**$3,767,468**												
II.	**Well Pumps and DownholeTubing**													
	Assumptions:													
	60% of production/injection wells contain pumps and/or tubing													
A.	Pump and Tubing Transportation and Disposal													
	Number of Production Wells	0	141	137	0	0	49	13	120	614	136	249	197	
	Number of Injection Wells	0	188	313	0	0	102	29	237	948	329	459	387	
	Number of Monitor Wells	9	69	104			38	15	72	109	86	78	82	
1.	Pump Volume													
	Number of Production Wells with Pumps	0	141	137	0	0	49	13	120	614	136	249	197	
	Average Pump Volume (ft^3) 66"X 3.8" Diam = 5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	
	Pump Volume per Wellfield (ft^3)	0.0	732.9	712	0	0	255	68	624	3192	707	1294	1024	
2.	Tubing Volume													
	Assumptions:													
	Average tubing length/wellfield based on average well depth minus 25 ft													
	Number of Production & Monitor Wells with Tubing	9	210	241	0	0	87	28	192	723	222	327	279	
	Number of Injection Wells with Tubing	0	141	137	0	0	49	13	120	614	136	249	197	
	Average Tubing Length per Well (ft)	475	425	525	525	525	575	575	525	625	475	625	515	
	Tubing Length per Wellfield (ft)	4,275	149,175	198,450	0	0	78,200	23,575	163,800	835,625	170,050	360,000	245,140	
	Diameter of Production Well Fiberglass Tubing (inches)	2	2	2	2	2	2	2	2	2	2	2	2	
	Diameter of Injection Well HDPE Tubing (inches)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
	Chipped Volume Reduction (ft^3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	
	Chipped Volume per Wellfield (ft^3)	46	1599	2128	0	0	838	253	1756	8959	1823	3860	2628	
	Volume of Pump and Tubing (ft^3)	46	2332	2840	0	0	1093	321	2380	12151	2530	5154	3652	
	Volume for Disposal Assuming 10% Void Space (ft^3)	51	2565	3124	0	0	1202	353	2618	13366	2783	5670	4017	
	Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
	Pump and Tubing Transport and Disposal Costs Per Wellfield	$309	$15,532	$18,917	$0	$0	$7,279	$2,138	$15,853	$80,938	$16,853	$34,335	$24,325	
	Total Pump and DownholeTubing Costs	**$216,479**												
III.	**Buried Trunkline (Includes $ for fiber optic cable removal)**													
	Assumptions:		inc w/MU-A		inc w/MU-C	inc w/MU-C			inc w/MU-D					
	Length of Trunkline Trench (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	2500	68050
A.	Removal and Loading													
	Main Pipeline Removal Unit Cost ($/ft of trench)	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	$1.83	
	Subtotal Trunkline Removal and Loading Costs	$11,895	$0	$10,797	$0	$0	$21,960	$10,065	$0	$21,411	$24,156	$19,673	$4,575	
B.	Transport and Disposal Costs (NRC-Licensed Facility)													
1.	1" Carbon Steel Trunkline													
	Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
2.	1.5" HDPE Trunkline													
	Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chipped Volume per Lft (ft^3/ft)	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	
	Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J	
3. 3" HDPE Trunkline													
Piping Length (ft)	6500	0	5900	0	0	12000	5500	0	11700	13200	10750	0	29900
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	
Chipped Volume (ft^3)	151	0	137	0	0	279	128	0	272	307	250	0	
4. 6" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	11000	0	0	0	3000	0	14000
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	
Chipped Volume (ft^3)	0	0	0	0	0	0	917	0	0	0	250	0	
5. 8" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per Lft (ft^3/ft)	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
6. 10" HDPE Trunkline													
Piping Length (ft)	13000	0	0	0	0	0	0	0	0	0	750	2000	13750
Chipped Volume per Lft (ft^3/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	
Chipped Volume (ft^3)	2854	0	0	0	0	0	0	0	0	0	165	439	
7. 12" HDPE Trunkline													
Piping Length (ft)	0	0	11800	0	0	24000	0	0	0	0	0	2000	35800
Chipped Volume per Lft (ft^3/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	
Chipped Volume (ft^3)	0	0	3644	0	0	7411	0	0	0	0	0	618	
8. 14" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	23400
Chipped Volume per Lft (ft^3/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	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	8712	9829	3165	0	
9. 16" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	23400	26400	8500	0	23400
Chipped Volume per Lft (ft^3/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	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	11381.40381	12840.55814	4134.270613	0	
10. 18" HDPE Trunkline													
Piping Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0	0
Chipped Volume per Lft (ft^3/ft)	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	0.616	
Chipped Volume (ft^3)	0	0	0	0	0	0	0	0	0	0	0	0	
Total Trunkline Chipped Volume (ft^3)	3006	0	3781	0	0	7691	1045	0	20366	22977	7964	1057	
Volume for Disposal Assuming 10% Void Space (ft^3)	3306	0	4159	0	0	8460	1150	0	22403	25275	8761	1162	
Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06	
Subtotal Trunkline Transport and Disposal Costs	$20,020	$0	$25,185	$0	$0	$51,230	$6,964	$0	$135,662	$153,054	$53,053	$7,037	
Trunkline Decommissioning Costs per Wellfield	$31,915	$0	$35,982	$0	$0	$73,190	$17,029	$0	$157,073	$177,210	$72,726	$11,612	
Total Trunkline Decommissioning Costs	**$576,737**												
IV. Well Head Covers				Inc w/MU-C	Inc w/MU-C								
Total Quantity	90	490	552	0	0	117	97	331	1347	470	361	285	3024
Average Well Head Cover Volume (ft^3)	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	
A. Removal													
Total Volume (ft^3)	167.4	911.4	1026.72	0	0	217.62	180.42	615.66	2505.42	874.2	671.46	530.1	
Demolition Unit Cost per WDEQ Guideline No.12.App.K ($/$ft^3$)	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	$0.249	
Subtotal Well Head Cover Demolition Costs	$42	$227	$255	$0	$0	$54	$45	$153	$623	$218	$167	$132	
B. Survey and Decontamination													
Cost per Wellhead cover	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	
Subtotal Survey and Decontamination Costs	$602	$3,276	$3,691	$0	$0	$782	$649	$2,213	$9,007	$3,143	$2,414	$1,906	
C. Disposal at County landfill facility													
Total Volume (cy)	6	34	38	0	0	8	7	23	93	32	25	20	
Volume for disposal assuming 10% void space (cy)	7	37	42	0	0	9	7	25	102	36	27	22	
Transportation and Disposal Unit Cost ($/cy)	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	$8.115	
Subtotal Disposal Costs	$57	$300	$341	$0	$0	$73	$57	$203	$828	$292	$219	$179	
Well Head Covers Removal and Disposal Costs per Mine Unit	$701	$3,803	$4,287	$0	$0	$909	$751	$2,569	$10,458	$3,653	$2,800	$2,217	
Total Well Head Cover Removal and Disposal Costs	**$32,148**												

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Wellfield Buildings and Equipment Removal and Disposal	Mine Unit-A	Mine Unit-B	Mine Unit-C	Mine Unit-C 19N	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit-D Ext	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-I	Mine Unit-J
V. Header Houses (Includes Booster Stations)												
Total Quantity	5	18	20	0	0	4	3	15	47	10	12	13
Average Header House Volume (ft^3)	800	800	800	800	800	800	800	800	800	800	800	800
A. Removal												
Total Volume (ft^3)	4000	14400	16000	0	0	3200	2400	12000	37600	8000	9600	10400
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230	$0.230
Subtotal Building Demolition Costs	$919	$3,307	$3,675	$0	$0	$735	$551	$2,756	$8,636	$1,837	$2,205	$2,389
B. Survey and Decontamination												
Cost per Header House	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579	$579
Subtotal Survey and Decontamination Costs	$2,895	$10,422	$11,580	$0	$0	$2,316	$1,737	$8,685	$27,212	$5,790	$6,948	$7,527
C. Disposal												
Total Volume (cy)	148	533	593	0	0	119	89	444	1393	296	356	385
Volume for Disposal Assuming 10% Void Space (cy)	163	587	652	0	0	130	98	489	1532	326	391	424
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal County Landfill Disposal Costs	$1,323	$4,764	$5,291	$0	$0	$1,055	$795	$3,968	$12,433	$2,646	$3,173	$3,441
Headerhouse Soil Removal Volume ft3 (assumes 10'Wx20'Lx2.5'D)	500	500	500	500	500	500	500	500	500	500	500	500
11e.(2) Disposal Unit Cost ($/ft3)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal 11e.(2) Disposal Costs	$26,094	$93,940	$104,378	$0	$0	$20,876	$15,657	$78,283	$245,288	$52,189	$62,627	$67,846
Header House Removal and Disposal Costs per Wellfield	$31,231	$112,433	$124,924	$0	$0	$24,982	$18,740	$93,692	$293,569	$62,462	$74,953	$81,203
Total Header House Removal and Disposal Costs	**$918,188**											
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	$195,355	$604,083	$708,901	$0	$0	$121,569	$117,375	$505,706	$1,775,295	$522,576	$499,688	$460,473
VI. Vehicle Operation Costs												
Number of Pickup Trucks/Pulling Units (Gas)	10											
Unit Cost in $/hr (UC-Equipment Costs)	$18.08											
Average Operating Time (Hrs/Year)	1000											
Total Number of Years (Average)	11											
Total Vehicle Operation Costs	**$1,988,302**											
VII. Header Houses (Includes Booster Stations)	5	18	20	0	0	4	3	15	47	10	12	13
Years of Active Restoration	0.00	0.00	2.50	0.00	0.00	1.83	1.50	8.42	9.00	9.00	7.42	7.50
Heating Cost per Year per header house	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581	$2,581
Heating Costs per year	$0	$0	$129,060	$0	$0	$18,929	$11,615	$325,877	$1,091,848	$232,308	$229,727	$251,667
Total Header Heating cost	**$2,291,030**											
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	**$9,790,352**											

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Wellfield and Satellite Surface Reclamation	Mine Unit-A/B	Mine Unit-C	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H	Mine Unit-D Ext.	Mine Unit-I	Mine Unit-J	Mine Unit-JA
I. Wellfield Pattern Area Reclamation										
Pattern Area (acres)	42.75	67.5	12.375	49.5	171	56.25	9	45	60.75	0
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Pattern Area Reclamation Costs per Wellfield	$25,922	$40,930	$7,504	$30,015	$103,689	$34,108	$5,457	$27,287	$36,837	$0
Total Wellfield Pattern Area Reclamation Costs	**$311,749**									
II. Wellfield Road Reclamation										
Road Construction										
Length of Wellfield Roads (1000 ft)	12.8	11.3	2.4	13.3	18	15.7	5	5	5	1
Wellfield Road Reclamation Unit Cost ($/1000 ft)	$1,019	$1,019	$1,019	$1,019	$1,019	$1,019	$1,019	$1,019	$1,019	$1,019
Wellfield Road Reclamation Costs	$13,043	$11,515	$2,446	$13,553	$18,342	$15,998	$5,095	$5,095	$5,095	$1,019
Total Wellfield Road Reclamation Costs	**$91,201**									
III. Laydown area reclamation										
Area of Disturbance (acres)	1	1	1	1	1	1	1	1	1	1
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft)	500	500	500	500	500	500	500	500	500	500
A. Ripping Overburden with Dozer										
Ripping Unit Cost per WDEQ Guideline No.12, App.11 ($/acre)	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70	$902.70
Subtotal Ripping Costs	$903.00	$903.00	$903.00	$903.00	$903.00	$903.00	$903.00	$903.00	$903.00	$903.00
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85	$0.85
Subtotal Topsoil Application Costs	$921	$921	$921	$921	$921	$921	$921	$921	$921	$921
C. Discing and Seeding										
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Discing/Seeding Costs	$606	$606	$606	$606	$606	$606	$606	$606	$606	$606
Subtotal Surface Reclamation Costs per WF laydown area	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430	$2,430
Total Wellfield Laydown Area Reclamation Costs	**$24,300**									
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	**$41,395**	**$54,875**	**$12,380**	**$45,998**	**$124,461**	**$52,536**	**$12,982**	**$34,812**	**$44,362**	**$3,449**
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	**$427,250**									
IV. Satellite Area Reclamation	**Satellite No.1**	**Satellite No.2**	**Satellite No.3**	**Se Plant**						
Assumptions:										
Area of Disturbance (acres)	1	3	2.5	2						
Average Depth of Stripped Topsoil (ft)	1	0.67	0.67	0.67						
Surface Grade: Level Ground										
Average Length of Topsoil Haul (ft)	1000	500	500	500						
A. Ripping Overburden with Dozer										
Ripping Unit Cost per WDEQ Guideline No.12, App.11 ($/acre)	$902.70	$902.70	$902.70	$902.70						
Subtotal Ripping Costs	$903.00	$2,708.00	$2,257	$1,805						
B. Topsoil Application with Scraper										
Volume of Topsoil Removed (cy)	1613	3243	2702	2162						
Application Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.02	$1.02	$1.02	$1.02						
Subtotal Topsoil Application Costs	$1,642	$3,301	$2,751	$2,201						
C. Discing and Seeding										
Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606						
Subtotal Discing/Seeding Costs	$606	$1,819	$1,516	$1,213						
Subtotal Surface Reclamation Costs per Satellite	$3,151	$7,828	$6,524	$5,219						
Total Satellite Building Area Reclamation Costs	**$22,722**									
TOTAL WELLFIELD AND SATELLITE SURFACE RECLAMATION COSTS	**$449,972.00**									

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
I. Removal and Loading Costs					
A. Tankage					
Number of Tanks	26	8	14	18	7
Volume of Tank Construction Material (ft^3)	1028	162	290	397	290
Labor					
Number of Persons	4	4	4	4	4
Ft^3/Day	25	25	25	25	25
Number of Days	41	6	12	16	12
$/Day/Person	$263	$263	$263	$263	$263
Subtotal Labor Costs	$43,254	$6,816	$12,202	$16,704	$12,202
Equipment					
Number of Days	41	6	12	16	12
$/Day	$1,933	$1,933	$1,933	$1,933	$1,933
Subtotal Equipment Costs	$79,478	$12,525	$22,421	$30,693	$22,421
Subtotal Tankage Removal and Loading Costs	$122,732	$19,341	$34,623	$47,397	$34,623
B. PVC/Steel Pipe					
PVC Pipe Footage	10000	1000	4000	4000	4000
Average PVC Pipe Diameter (inches)	3	3	3	3	3
Shredded PVC Pipe Volume Reduction (ft^3/ft)	0.023	0.023	0.023	0.023	0.023
Volume of Shredded PVC Pipe (ft^3)	233	23	93	93	93
Steel Pipe Footage	2000	0	0	0	0
Average Steel Pipe Diameter (inches)	2	0	0	0	0
Volume (ft^3)	0	0	0	0	0
Labor & Equipment					
Number of Persons	4	4	4	4	4
Ft/Day	300	300	300	300	300
Number of Days	40.00	3	13.33	13.33	13.33
$/Day/Person	$263	$263	$263	$263	$263
$/ Day Equipment	$1,108	$1,108	$1,108	$1,108	$1,108
Subtotal PVC/Steel Pipe Labor & Equipment Costs	$86,402	$7,200	$28,801	$28,801	$28,801
Subtotal PVC/Steel Pipe Removal and Loading Costs	$86,402	$7,200	$28,801	$28,801	$28,801
C. Pumps					
Number of Pumps	50	10	14	13	14
Average Volume (ft^3/pump)	4.93	4.93	4.93	4.93	4.93
Volume of Pumps (ft^3)	246.5	49.3	69.02	64.09	69.02

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Equipment Removal and Loading	Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
Labor & Equipment					
Number of Persons	2	2	2	2	2
Pumps/Day	2	2	2	2	2
Number of Days	25	5	7	6.5	7
$/Day/Person	$263	$263	$263	$263	$263
$/ Day Equipment	$314	$314	$314	$314	$314
Subtotal Labor & Equipment Costs	$21,010	$4,202	$5,883	$5,463	$5,883
Subtotal Pump Removal and Loading Costs	$21,010	$4,202	$5,883	$5,463	$5,883
D. Dryer					
Dryer Volume (ft^3)	885				
Labor & Equipment					
Number of Persons	4	0	0	0	0
Ft^3/Day	125	0	0	0	0
Number of Days	7.08	0	0	0	0
$/Day/Person	$263	$263	$263	$263	$263
$/Day Equipment (includes crane with operator)	$2,289				
Total Labor & Equipment Cost	$23,657	$0	$0	$0	$0
Total Number of Dryers	3	0	0	0	0
Total Dryer Dismantling and Loading Cost	$70,971	$0	$0	$0	$0
E. RO Units					
Number of RO Units					
Current	0	0	2	0	0
Planned	0	0	3	0	2
Average Volume (ft3/RO Unit)	250	250	250	250	250
Labor & Equipment					
Number of Persons	2	2	2	2	2
Number of Days		0	5	0	2
$/Day/Person	$262.97	$262.97	$262.97	$262.97	$262.97
$/ Day Equpment	$545.17	$545.17	$545.17	$545.17	$545.17
Subtotal RO Unit Removal and Loading Costs	$0	$0	$5,356	$0	$2,142
Subtotal Equipment Removal and Loading Costs per Facility	$301,115	$30,743	$74,663	$81,661	$71,449
Total Equipment Removal and Loading Costs	**$559,631**				
II. Transportation and Disposal Costs (NRC-Licensed Facility)					
A. Tankage					
Volume of Tank Construction Material (ft^3)	1028	162	290	397	290

Cameco Resources
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Equipment Removal and Loading				Central Plant	Satellite No. 1	Satellite No. 2	Satellite No. 3	Se Plant
			Volume for Disposal Assuming 10% Void Space (ft^3)	1131	178	319	437	319
			Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06
		Subtotal Tankage Transportation and Disposal Costs		$6,849	$1,078	$1,932	$2,646	$1,932
	B.	PVC / Steel Pipe						
			Volume of Shredded PVC Pipe (ft^3)	233	23	93	93	93
			Volume for Disposal Assuming 10% Void Space (ft^3)	256	25	102	102	102
			Volume of Steel Pipe (ft^3)	0	0	0	0	0
			Volume for Disposal Assuming 10% Void Space (ft^3)	0	0	0	0	0
			Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06
		Subtotal PVC Pipe Transportation and Disposal Costs		$1,550	$151	$618	$618	$618
	C.	Pumps						
			Volume of Pumps (ft^3)	246.5	49.3	69.02	64.09	69.02
			Volume for Disposal Assuming 10% Void Space (ft^3)	271	54	76	70	76
			Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06
		Subtotal Pump Transportation and Disposal Costs		$1,641	$327	$460	$424	$460
	D.	Dryer						
			Dryer Volume (ft^3)	885	0	0	0	0
			Volume for Disposal Assuming Dryer Remains Intact (ft^3)	885	0	0	0	0
			Transportation and Disposal Unit Cost ($/$ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06
		Total Dryer Transportation and Disposal Costs		$5,359	$0	$0	$0	$0
	E.	RO Units						
			Volume of RO Units (ft^3)	0	0	1250	0	500
			Volume for Disposal Assuming 50% Volume Reduction (ft^3)	0	0	625	0	250
			Transportation and Disposal Unit Costs	$6.06	$6.06	$6.06	$6.06	$6.06
		Subtotal RO Unit Transportation and Disposal Costs		$0	$0	$3,785	$0	$1,514
	Subtotal Equipment Transportation and Disposal Costs per Facility			$15,399	$1,556	$6,795	$3,688	$4,524
	Total Equipment Transportation and Disposal Costs			**$31,962**				
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				$316,514	$32,299	$81,458	$85,349	$75,973
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS				**$591,593**				

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway
I. Decontamination Costs									
A. Wall Decontamination									
Area to be Decontaminated (ft^2)	131,000	20,000	0	0	0	0	0	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48
Subtotal Wall Decontamination Costs	$63,028	$9,623	$0	$0	$0	$0	$0	$0	$0
B. Concrete Floor Decontamination									
Area to be Decontaminated (ft^2)	17,820	0	6,000	9,600	9,600	0	0	0	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$9,136	$0	$3,076	$4,922	$4,922	$0	$0	$0	$0
C. Deep Well Injection Costs									
Total Kgals for Injection (1 gal used per ft2)	148.82	20	6	9.6	9.6	0	0	0	0
Deep Well Injection Unit Cost ($/Kgals)	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66
Subtotal Deep Well Injection Costs	$99	$13	$4	$6	$6	$0	$0	$0	$0
Subtotal Decontamination Costs per Building	$72,263	$9,636	$3,080	$4,928	$4,928	$0	$0	$0	$0
Total Decontamination Costs	**$104,926**								
II. Demolition Costs									
A. Building									
Volume of Building (ft^3)	794,000	30,720	192,000	320,000	320,000	37,560	91,000	333,000	5,600
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
Subtotal Building Demolition Costs	$197,563	$7,644	$47,773	$79,622	$79,622	$9,346	$22,643	$82,857	$1,393
B. Concrete Floor									
Area of Concrete Floor (ft^2)	23,760	500	8,000	12800	12800	0	6500	18000	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05
Subtotal Concrete Floor Demolition Costs	$120,058	$2,526	$40,424	$64,678	$64,678	$0	$32,844	$90,953	$0
C. Concrete Footing									
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	0
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14
Subtotal Concrete Footing Demolition Costs	$11,182	$1,622	$6,488	$8,207	$8,207	$0	$5,848	$9,732	$0
Subtotal Demolition Costs per Building	$328,803	$11,792	$94,685	$152,507	$152,507	$9,346	$61,335	$183,542	$1,393
Total Demolition Costs	**$1,401,883**								
III. Disposal Costs									
A. Building									
Volume of Building (cy)	29407	1138	7111	11852	11852	1391	3370	12333	207
Off-Site County Landfill									
Percentage (%)	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	29407	1138	7111	11852	11852	1391	3370	12333	207
Disposal Unit Cost ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal County Facility Off-Site Disposal Costs	$238,652	$9,233	$57,709	$96,182	$96,182	$11,289	$27,352	$100,089	$1,683
B. Concrete Floor									
Area of Concrete Floor (ft^2)	23760	500	8000	12800	12800	0	6500	18000	1186
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft^3)	17820	375	6000	9600	9600	0	4875	13500	889.5
Volume of Concrete Floor (cy)	660	14	222	356	356	0	181	500	33
1. Off-Site County Landfill									
Percentage (%)	75	75	75	100	100	100	100	100	100
Volume for Disposal (cy)	495	10	167	356	356	0	181	500	33

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Central Plant	Dryer Building	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse	Suspended Walkway
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal County Facility Off-Site Disposal Costs	$4,017	$85	$1,353	$2,885	$2,885	$0	$1,465	$4,058	$267
2. NRC-Licensed Facility									
Percentage (%)	25	25	25	0	0	0	0	0	0
Volume for Disposal (ft^3)	4455	94	1500	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal NRC-Licensed Facility Disposal Costs	$46,500	$979	$15,657	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$50,517	$1,064	$17,010	$2,885	$2,885	$0	$1,465	$4,058	$267
C. Concrete Footing									
Length of Concrete Footing (ft)	617	89	358	453	453	0	322	537	124
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	2466	358	1431	1810	1810	0	1290	2147	496
Volume of Concrete Footing (cy)	91	13	53	67	67	0	48	80	18
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal Concrete Footing Disposal Costs (county landfill)	$741	$108	$430	$544	$544	$0	$388	$645	$149
Subtotal Disposal Costs per Building	$289,910	$10,405	$75,149	$99,611	$99,611	$11,289	$29,205	$104,792	$2,099
Total Disposal Costs	**$921,099**								
IV. Health and Safety Costs Accounted for on GW REST									
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$690,976	$31,833	$172,914	$257,046	$257,046	$20,635	$90,540	$288,334	$3,492
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	**$2,427,908**								
Building Utility Costs									
Number of years of operation required for restoration/reclamation	0	0	0	11	0	0	0	0	0
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$0.00	$0.00	$0.00	$238,810.00	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL BUILDING ELECTRICITY COSTS	**$578,188**								
SUBTOTAL PROPANE AND NATURAL GAS COSTS (UC-Heating Cost)				$33,371.99					
TOTAL PROPANE AND NATURAL GAS COSTS	$113,965								
TOTAL UTILITY COSTS	**$692,153.65**								

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Changehouse and Lab	Maintenance Bldg	Main Office	Office Trailers	Process/ Fire Water	Potable Water Bldg	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Bldg.
I. Decontamination Costs										
A. Wall Decontamination										
Area to be Decontaminated (ft^2)	0	0	0	0	0	0	0	0	4,000	0
HCl Acid Wash, including labor ($/$ft^2$)	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48	$0.48
Subtotal Wall Decontamination Costs	$0	$0	$0	$0	$0	$0	$0	$0	$1,925	$0
B. Concrete Floor Decontamination										
Area to be Decontaminated (ft^2)	0	0	0	0	0	0	0	0	9,600	1260
HCl Acid Wash, including labor ($/$ft^2$)	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51	$0.51
Subtotal Concrete Floor Decontamination Costs	$0	$0	$0	$0	$0	$0	$0	$0	$4,922	$646
C. Deep Well Injection Costs										
Total Kgals for Injection (1 gal used per ft2)	0	0	0	0	0	0	0	0	13.6	1.26
Deep Well Injection Unit Cost ($/Kgals)	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66	$0.66
Subtotal Deep Well Injection Costs	$0	$0	$0	$0	$0	$0	$0	$0	$9	$1
Subtotal Decontamination Costs per Building	$0	$0	$0	$0	$0	$0	$0	$0	$6,856	$647
Total Decontamination Costs										
II. Demolition Costs										
A. Building										
Volume of Building (ft^3)	73000	27,000	72,000	20,000	16,500	6,300	0	0	320,000	15120
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/$ft^3$)	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
Subtotal Building Demolition Costs	$18,164	$6,718	$17,915	$4,976	$4,106	$1,568	$0	$0	$79,622	$3,762
B. Concrete Floor										
Area of Concrete Floor (ft^2)	5400	2100	6000	0	800	180	1256	7854	12800	1260
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft2)	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05	$5.05
Subtotal Concrete Floor Demolition Costs	$27,286	$10,611	$30,318	$0	$4,042	$910	$6,347	$39,686	$64,678	$6,367
C. Concrete Footing										
Length of Concrete Footing (ft)	294	183	310	0	113	54	0	0	453	142
Demolition Unit Cost per WDEQ Guideline No.12,App.K ($/ft)	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14	$18.14
Subtotal Concrete Footing Demolition Costs	$5,331	$3,324	$5,619	$0	$2,052	$973	$0	$0	$8,207	$2,575
Subtotal Demolition Costs per Building	$50,781	$20,653	$53,852	$4,976	$10,200	$3,451	$6,347	$39,686	$152,507	$12,704
Total Demolition Costs										
III. Disposal Costs										
A. Building										
Volume of Building (cy)	2704	1000	2667	741	611	233	0	0	11852	560
Off-Site County Landfill										
Percentage (%)	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cubic yards)	2704	1000	2667	741	611	233	0	0	11852	560
Disposal Unit Cost ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal County Facility Off-Site Disposal Costs	$21,942	$8,115	$21,641	$6,011	$4,959	$1,894	$0	$0	$96,182	$4,545
B. Concrete Floor										
Area of Concrete Floor (ft^2)	0	2100	6000	0	800	180	1256	7854	12800	1260
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
Volume of Concrete Floor (ft^3)	0	1575	4500	0	600	135	942	5890.5	9600	945
Volume of Concrete Floor (cy)	0	58	167	0	22	5	35	218	356	35
1. Off-Site County Landfill										
Percentage (%)	100	100	100	100	100	100	100	100	100	100
Volume for Disposal (cy)	0	58	167	0	633	5	35	218	356	35

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Building Demolition and Disposal (Highland Uranium Project Buildings)	Changehouse and Lab	Maintenance Bldg	Main Office	Office Trailers	Process/ Fire Water	Potable Water Bldg	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Bldg.
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal County Facility Off-Site Disposal Costs	$0	$473	$1,353	$0	$5,140	$41	$283	$1,771	$2,885	$284
2. NRC-Licensed Facility										
Percentage (%)	0	0	0	0	0	0	0	0	0	0
Volume for Disposal (ft^3)	0	0	0	0	0	0	0	0	0	0
Transportation and Disposal Unit Cost ($/$ft^3$)	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44	$10.44
Subtotal NRC-Licensed Facility Disposal Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Concrete Floor Disposal Costs	$0	$473	$1,353	$0	$5,140	$41	$283	$1,771	$2,885	$284
C. Concrete Footing										
Length of Concrete Footing (ft)	0	183	310	0	113	54	0	0	453	142
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	1	1	1	1	1
Volume of Concrete Footing (ft^3)	0	733	1239	0	453	215	0	0	1810	568
Volume of Concrete Footing (cy)	0	27	46	0	17	8	0	0	67	21
Disposal Unit Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12	$8.12
Subtotal Concrete Footing Disposal Costs (county landfill)	$0	$220	$373	$0	$136	$65	$0	$0	$544	$171
Subtotal Disposal Costs per Building	$21,942	$8,808	$23,367	$6,011	$10,235	$2,000	$283	$1,771	$99,611	$5,000
Total Disposal Costs										
IV. Health and Safety Costs Accounted for on GW REST										
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	$72,723	$29,461	$77,219	$10,987	$20,435	$5,451	$6,630	$41,457	$258,974	$18,351
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS										
Building Utility Costs										
Number of years of operation required for restoration/reclamation	0	0	0	0	0	0	0	0	7	0
SUBTOTAL BUILDING ELECTRICAL COSTS (UC-Electrical Power)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$226,822.86	$0.00
TOTAL BUILDING ELECTRICITY COSTS										
SUBTOTAL PROPANE AND NATURAL GAS COSTS (UC-Heating Cost)									$80,593	
TOTAL PROPANE AND NATURAL GAS COSTS										
TOTAL UTILITY COSTS										

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Miscellaneous Reclamation									
I.	**CP/Office Area Reclamation**								
		Concrete Pad= 0.3 acres							
		Total Area = 10 acres							
	A.	Asphalt							
		Area of Asphalt (acres)	3.4						
		Demolition Unit Cost per WDEQ Guideline No.12,App.I ($/acre)	$664.28						
		Average Thickness (ft)	0.50						
		Hauling Unit Cost per WDEQ Guideline No. 12, App C (500 ft, 0% grade)	$0.852						
		Volume of Asphalt (cy)	2,743						
		Disposal Average Cost per WDEQ Guideline No.12,App.K ($/cy)	$8.12						
		Subtotal Concrete Pad Demolition and Disposal Costs	**$24,519**						
	B.	Ripping Overburden with Dozer							
		Overburden Surface Area (acres)	10.6						
		Ripping Unit Cost per WDEQ Guideline No.12, App.II ($/acre)	$902.70						
		Subtotal Ripping Overburden Costs	**$9,542**						
	C.	Topsoil Application							
		Area of surface disturbance (ft^2)	130680						
		Average thickness of topsoil (ft)	0.5						
		Average haul distance (ft)	2000						
		Surface grade (%)	0%						
		Volume of Topsoil (cy)	2,420						
		Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)	$1.32						
		Subtotal Topsoil Application Costs	**$3,192**						
	D.	Discing/Seeding							
		Surface Area (acres)	13						
		Discing/Seeding Unit Cost ($/acre)	$606						
		Subtotal Discing/Seeding Costs	**$7,883**						
	Total CPP/Office/Yard Area Reclamation		**$45,136**						
II.	**Access Road Reclamation (includes culverts)**		**CPF/Office Area**	**Sat No. 1**	**Sat No. 3**	**Connecting Road**	**Sat No. 2 to Rancher Rd**		
	A.	Assumptions							
		Surface grade	5%	0%	0%	0%	0%		
		Length of Road (ft)	13200	15840	5280	10560	2640		
		Width of Road (ft)	25	30	30	30	10		
		Area of road (acres)	7.6	10.9	3.6	7.3	0.6		
	B.	Ripping and Hauling Asphalt							
		Assumptions							
		Average Haul Distance (feet)	5500	0	0	0	0.0		
		Average Thickness of Asphalt (ft)	0.5	0	0	0	0.0		
		Ripping Unit Cost Per WDEQ Guideline No. 12, App I ($/acre)	$664.28	$664.28	$664.28	$664.28	$664.28		
		Volume of Asphalt (cy)	6111	0	0	0	0		
		Hauling Unit Cost per WDEQ Guideline No. 12, App C ($/cy)	$3.57	$3.57	$3.57		$3.57		
	C.	Gravel Road Base Removal							
		Average haul distance (ft)	0	1000	1000	1000	0		
		Gravel Road Base Width (ft)	0	14	14	14			
		Gravel Road Base Area (acres)	0.00	5.09	1.70	3.39			
		Average Road Base Depth (ft)	0	0.5	0.5	0.5			
		Volume of Road Base (cy)	0	4107	1369	2738			

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Miscellaneous Reclamation											
			Removal Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$0.00	$1.02	$1.02	$1.02		
			Subtotal Gravel Road Base Removal Costs			$0	$4,181	$1,394	$2,787	$0	
	D.		Ripping Overburden with Dozer								
			Overburden Surface Area (acres)			0.0	10.9	3.6	7.3	0.6	
			Ripping Unit Cost per WDEQ Guideline No.12, App.H ($/acre)			$902.70	$902.70	$902.70	$902.70	$902.70	
			Subtotal Ripping Overburden Costs			$0	$9,848	$3,283	$6,565	$547	
	E.		Topsoil Application								
			Average haul distance (ft)			1500	5000	1500	1500	1500	
			Topsoil Surface Area (ft^2)			330000	475200	158400	316800	26400	
			Depth of Topsoil (ft)			0.5	0.5	0.5	0.5	0.5	
			Volume of Topsoil (cy)			6111	8800	2933	5867	489	
			Movement of Topsoil Unit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.02	$1.02	$1.02	$1.02	$1.02	
			Subtotal Topsoil Application Costs			$6,221	$8,958	$2,986	$5,972	$498	
	F		Discing/Seeding								
			Surface Area (acres)			7.6	10.9	3.6	7.3	0.6	
			Discing/Seeding Unit Cost ($/acre)			$606	$606	$606	$606	$606	
			Subtotal Discing/Seeding Costs			$4,594	$6,615	$2,205	$4,410	$367	
			Multiplier for Projected Additions			0	0	0	0	0	
			Subtotal Reclamation Costs per Access Road			$10,815	$29,602	$9,868	$19,734	$1,412	
			Total Access Road Reclamation Costs			**$71,431**					
III.	**Trunk Lines**					**SAT2 to Morton \WW Pipeline**	**SAT3 to SAT2 PSR**	**H-WF Rest. Bypass**	**Vollman WW Pipeline**	**SRHUP 9 WW Pipeline**	**Waste Transfer CPP to Sat #3**
			Length of Trench (ft)			24000	22000	2200	13000	4000	9700
	A.		Removal and Loading								
			Main Pipeline Removal Unit Cost ($/ft of trench)			$1.83	$1.83	$1.83	$1.83	$1.83	$1.83
			Subtotal Trunkline Removal and Loading Costs			$43,920	$40,260	$4,026	$23,790	$7,320	$17,751
	B.		Transport and Disposal Costs (NRC-Licensed Facility)								
		1.	3" HDPE Trunkline								
			Piping Length (ft)			24000	0	2200		4000	0
			Chipped Volume Reduction (ft^3/ft)			0.023	0.023	0.023	0.023	0.023	0.023
			Chipped Volume (ft^3)			559	0	51	0	93	0
		2.	4" HDPE Trunkline								
			Piping Length (ft)			0	22000	0	13000	0	9700
			Chipped Volume Reduction (ft^3/ft)			0.038	0.038	0.038	0.038	0.038	0.038
			Chipped Volume (ft^3)			0	846	0	500	0	373
		2.	6" HDPE Trunkline								
			Piping Length (ft)			0	0	0	0	0	0
			Chipped Volume Reduction (ft^3/ft)			0.083	0.083	0.083	0.083	0.083	0.083
			Chipped Volume (ft^3)			0	0	0	0	0	0
		3.	8" HDPE Trunkline								
			Piping Length (ft)			0	0	0	0	0	0
			Chipped Volume Reduction (ft^3/ft)			0.141	0.141	0.141	0.141	0.141	0.141
			Chipped Volume (ft^3)			0	0	0	0	0	0
		3.	10" HDPE Trunkline								
			Piping Length (ft)			0	0	0	0	0	0

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Miscellaneous Reclamation											
				Chipped Volume Reduction (ft^3/ft)	0.220	0.220	0.220	0.220	0.220	0.220
				Chipped Volume (ft^3)	0	0	0	0	0	0
		4.	12" HDPE Trunkline							
				Piping Length (ft)	0	0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)	0.309	0.309	0.309	0.309	0.309	0.309
				Chipped Volume (ft^3)	0	0	0	0	0	0
		5.	14" HDPE Trunkline							
				Piping Length (ft)	0	0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)	0.372	0.372	0.372	0.372	0.372	0.372
				Chipped Volume (ft^3)	0	0	0	0	0	0
		5.	16" HDPE Trunkline							
				Piping Length (ft)	0	0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)	0.486	0.486	0.486	0.486	0.486	0.486
				Chipped Volume (ft^3)	0	0	0	0	0	0
		6	18" HDPE Trunkline							
				Piping Length (ft)	0	0	0	0	0	0
				Chipped Volume Reduction (ft^3/ft)	0.616	0.616	0.616	0.616	0.616	0.616
				Chipped Volume (ft^3)	0	0	0	0	0	0
		Total Pipeline Disposal Volume			559	846	51	500	93	373
				Volume for Disposal Assuming 10% Void Space (ft^3)	615	931	56	550	102	410
				Transportation and Disposal Unit Cost (NRC-Licensed Facility) ($/ft^3$)	$6.06	$6.06	$6.06	$6.06	$6.06	$6.06
		Subtotal Transport and Disposal Costs			$3,724	$5,638	$339	$3,331	$618	$2,483
	C.	Discing/Seeding								
				Width of Pipeline Trench (ft)	10	10	8	8	8	4
				Area of Pipeline Trench (acres)	5.5	5.1	0.4	2.4	0.7	0.9
				Discing/Seeding Unit Cost ($/acre)	$606	$606	$606	$606	$606	$606
		Subtotal Discing/Seeding Costs			$3,341	$3,062	$245	$1,448	$445	$540
	Subtotal Reclamation Costs per Pipeline				$50,985	$48,960	$4,610	$28,569	$8,383	$20,774
	Total Pipeline Reclamation Costs				**$162,281**					
IV.	**Settling Basin/Storage Ponds Reclamation**				**E. Radium Pond**	**W. Radium Pond**	Total			
	A.	Soil Sampling and Monitoring								
				Number of Soil Samples	173	174				
				$/Sample	$164	$164				
		Subtotal Soil Sampling and Monitoring Costs			$28,419	$28,583	$57,002			
	B.	Contaminated Soil Removal and Disposal (Liner removed in 2003)								
				Thickness of subsoil (ft)	1	1				
				Volume of Contaiminated soil, (ft^3)	3000	0				
				Width of Pond (ft)	85	85				
				Length of Pond (ft)	140	140				
				Surface area of pond (ft^2)	11900	11900				
		1.	Removal and Loading							
				Volume of contaminated soil (cy)	111	0				
				Contaminated soil Removal and Loading Unit Cost ($/cy)	$3.91	$3.91				
		Subtotal Subsoil Removal and Loading Costs			$435	$0	$435			
		2.	Transportation and Disposal, 11e.(2) facility							
				Volume of soil for Disposal(yd^3)	111	0				

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Miscellaneous Reclamation												
				Transportation and Disposal Unit Cost ($/yd^3)			$281.82	$281.82				
				Subtotal Subsoil Transportation and Disposal Costs			$31,313	$0				
			Subtotal Subsoil Removal and Disposal Costs				$31,748	$0	$31,748			
	C.	Grade and Contour										
				Volume of Embankment Materials (cy)			6400	6400				
				Average Grade (%)			0	0				
				Distance (ft)			50	50				
				Material Moving Cost per WDEQ Guideline No. 12, App E ($/cy)			0.126	0.126				
			Subtotal Grade and Contour Costs				806.4	806.4	$1,613			
	D.	Soil Amendment										
				Area of surface disturbance (ft^2)			99000	99000				
				Area of surface disturbance (acres)			2.3	2.3				
				Hay Mulch Crimped and Soil Amendment			540.38	540.38				
			Subtotal soil amendment Application Costs				$1,228	$1,228	$2,456			
	E.	Discing/Seeding										
				Area of surface disturbance (acres)			2.3	2.3				
				Discing/Seeding Unit Cost ($/acre)			$606	$606				
			Subtotal Discing/Seeding Costs				$1,376	$1,376	$2,752			
	F.	Remediation verification testing					$20,000	$20,000	$40,000			
	Subtotal Reclamation Costs						$84,013	$51,994	$136,006			
	Total Settling Basin/Ponds Reclamation Costs						**$136,006**					
V.	**Purge Storage Reservoir Reclamation**						**PSR-1**	**PSR-2**				
	A.	Soil Sampling and Monitoring										
				Number of Soil Samples			10	10				
				$/Sample			$337	$337				
			Subtotal Soil Sampling and Monitoring Costs				$3,370	$3,370				
	B.	Leachate Collection System Removal Costs					$5,000	$0				
	C.	Topsoil/Subsoil Application										
				Assumptions:								
				Average haul distance (ft)			1000	150				
				Surface grade (%)			0	0				
				Volume of Topsoil/Subsoil (cy)			83000	74000				
				Movement of TopsoilUnit Cost per WDEQ Guideline No.12, App.C ($/cy)			$1.02	$1.02				
			Subtotal Topsoil/Subsoil Application Costs per Reservoir				$84,494	$75,332				
	D.	Discing/Seeding										
				Surface Area (acres)			6	32				
				Discing/Seeding Unit Cost ($/acre)			$606	$606				
			Subtotal Discing/Seeding Costs				$3,638	$19,404				
	Subtotal Reclamation Costs per Reservoir						$96,502	$98,106				
	Total Purge Storage Reservoir Reclamation Costs						**$194,608**					
VI.A	**Irrigation Maintenance and Monitoring Costs**						**Irrigator No.1**	**Irrigator No.2**				
	A.	Irrigation Maintenance and Repair										
				Irrigation Operation Months/Year			0	6				
				Cost per Month			$667	$1,940				
				Total Number of Years			0	10				
			Subtotal Maintenance and Repair Costs				$0	$116,395				
	B.	Irrigation Monitoring and Sampling										
				# of Irrigation Fluid Samples/Year			0	6				

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Miscellaneous Reclamation				
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Vegetation Samples/Year	5	5	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Soil Samples/Year	30	34	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	# of Soil Water Samples/Year	0	2	
	Cost/sample (Energy Labs - Casper Wyoming)	$337	$337	
	Total Number of Years	5	5	
	Subtotal Sampling Costs	$58,975	$79,195	
	Subtotal Maintenance and Monitoring Costs per Irrigator	$58,975	$195,590	
	Total Irrigation Maintenance and Monitoring Costs	**$254,565**		
VI.B	**Irrigation Area Reclamation**	**Irrigator No. 1A**	**Irrigator No. 2**	
A.	Irrigation Equipment Removal Costs	$2,000	$2,000	
B.	Plowing			
	Assumptions:			
	Plowing Unit Cost ($/acre)	$100	$100	
	Irrigation Area (acres)	55	106	
	Number of Cultivations	2	2	
	Subtotal Plowing Costs	$11,000	$21,200	
C.	Discing/Seeding			
	Discing/Seeding Unit Cost ($/acre)	$606	$606	
	Subtotal Discing/Seeding Costs	$33,350	$64,275	
	Subtotal Reclamation Costs per Irrigation Area	$46,350	$87,475	
	Total Irrigation Area Reclamation Costs	**$133,825**		
VII.	**Revegetation of Exxon Reclaimed Lands**			
	Assumptions:			
	10% Reseeding potential areas of erosion ($/acre)	$606		
	Surface Area (acres)	217		
	Total Exxon Reclaimed Lands Revegetation Costs	**$13,158**		
VIII.	**Potential Mitigation Plan For Irrigator No.1A (Requested by WDEQ-LQD)**			
	Assumptions:			
	Harvesting grass for 2 years will further reduce Se levels in vegetation.			
	Harvest grass for 2 years @ $2000/year.	$4,000		
	Analyze Se in grass for 2 years @$165/sample X 4 samples X 2 yrs.	$1,320		
	Analyze Se in soil for 2 years @$174/sample X 28 samples X 2 yrs.	$9,744		
	Add 1 ft. of Se free water to 58 acre irrigation area @ cost of $6000.	$6,000		
	If desired, plow, disk and reseed area with alfalfa @ cost of $4400.	$33,330		
	Total Potential Mitigation Plan Costs- Call $30,000	**$54,394**		
IX.	**Potential Mitigation Plan For Irrigator No.2 (Requested by WDEQ-LQD)**			
	Assumptions:			
	Harvesting grass for 2 years will further reduce Se levels in vegetation.			
	Harvest grass for 2 years @ $4000/year.	$8,000		
	Analyze Se in grass for 2 years @$165/sample X 4 samples X 2 yrs.	$1,320		
	Analyze Se in soil for 2 years @$174/sample X 32 samples X 2 yrs.	$11,136		

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Miscellaneous Reclamation													
								Add 1 ft. of Se free water to 116 acre irrigation area @ cost of $12000.		$12,000			
								If desired, plow, disk and reseed area with alfalfa @ cost of $8800.		$64,236			
								Total Potential Mitigation Plan Costs- Call $42,000		**$96,692**			
X.								**Potential Mitigation Plan for Shallow Well Casing Leak Investigation**					
								Assumptions:					
								Investigation and potential mitigation plan as of Feb 2009.					
								Assume cost of $2.4M					
								Total Preliminary Cost		**$2,400,000**			
XI.								**Miscellaneous**					
	A.							Fence Removal					
								Total Length of Fence (ft)		100,377			
								Fence Removal Cost		$0.37			
								Subtotal Fence Removal		$37,139			
	B.							Drill Water Tank Removal (offer to rancher; dispose of timbers)					
								Material (cy)		1.48			
								4 hours Cat 924G Loader		$175.72			
								4 hours truck		$72.30			
								4 hours labor (operator)		$131.49			
								Disposal costs		$12.01			
								Subtotal Drill Water Tank Removal		$392			
	C.							PSR2 Monitor Wells					
								Quantity		6			
								Depth		100.00			
								Total Depth		600.00			
								Cased Hole Abandonment cost		$2.50			
								Subtotal PSR2 Monitor Wells Abandonment		$1,500.00			
								Total Miscellaneous Structures Reclamation Costs		**$39,031**			
XII.								**Infrastructure, Equipment Maintenance, Replacement and Repairs** @$62,000/yr for 11 years		**$682,000**			
								Note: 11 years is used to account for active restoration period					
XIII.								**Purge Storage Reservoirs, 33 acres**					
		1.						Removal and Loading					
								Volume, 159718.8 yd2 x 6" deep, (yd3)		26,619.80			
								Removal and haulage cost per yd3		$1.19			
								Subtotal Purge Storage Reserviors materials removal and loading		$31,677.56			
		2.						Transportation and Disposal, 11e.(2) facility					
								Volume of soil for Disposal(yd^3)		26,620			
								Transportation and Disposal Unit Cost ($/$yd^3$)		$281.82			
								Subtotal Subsoil Transportation and Disposal Costs		$7,501,992.04			
								Total Purge Storage Reservoirs Reclaimation		**$7,533,669.60**			
TOTAL MISCELLANEOUS RECLAMATION COSTS										**$11,816,797**			
NOTE: Vehicle operation costs are captured in WF REC													

WELLFIELD ROAD RECLAMATION

Assumptions

1. Gravel road base removed at cost of **$0.85**/cy/1000 ft (WDEQ Guideline No. 12, App. C, Level Ground, 500 ft haul)
2. Gravel road base: average depth = 0.25 ft, average width = 10 ft
3. Roads scarified prior to topsoil application at cost of **$53.83/**acre (WDEQ Guideline No. 12, Appendix P)
4. Grading of scarified roads prior to topsoil application at cost of **$58.69**/acre (WDEQ Guideline No. 12, Appendix G)
5. Topsoil applied at cost of **$0.85**/cy/1000 ft (WDEQ Guideline No. 12, App. C, Level Ground, 500 ft haul)
6. Stripped topsoil: average depth = 0.67 ft, average width = 25 ft
7. Discing/seeding cost of acre is based on actual contractor costs as listed in the master costs

Gravel Road Base Removal Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{0.25\ \text{ft}}{} \times \frac{10\ \text{ft}}{} \times \frac{1\ \text{cy}}{27\ \text{ft}^3} \times \frac{\$0.85}{\text{cy}} = \$\ 79$$

Scarification Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$53.83}{\text{acre}} = \$\ 31$$

Grading Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$58.69}{\text{acre}} = \$\ 34$$

Topsoil Application Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{0.67\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{cy}}{27\ \text{ft}^3} \times \frac{\$0.85}{\text{cy}} = \$\ 527$$

Discing/Seeding Costs per 1000 ft of Road

$$\frac{1000\ \text{ft}}{} \times \frac{25\ \text{ft}}{} \times \frac{1\ \text{acre}}{4.356\text{E+04}\ \text{ft}^2} \times \frac{\$606}{\text{acre}} = \$\ 348$$

TOTAL WELLFIELD ROAD RECLAMATION COSTS PER 1000 FT OF ROAD **= $ 1,019**

Cameco Resources
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Groundwater Sweep (GWS) and Deep Disposal Well (DDW) Unit Costs

Assumptions:																	
1.	Wellfield pumps are 5 hp pumping at 25 gpm																
2.	Cost of electricity =															$0.0478	kwh
3.	Operator labor costs =															$262.97	man-day
4.	One 60 hp pump at the plant or satellite feeds two DDWs																
5.	One 75 hp at each DDW (pumps run on VFDs which reduces operating HP to match pumping rate)																
6.	Each DDW can take 75 gpm																
7.	Se Plant Media Cost 3 changes with disposal cost															$114,000	per year
Wellfield Pumping Electrical Costs per 1000 Gallons																	
	1000	gal/min		5	hp/pump		1440	Kgal/day							= $	0.12	
	25	gal/pump		0.746	Kwh/hp		$0.0478	/kwh									
	40	pumps		24	hr/day												
Wellfield Pumping Labor Costs per 1000 Gallons																	
	2	Oper.		$526	Labor cost/day										= $	0.37	
	$263	Cost/oper/day		1,440	kgal/day												
Groundwater Sweep Production Rate																	
	150	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*6,570,000*	*gallons*
		min			hr			day			year		12	month			*month*
Plant or Satellite to DDW Pumping Electrical Costs per 1000 Gallons																	
	150	gal		216	Kgal/day		$0.0478	$/Kwh							= $	0.238	
	60	HP		0.746	Kwh/HP		24	Hr/day									
DDW Pumping Costs per 1000 gallons																	
	75	gal		151.2	Kgal/day		$0.0478	$/Kwh							= $	0.425	
	75	HP		0.746	Kgal?day		24	Hr/day									
TOTAL GWS + DDW INJECTION COSTS PER 1000 GALLONS															**= $**	**1.15**	
TOTAL DDW INJECTION COSTS PER 1000 GALLONS															**= $**	**0.66**	
Selenium Plant - Media Cost																	
	180	gpm	X	1440	min/day	X	356	days/yr	=	92,275,200	gal	=	92275.2	kgal			
	Se Media Cost per year =						$114,000					=	**$1.24**	**kgal**			

Groundwater Reverse Osmosis (RO) and Bioremediation Unit Costs

Assumptions:																	
1.	Cost of electricity =															$0.0478	KW hr
2.	Operator labor costs =															$262.97	day
3.	RO System Horsepower:																
				RO Unit Pump				60	hp								
				Permeate/Injection pump				60	hp								
				Waste pump				15	hp								
				TOTAL:				135	hp								
4.	Chemical costs:																
				Sodium Sulfide												$0.38	pound
				Methanol =												$2.43	gal
				Antiscalant =												$16.19	gal
5.	Mix Rates																
				Sodium Sulfide				0.0001	pound/gal								
				Methanol (not used)				0.00025	gal/gal								
				Antiscalant				0.00000833	gal/gal								
6.	Based on 40 pumps to produce 1000 gpm - each pump does 25 gpm															1,440	Kgal/day
7.	RO Maintenance Costs															$0.07	per Kgal
Wellfield Pumping Electrical Costs per 1000 Gallons																	
40	pumps			0.746	Kwh/HP		$0.0478	electric rate							= $	$0.12	per Kgal
5	HP			24	Hrs/Day												
Reverse Osmosis/Bioremediation Electrical Costs per 1000 Gallons																	
135	HP			0.746	Kwh/HP		$0.0478	electric rate							= $	0.080	per Kgal
				24	Hrs/Day												
Reverse Osmosis/Bioremediation Labor Costs per 1000 Gallons, moved labor to GW Rest page, section VIII																	
0	Oper.			$0.00	Labor cost/day										= $	0.000	per Kgal
$263	Cost/oper/day			1,440	kgal/day												
Treatment chemical costs per 1000 Gallons																	
	Antiscalant:																
	1000	gal	X	0.000008330	gal antiscalant	X	$16.19								= $	0.135	per Kgal
				1	gal		gal antiscalant										
	Methanol (not used)																
	1000	gal	X	0.00000	gal methanol	X	$2.43								= $	0.000	per Kgal
				1	gal		gal methanol										
	Sodium Sulfide																
	1000	gal	X	0.00010	pounds	X	$0.38								= $	0.038	per Kgal
				1	gal		pound sodium sulfide										
Reverse Osmosis Production Rate																	
	1000	gal	X	60	min	X	24	hr	X	365	day	X	1	year	=	*43,800,000*	*gallons*
		min			hr			day			year		12	month			*month*
TOTAL RO COSTS PER 1000 GALLONS													= $	**0.40**			
TOTAL RO WITH CHEMICAL REDUCTANT COST PER 1000 GALLONS													= $	**0.44**			

Cameco Resources
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FIVE YEAR MECHANICAL INTEGRITY TESTS (MIT)													
Assumptions:													
1	Pulling Unit for 8 hr/day												
2	MIT Unit for 8 hr/day												
3	Labor for operation of pulling unit requires 2 workers												
4	Labor for operation of MIT Unit requires 1 worker												
MIT Costs per Well													
Equipment and Labor:													
	Pulling Unit with Operator												
		8	hours	X	$	82.74	per hour					=$	661.90
	Laborer												
		8	hours	X	$	22.48	per hour					=$	179.80
	MIT Unit with Operator												
		8	hours	X	$	67.22	per hour					=$	537.76
											TOTAL MIT COST PER DAY	**=$**	1379.00
	Wells Completed					6	per day						
MIT COSTS PER WELL												**=$**	229.83
MIT COSTS PER DEEP DISPOSAL WELL (2010 Cost)												**=$**	5907.53

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WELL ABANDONMENT Unit Costs												
Wells without pumps												
Assumptions:												
1	Typical 8 hour working day											
2	Average 700 feet per well											
3	Plug four (4) Wells per day		700	ft	X	4	=				2,800	
Cased Well Abandonment Costs											$ per day	**$ per foot**
	Cat 416 Backhoe	8	hours	X	$	116.88	per hour			=	$ 935.00	$0.33
	Water Truck	8	hours	X	$	106.25	per hour			=	$ 850.00	$0.30
	Hose Reel	8	hours	X	$	62.50	per hour			=	$ 500.00	$0.18
	Cementer	8	hours	X	$	32.90	per hour			=	$ 800.00	$0.29
Materials per foot of well												
	Cement	0.08571429	sacks/	X	$	16.00	per sack			=	$ 3,840.00	$1.37
	Bentonite	0.006	sacks/	X	$	4.31	per sack			=	$ 68.96	$0.02
Total Estimated Cost per Day											$ 6,993.96	
Total Estimated Cost per Foot based on Tyler Exploration Quote #502 dated 3-11-11:												**$2.50**
Wells with pumps												
Assumptions:												
1	Typical 8 hour working day											
2	Average 700 feet per well											
3	Plug four (4) Wells per day		700	ft	X	4	=				2,800	
Cased Well Abandonment Costs											$ per day	**$ per foot**
	Cat 416 Backhoe	8	hours	X	$	116.88	per hour			=	$ 935.00	$0.33
	Pulling Unit	8	hours	X	$	106.25	per hour			=	$ 850.00	$0.30
	Water Truck	8	hours	X	$	106.25	per hour			=	$ 850.00	$0.30
	Hose Reel	8	hours	X	$	62.50	per hour			=	$ 500.00	$0.18
	Cementer	8	hours	X	$	139.76	per hour			=	$ 800.00	$0.29
Materials per foot of well												
	Cement	0.08571429	sacks/	X	$	16.00	per sack			=	$ 3,840.00	$1.37
	Bentonite	0.006	sacks/	X	$	4.31	per sack			=	$ 68.96	$0.02
Total Estimated Cost per Day											$ 7,843.96	
Total Estimated Cost per Foot based on Tyler Exploration Quote #503 dated 4-29-11:												**$2.80**

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REMOVAL OF CONTAMINATED SOIL AROUND WELLS Unit Cost												
Assumptions:												
1	Use backhoe for 0.25 hr/well to dig											
2	Radiation Technician measures extent of contamination for 0.25 hr/well											
Assessment/Removal Costs												**Cost per well**
	Cat 416 Backhoe											
		0.25	hours	X	$	25.42	per hour					$6.35
	Radiation Technician											
		0.25	hours	X	$	27.43	per hour					$6.86
	Operator											
		0.25		X	$	32.87	per hour					$8.22
	Remove Casing	1	well	X	$	15.00	per well			=		$15.00
	Hole Plug/Cap	1	each	X	$	7.50	each			=		$7.50
	Site Grading & Seeding	2.13	each	X	$	31.00	per sm site			=		$66.03
Disposal and Transportation Costs												
	Contaminated Soil per Well					0.370	cy per well					
	Disposal and Transportation				$	281.82	per cy					$104.27
Total Estimated Cost per Well:												**$214.23**
DELINEATION HOLE ABANDONMENT Unit Costs												
Assumptions:												
1	Use the cased well abandonment cost as base.											
2	Other cost per Guideline 12 appendix L											
Hole Abandonment Costs											**Cost per Well**	**Cost per ft (based on 700 ft holes)**
												700
	Cased Well Abandonment Cost (per above breakdown)										**1,750.00**	$ 2.500
	Hole Plug/Cap	1	each	X	$	7.50	each			=	7.50	$ 0.011
	Site Grading & Seeding	2.13	each	X	$	31.00	per sm site			=	66.03	$ 0.094
											73.53	
Total Estimated Cost per Well											**1,823.53**	
Total Estimated Cost per Foot:												**$2.61**

Wellfield Building/Clay Liner Removal					
Cost per Well Head Cover					
	Radiation Tech =	27.43	per hour		
	Operator =	32.87	per hour		
	Total Wellhead Covers =	3,024.00			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	4.1	pounds per wellhead cover		
	Acid Unit Cost =	$ 0.66	per wellhead cover		
	Total Labor Rate =	$ 66.87	per hour		
	Cleaning Rate	10	wellheads per hour		
	Survey / Decon.	**$ 6.69**	**per wellhead cover**		
Cost per Header House					
	Rad Technician =	27.43	per hour		
	Operator =	32.87	per hour		
	Number of Operators =	2			
	HCl 35% Cost =	$ 0.160	per pound		
	Acid Usage Rate =	20	pounds per header house		
	Acid Unit Cost =	$ 3.20	per header house		
	Total Labor Rate =	$ 578.98	per hour		
	Cleaning Rate	1	header house per day		
	Survey / Decon.	**$ 578.98**	**per header house**		
Clay Liner/Subsoil Removal Cost					
	Operator =	32.87	per hour		
	Trackhoe =	$ 79.68	per hour		
	Loader =	$ 43.93	per hour		
	Loader Size =	1.5	cubic yards		
	Disposal Rate =	40	yards/hour		
	Total Removal	**$ 3.91**	**per cubic yard**		

	ACID WASH							
	Assumptions:							
	10% wash solution is used							
	0.25 gallon of acid wash is used per sq ft. to clean walls.							
	1 gallon of acid wash is used per sq ft. to clean floors.							
	Using the CPP square footages the assumption is as follows							
	Acid Wash (Walls)							
	Labor	2	Men					
	Rate	$22.48	hr.					
	Time	20	8hr. Days					
	Manlift Rental	$49.85	Month					
	CPP Wall Area	26710	square feet					
	Labor and manlift	$0.27	per square foot					
	Acid	$0.16	pound					
	Consumables	$0.05	per square foot					
	Total	$0.48	per square foot					
	Acid Wash (Floors)							
	Labor	2	Workers					
	Rate	$22.48	hr.					
	Time	15	8hr. Days					
	CPP Floor Area	17820	square feet					
	Labor	$0.30	per square foot					
	Acid	$0.16	pound					
	Consumables	$0.05	per square foot					
	Total	$0.51	per square foot					

Electrical Power Consumption and Costs - During Restoration

Description	Operating Horsepower	Voltage	Lighting FT^2	Lighting Watts (1.25 watts/FT^2)	Electric Heat Kw	Electric Air Condioning Kw	Kw/HP	Kwhr/HP hr	Operating Hours/yr	Kwhr/yr	Power Cost $/Kwhr	Electrical Cost/year
Sat 2 1,250 Gallon RO and Support Equip												
RO Feed Pump (cost of power in RO operating cost)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump (cost of power in RO operating)	-	480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Fan	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			28,050	1.25					8,760	307,148	0.04780	$ 14,681.65
Sat 2 Electrical Power Cost per Year Total												**$ 21,710.00**
Se Plant 500 Gallon RO and Support Equip.												
PC Booster Pump	40.0	480					0.746	0.746	8,760	261,398	0.04780	$ 12,494.84
RO Feed Pump (cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decar/Re-injection Pump ((cost of power in RO operating cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Decarb-Compressor	5.0	480					0.746	0.746	8,760	32,675	0.04780	$ 1,561.86
Decarb Booster Pump	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Misc. Equip. (metering pumps, fans, sump pumps)	10.0	480					0.746	0.746	8,760	65,350	0.04780	$ 3,123.71
Air Compressors	7.5	480					0.746	0.746	8,760	49,012	0.04780	$ 2,342.78
Lighting (1.25 watts/sqft)			18,640	1.25					8,760	204,108	0.04780	$ 9,756.36
Se Plant 500 Gallon RO and Support Equip. Total												**$ 32,403.27**
DDW Vollman 33-27												
DDW PD Injection Pump (is included in DDW Cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			390	1.25					8,760	4,271	0.04780	$ 204.13
DDW Vollman 33-27 Injection Pump Support Equip. Total												**$3,410.07**
DDW SHRUP #9												
DDW PD Injection Pump (is included in DDW Cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
DDW SRHUP 9 Injection Pump Support Equip. Total												**$3,411.12**
DDW Morton 1-20												
DDW PD Injection Pump (is included in DDW Cost)		480					0.746	0.746	8,760	-	0.04780	$ -
Misc. Equip. (metering pumps, fans, sump pumps)	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Air Compressors	1.0	480					0.746	0.746	8,760	6,535	0.04780	$ 312.37
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Lighting (1.25 watts/sqft)			392	1.25					8,760	4,292	0.04780	$ 205.18
Morton 1-20 Injection Pump Support Equip. Total												**$3,411.12**
PSR2 & Irrigator												
Feed Water Pump	40.0	480					0.746	0.746	3,600	107,424	0.04780	$ 5,134.87
Irrigator	50.0	480					0.746	0.746	3,600	134,280	0.04780	$ 6,418.58
Sampler	-	480			0.5				3,600	1,800	0.04780	$ 86.04
PSR2 & Irrigator Total												**$ 11,639.49**
Header House heating, Typical												
Heater - electric Kw (includes wellhead)	-	480			12.5				4,320	54,000	0.04780	$ 2,581.20
Header House heating, Typical Total												**$2,581.20**

Heating Cost by Building

	Flooring Sq. Feet	Wall Sq. Feet	Number Of Fans	Fan CFM	AIR Exchange BTU/hr (ΔT=40)	Building BTU/hr (ΔT=40, R=20)	Combined BTU/hr	Heating Months	Determine Which Fuel is Used: $$ per Million BTUs (Fuel Specific)	Nat. Gas $$ / yr	Propane $$ / yr
Sat-2 (6x6" Tank Fans)	12,375	12,000	6	1,500	61,772	48,750	110,522	5	$6.00	$3,034	
Se Removal Bldg. (2009/2010)	12,000	12400	1	9,000	370,630	48,800	419,430	5	$6.00	$11,513	

Estimated Ventilation CFM and impact on heating $$/yr does not account for time with building doors left open.

WELLFIELD PIPING REMOVAL Unit Costs

Assumptions:

1. Trenching with Trackhoe at 1000 ft per day
2. Pipeline extraction and backfilling with Trackhoe & loader at 20 1000 feet per day
4. Trackhoe operation requires 1 worker
5. Pipeline extraction requires 2 workers
6. Operating schedule: 8 hrs/day, 5 days/week

Equipment

Trackhoe										
	$ 79.68 / hour	X	8 hours / day		1 day / 1000 ft		=$ 0.64	per foot		
Loader										
	$ 43.93 / hour	X	8 hours / day	X	1 day / 1000 ft		=$ 0.35	per foot		
Pickup										
	$ 18.08 / hour	X	8 hours / day	X	1 day / 1000 ft		=$ 0.14	per foot		

Labor

Trackhoe Operation										
	$ 32.87 / man hr	X	8 man hrs / 1 day	X	1 days / 1000 ft		=$ 0.26	per foot		
Loader Operation										
	$ 32.87 / man hr	X	8 man hrs / 1 day	X	1 day / 1000 ft		=$ 0.26	per foot		
Pipeline Extraction Laborer										
	$ 22.48 / man hr	X	8 man hrs / 1 day	X	1 day / 1000 ft		=$ 0.18	per foot		

MAIN PIPELINE REMOVAL COST =$ 1.830 per foot

Chipped Pipe Volume Calculations

Pipe Diam Inches	SDR	OD	ID	Wall Thickness	Area of Plastic in Crossection (ft^2)	Volume of Plastic per Linear Foot (ft^3)
1.5	11	1.900	1.534	0.183	0.0069	0.0069
2	11	2.375	1.917	0.229	0.0107	0.0107
3	11	3.500	2.825	0.3375	0.0233	0.0233
4	11	4.500	3.633	0.4335	0.0385	0.0385
6	11	6.625	5.348	0.6385	0.0834	0.0834
8	11	8.625	6.963	0.831	0.1413	0.1413
10	11	10.750	8.678	1.036	0.2196	0.2196
12	11	12.750	10.293	1.2285	0.3088	0.3088
14	11	14.000	11.302	1.349	0.3723	0.3723
16	11	16.000	12.916	1.542	0.4864	0.4864
18	11	18.000	14.531	1.7345	0.6155	0.6155

Equipment Costs - based on Cost Reference Guide - Equipment Watch 2010

Gasoline cost/gallon= 2.. $ 2.63

Diesel Cost/ gallon = $ 2.68

GEC = ground engaging components 18%

Equipment Description	Hourly Ownership & Overhaul Cost: Ownership: Depr. $	CFC $	O'Head $	Overhaul: Labor $	Parts $	Field Repair & Operating Expenses (no operator labor): Labor $	Parts $	Fuel consum. Gal/hr	Fuel $	Lube $	Tires $	GEC $	Total Operating cost/hr	Total Hourly Cost	Owner's Profit & OH / hr	Cost/hr
Cat 14H Grader - 14' Blade	$ 16.53	$ 7.29	$ 9.16	$ 3.95	$ 8.32	$ 3.29	$ 8.07	7.04	$ 18.87	$ 4.22	$ 5.14	$ 0.64	$ 40.23	$ 85.48	$ 15.39	**$ 100.86**
Bobcat S250 Skid Steer Loader	$ 1.95	$ 0.64	$ 0.78	$ 1.75	$ 1.31	$ 1.42	$ 0.93	2.78	$ 7.44	$ 0.84	$ 0.85	$ 0.08	$ 11.56	$ 17.99	$ 3.24	**$ 21.23**
Backhoe 416E Extendable Boom	$ 3.85	$ 1.51	$ 1.30	$ 1.21	$ 0.92	$ 1.23	$ 1.14	2.88	$ 7.71	$ 1.57	$ 0.95	$ 0.15	$ 12.75	$ 21.54	$ 3.88	**$ 25.42**
Cat 924H 4-WD Wheel Loader	$ 8.05	$ 2.76	$ 2.63	$ 2.30	$ 1.85	$ 2.85	$ 1.80	4.12	$ 11.05	$ 1.87	$ 1.83	$ 0.24	$ 19.64	$ 37.23	$ 6.70	**$ 43.93**
Cat 615C Elevating Scarper	$ 17.88	$ 7.79	$ 7.88	$ 7.89	$ 14.79	$ 12.27	$ 13.31	10.07	$ 26.98	$ 5.18	$ 3.33	$ 1.14	$ 62.21	$ 118.44	$ 21.32	**$ 139.76**
Cat D8R Dozer - Semi U Blade	$ 21.97	$ 7.90	$ 7.53	$ 7.89	$ 14.36	$ 8.77	$ 13.86	11.36	$ 30.44	$ 5.41	$ -	$ 2.01	$ 60.49	$ 120.14	$ 21.63	**$ 141.77**
Cat 320C L Trackhoe	$ 16.31	$ 5.02	$ 3.64	$ 5.70	$ 5.60	$ 5.70	$ 5.60	5.80	$ 15.53	$ 3.52	$ -	$ 0.90	$ 31.25	$ 67.52	$ 12.15	**$ 79.68**
Concrete Jaws Labounty - CP-60	$ 1.57	$ 0.47	$ 0.47	$ 0.81	$ 0.39	$ 7.30	$ 1.95	-	$ -	$ 0.21	$ -	$ -	$ 9.46	$ 13.17	$ 2.37	**$ 15.54**
Grove RT700E 50 ton RT Crane	$ 20.62	$ 6.85	$ 8.83	$ 6.07	$ 9.81	$ 5.85	$ 13.79	11.54	$ 30.93	$ 6.22	$ 5.70	$ -	$ 62.49	$ 114.67	$ 20.64	**$ 135.31**
Vermeer 1230 Chipper	$ 2.19	$ 0.40	$ 0.60	$ 1.21	$ 1.38	$ 0.99	$ 1.02	2.92	$ 7.82	$ 0.83	$ 0.26	$ 0.69	$ 11.61	$ 17.39	$ 3.13	**$ 20.52**
JLG 600S Manlift - 60 ft (Gas)	$ 11.12	$ 2.18	$ 1.51	$ 5.10	$ 4.52	$ 5.26	$ 1.87	3.11	$ 8.18	$ 1.71	$ 0.80	$ -	$ 17.82	$ 42.25	$ 7.60	**$ 49.85**
Pressure Washer 5 gpm 2200 psi	$ 0.21	$ 0.04	$ 0.03	$ 0.34	$ 0.09	$ 0.52	$ 0.04	0.50	$ 1.32	$ 0.17	$ -	$ -	$ 2.05	$ 2.76	$ 0.50	**$ 3.25**
Pick-up Truck 3/4 ton 4X4	$ 2.66	$ 0.44	$ 0.37	$ 0.59	$ 0.54	$ 0.75	$ 0.52	3.14	$ 8.26	$ 0.79	$ 0.40	$ -	$ 10.72	$ 15.32	$ 2.76	**$ 18.08**
Pulling Unit - Truck 1.75 Ton 4X4	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11		
Hoisting Unit - Hydraulic 18000#	$ 4.91	$ 0.90	$ 0.78	$ 1.46	$ 1.32	$ 1.80	$ 1.52	-	$ -	$ 0.46	$ -	$ -	$ 3.78	$ 13.15		
Pulling Unit Total	$ 8.97	$ 1.61	$ 1.50	$ 2.12	$ 2.20	$ 2.63	$ 2.37	6.88	$ 18.09	$ 2.12	$ 0.65	$ -	$ 25.86	$ 42.26	$ 7.61	**$ 49.87**
MIT Truck - 1.75 Ton 4X4 Gas	$ 4.06	$ 0.71	$ 0.72	$ 0.66	$ 0.88	$ 0.83	$ 0.85	6.88	$ 18.09	$ 1.66	$ 0.65	$ -	$ 22.08	$ 29.11	$ 5.24	**$ 34.35**
Mobile Mixer Trailer Mounted - Cementer - Grout mixer pumper	$ 5.86	$ 1.12	$ 1.07	$ 4.16	$ 1.68	$ 5.48	$ 1.85	2.02	$ 5.41	$ 0.85	$ 0.40	$ -	$ 13.99	$ 27.88	$ 5.02	**$ 32.90**
GooseNeck Trailer 3 Axle - fixed	$ 2.85	$ 0.76	$ 0.45	$ 1.42	$ 0.88	$ 1.64	$ 1.22	-	$ -	$ 0.29	$ 2.24	$ -	$ 5.39	$ 11.75	$ 2.12	**$ 13.87**
GEHL DL-8 Rough Terrain Lift Truck	$ 8.35	$ 1.88	$ 1.92	$ 5.06	$ 4.93	$ 5.28	$ 3.31	3.23	$ 8.66	$ 1.61	$ 1.43	$ -	$ 20.29	$ 42.43	$ 7.64	**$ 50.07**

Mine Unit Data

		Mine Unit-A	Mine Unit-B	Mine Unit-C (wells added for restoration no increase in affected volume)	Mine Unit- C22	Mine Unit-C Haul Drifts	Mine Unit-D	Mine Unit- D Ext	Mine Unit E	Mine Unit F	Mine Unit H	Mine Unit I	Mine Unit J	Mine Unit J Ext
Total number of production wells		0	141	137	0	0	49	13	120	614	136	249	197	0
Total number of injection wells		0	188	313	0	0	102	29	237	948	329	459	387	0
Total number of monitor wells		9	69	104	0	0	38	15	72	109	86	78	82	0
Flare Factor		2.94	2.94	2	2	0	2.5	2.5	2.6	2	2.4	2.5	2.5	2.5
Wellfield Area (ft2)		151,900	690,900	1,067,056	325,000	0	326,750	201,509	971,941	3,775,191	1,222,583	2,293,918	1,148,680	29,600
Wellfield Area (acres)		3.49	15.86	24.50	7.46	0.00	7.50	4.63	22.31	86.67	28.07	52.66	26.37	0.68
Affected Ore Zone Area (ft2)		151,900	690,900	1,067,056	325,000	0	326,750	201,509	971,941	3,775,191	1,222,583	2,293,918	1,148,680	29,600
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)		6,698,790	30,468,690	34,145,792	9,750,000	0	13,886,875	8,564,133	40,432,746	120,806,112	46,947,187	114,695,900	43,075,500	0
Kgallons per Pore Volume		13,529	61,535	68,961	19,691	0	28,046	17,296	81,658	243,980	94,815	231,640	86,995	0
Number of Patterns in Unit(s)									previous, sf	3431990		1146959		
Number of Wells in Unit(s)														
Production Wells					Wells included in MU-C									
	Current	0	141	137	0	0	49	13	120	614	136	249	197	0
	Total Estimated	0	141	137	0	0	49	13	120	614	136	249	197	0
Injection Wells														
	Current	0	188	313	0	0	102	29	237	948	329	459	387	0
	Total Estimated	0	188	313	0	0	102	29	237	948	329	459	387	0
Monitor and Restoration Wells														
	Current	9	69	104	0	0	38	15	72	109	86	78	82	0
	Total Estimated	9	69	104	0	0	38	15	72	109	86	78	82	0
Number of Wells per Wellfield		9	398	554	0	0	189	57	429	1671	551	786	666	0
Total Number of Wells		5310												
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
Delineation Holes Estimated Next Report Period		0	0	0	0	0	0	0	0	0	0	0	0	0
Length of Fencing (ft)		0	0	18694	0	0	14060	0	18426	29540	9680	0	9977	9977
Number of Deep Disposal Wells	3													

Electrical Costs		
	2008 Actual	
Power cost	$0.0478	kwHr
Kilowatt to Horsepower	0.746	Kw/HP
Horsepower per gallon per minute	0.167	HP/gpm

Labor Rates			
Latest Available, Wyoming, Mountain States Employers Council, July, 2009		Inc 45% benefits (i.e., overhead)	
Environmental Manager/RSO	$45.43	$65.87	hour
Restoration Manager/Hydrologist	$32.21	$46.70	hour
Operator	$22.67	$32.87	hour
Laborer	$15.50	$22.48	hour
Engineer	$32.21	$46.70	hour
Radiation/Environmental Engineering Technician	$18.92	$27.43	hour
2,080 working hours in a year	176	hours per month	

Chemical Costs		
	2010 Actual	
Antiscalant for RO	$16.19	gal
Sodium Sulfide	$0.38	pound
Methanol	$2.43	gal
Cement	$5.94	sack
Bentonite Tubes	$2.90	tube
Plug Gel	$7.30	sack
Well Cap - per guideline 12	$7.50	each
Hydrochloric Acid	$0.16	pound

Analytical Costs		
	2010 Actual	
Modified Guideline 8 (contract lab adjusted for current contract cost)	$337.00	analysis
6 parameter (contract lab) Est Rate (CPI)	$100.00	analysis
Other (radon, bio, etc.) Est Rate (CPI)	$1,000.00	month

Cost to Refurbish Mine Units	$/ea
Cost to refurbish Well	$14,000
Cost to refurbish Bell Hole	$8,886
Cost to refurbish Header House	$32,000

Equipment Costs

Equipment	*Base Rental*	*Labor Costs*	*Total ($/hr)*
Cat 924G Loader - 2.25 cu yd bucket	$43.93	N/A	$43.93
Cat 416 Backhoe	$25.42	N/A	$25.42
Shredder	$20.52	N/A	$20.52
Cat D8N Bulldozer	$141.77	N/A	$141.77
Pulling Unit with Operator	$49.87	$32.87	$82.74
MIT Unit with Operator	$34.35	$32.87	$67.22
GEHL DL-8 Rough Terrain Lift Truck	$50.07	N/A	$50.07
Drill Rig (workover, repair, P&A) with all labor, water truck	$200.00	inc	$200.00
Goose Neck Trailer	$13.87	N/A	$13.87
Manlift	$49.85	N/A	$49.85
Cementer	$32.90	N/A	$32.90
Crane with operator	$135.31	$32.87	$168.18
Cat 320C L Trackhoe - 1.5 cu yd bucket	$79.68	N/A	$79.68
Concrete Jaws Labounty - CP-60	$15.54	N/A	$15.54
Pick-up Truck 3/4 ton 4X4	$18.08	N/A	$18.08
Hose Reel	$62.50	N/A	$62.50
Bobcat S250 Skid Steer Loader	$21.23	N/A	$21.23
Cat 14H Grader - 14' Blade	$100.86	N/A	$100.86
Cat 615C Elevating Scarper	$139.76	N/A	$139.76

Basis:
Drill rig based on current 2010 contracts
Equipment rates based on Cost Reference Guide - Equipment Watch 2010 updated addition - see UC - Equip Cost Tab

Waste Disposal Costs

Waste Form	*Fee**		*Load Correction Factor (Tons/Yd3)*	*Fee per Cubic Yard*	*Transport Cost***		*Total Transportation and Disposal Cost*	
Soil, Concrete, Bulk Byproduct Material - 11E2	$141.20	per Ton	1.1	$155.32	$126.50	per Yd3 **	$281.82	per Yd3
							$10.44	per ft3
Unpackaged Bulk Byproduct Material (e.g., pipe) - 11E2	$165.22	per Ton	0.42	$69.39	$94.11	per Yd3 ***	$163.50	per Yd3
							$6.06	per ft3
Solid Waste (county landfill)	$0.00827	per Lb			Incl.	per Lb	$0.00827	per Lb
Solid Waste (county landfill)	$133.75	per Load			Incl.	per Load	$133.75	per Load
			0.42				$0.66	per ft3
Void Factor (for disposal)	1.25							

* Fee includes all misc taxes and other surcharges. Based on Denison Mines invoice rec. 4/25/11
** Transport costs based on invoice from Greenfield logistics rec'd 4/14/11, all-in rate is $224.07/m
*** Transport costs based on rates from equipment watch last qtr 2009; no actual cost available at this time. $75/hr * 25.3 to dump site / 15cy load

County landfill charges 3yd = $113.58, 6yd = $172.10 plus surcharge

Load Correction Factors - difference between solid material and when it is broken because of air space between the pieces of material, the coarser the material the lower the load factor (or the finer the material the higher the factor) The table below shows some examples of load factors for several common materials, including concrete These factors are from the Caterpillar Performance Handbook and the Engineering Pocket Reference Guide.

Material	Pounds/CY Solid (bank)	Pounds/CY Broken (Loose)	% Dif.	Load Factor	Conv. To CY
Granite	4536	2781	39%	0.61	1.631068
Limestone	4401	2619	40%	0.60	1.680412
Sandstone	3915	2538	35%	0.65	1.542553
Concrete	3996	2176	46%	0.54	1.836397
Sand & gravel	2700	2400	11%	0.89	1.125

Guideline No. 12 Unit Costs (includes profit)

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

Task	Cost per unit	Regional Cost Adjustment	Adjusted Cost per Unit
Mixture of Types	$0.26 ft3	0.957	$0.249 ft3
Explosive Demolition, Concrete or Steel	0.24 ft3	0.957	$0.230 ft3
Disposal (Average)	8.48 cy	0.957	$8.115 cy
City Landfill Dump Charges	$100.00 ton	0.957	$95.700 ton
Concrete Footings and Foundations			
6" Thick with Rebar	5.28 ft2	0.957	$5.053 ft2
Footings - 2' Thick, 3' Wide	18.95 lin. ft.	0.957	$18.135 lin. ft.
Concrete Disposal Off-Site	8.48 cy	0.957	$8.115 cy

App C, Calculations for Moving Materials with a Caterpillar 637G Push-Pull Scraper Fleet	Operating Cost per bank (in situ) cubic yards	
One-Way Distance 500 feet, 0% grade	$0.852	$0.852 bcy
One-Way Distance 1,000 feet, 0% grade	$1.018	$1.018 bcy
One-Way Distance 2,000 feet, 0% grade	$1.319	$1.319 bcy
One-Way Distance 6,500 feet, 5% grade	$3.566	$3.566 bcy

App E, Calculations for Moving Material with a Caterpillar D9R Dozer	Operating Cost per linear cubic yard	
Distance 50 feet	$0.126	$0.126 lcy

App H, Cost Estimates for Handling Wire Fencing and Electrical Power Lines		
Fencing Removal	$0.37	$0.37 linear foot

App I, Cost Estimate for Ripping Asphalt Using a Caterpillar D9R Dozer	Operating Cost	
	$664.28	$664.28 per acre

App H, Cost Estimate for Ripping Overburden Using a Caterpillar D10R Dozer		Operating Costs	
	0.27 acre/hour	$243.73	$243.73 per hour
			$902.70 per acre

Seeding Unit Costs

Discing / Seeding/Topsoil Costs	2010 Actual
Seed cost	$65.99 per acre
Hay Mulch Crimped and Soil Attendment	$540 per acre
Seed and Mulch	$606 per acre
Depth of Topsoil	0.5 feet