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January 27, 2012

U.S. Nuclear Regulatory Commission Attn: Douglas Mandeville 11545 Rockville Pike Two White Flint North, Mailstop T8 F5 Rockville, MD 20852-2738

RE: Source Material License SUA-1548, Docket No. 40-8964 2012-2013 Surety Estimate Update for North Butte Satellite Facility

Dear Mr. Mandeville:

Pursuant to License Condition 9.5 of SUA-1548, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing (2) copies of the proposed 2012-2013 Year 1 Mining Operations Reclamation Surety Bond Estimate submitted to the Wyoming Department of Environmental Quality/Land Quality Division in the amount of \$10,155,015. The new surety covers removal, disposal, and reclamation of process equipment, buildings, boreholes, and wells constructed during the first two year of mining operations. Unit costs from WDEQ Guideline 12, November 2011, were used to calculate totals. If you have comments or questions, please contact Jeanie Wolford in our Casper Office at telephone 307-333-7644.

Sincerely, CAMEÇO RESOURCES

Josh Leftwich Director, SHEQ

Attachment: 2012-2013 Year 1 Mining Operations Reclamation Surety Bond Estimate, North Butte Satellite Facility

- cc: Document Control Desk, NRC File NB
- ec: Cameco-Cheyenne



Annual Report 2011 North Butte Permit to Mine No. 632 Cameco Resources

APPENDIX B

RECLAMATION SURETY BOND ESTIMATE YEAR 1 MINING OPERATIONS

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

TOTAL RECLAMATION COST ESTIMATE

TOTAL CALCULATED SURETY (IN 2012 DOLLARS)	\$10,155,015
ADDITIONAL MISCELLANEOUS AND UNKNOWN COSTS (15%) **	\$1,324,567
SUBTOTAL	\$8,830,448
CONTRACTOR PROFIT, OVERHEAD, MOBILIZATION, DEMOBILIZATION COSTS (10%) *	\$802,768
SUBTOTAL RECLAMATION COST ESTIMATE	\$8,027,680
PART V. MISCELLANEOUS SURFACE RECLAMATION COST	\$845,874
PART IV. WELL & BOREHOLE ABANDONMENT COST	\$5,590,562
PART III. WELLFIELD BUILDINGS & EQUIPMENT REMOVAL & DISPOSAL COST	\$902,757
PART II. BUILDING DEMOLITION AND DISPOSAL COST	\$577,322
PART I. PROCESS EQUIPMENT REMOVAL & DISPOSAL COST	\$111,165

* Based on WDEQ-LQD Guideline No. 12, Section II(B)(12)(b) ** Based on WDEQ-LQD Guideline No. 12, Sections II(B)(12)(except b) and (13)

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

PART I: PROCESS EQUIPMENT REMOVAL & DISPOSAL	Satellite Plant
A. Removal and Loading Costs	
1. Tankage	
Number of Tanks	25
Volume of Tank Construction Material (ft3)	1190
a. Labor	
Number of Persons	3
Ft3/Day	25
Number of Days	48
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$19,849
Number of Days	
\$/Day	\$1,515
Subtotal Equipment Costs	\$72,732
Subtotal Tankage Removal and Loading Costs	\$92,581
2. PVC Pipe	
PVC Pipe Footage	6000
Average PVC Pipe Diameter (inches)	4
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.016
Volume of Shredded PVC Pipe (ft3)	、
a. Labor	
Number of Persons	2
Ft/Day	300
Number of Days	20
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$5,514
b. Shredding Costs	
Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
Subtotal Shredding Costs	\$672
Subtotal PVC Pipe Removal and Loading Costs	\$6,186
3. Pumps	
Number of Pumps	16
Average Volume (ft3/pump)	4.93
Volume of Pumps (ft3)	78.88
a. Labor	· · · · · · · · · · · · · · · · · · ·
Number of Persons	· · · · · · · · · · · · · · · · · · ·
Pumps/Day	2
Number of Days	8
\$/Day/Person	\$138
Subtotal Pump Removal and Loading Costs	\$1,103

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2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

PART I: PROCESS EQUIPMENT REMOVAL & DISPOSAL	Satellite Plant
4. RO Units	
Volume (ft3)	250
a. Labor	
Number of Persons	2
Ft3/Day	175
Number of Days	1
Labor Costs (per 8 hr day)	\$138
Subtotal Labor Costs	\$275.68
Total Equipment Removal and Loading Costs	\$100,145
B. Transportation and Disposal Costs (NRC-Licensed Facility)	
1. Tankage	
Volume of Tank Construction Material (ft3)	1190
Volume for Disposal Assuming 10% Void Space (ft3)	1309
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal Tankage Transportation and Disposal Costs 2. PVC Pipe	\$9,604
Volume of Shredded PVC Pipe (ft3)	96
Volume for Disposal Assuming 10% Void Space (ft3)	106
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal PVC Pipe Transportation and Disposal Costs	\$778
3. Pumps	·····
Volume of Pumps (ft3)	78.88
Volume for Disposal Assuming 10% Void Space (ft3)	87
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal PVC Pipe Transportation and Disposal Costs	\$638
Total Equipment Transportation and Disposal Costs	\$11,020
TOTAL EQUIPMENT REMOVAL + DISPOSAL COSTS	\$111,165

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW.2 Bldg
A. Decontamination Costs			
1. Wall Decontamination			
Area to be Decontaminated (ft2)	0	704	704
HCI Acid Wash (\$/per sq ft.)	\$0.971	\$0.971	\$0.971
Subtotal Wall Decontamination Costs	\$0	\$683	\$683
2. Concrete Floor Decontamination	80		
Area to be Decontaminated (ft2)	19200	480	480
HCI Acid Wash (\$/Gallon)	\$0.440	\$0.440	\$0.440
Subtotal Concrete Floor Decontamination Costs	\$8,443	\$211	\$211
Subtotal Decontamination Costs per Building	\$8,443	\$894	\$894
Total Decontamination Costs			\$10,231
B. Demolition Costs			
1. Building			
Assume:			
Total Building Surface Area	49,080	4,800	4.800
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)	\$0.262	\$0.262	\$0.262
Subtotal Building Demolition Costs	\$12,854	\$1,257	\$1,257
2. Concrete Floor	ψ12,004		ψ1,207
Area of Concrete Floor (ft2)	25,600	480	480
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft2)	\$5.27	\$5.27	\$5.27
Subtotal Concrete Floor Demolition Costs	\$134,838	\$2,528	\$2,528
3. Concrete Footing	·····	\$2,020	
Length of Concrete Footing (ft)	960	88	88
Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/lin. ft)	\$19.25	\$19.25	\$19.25
Subtotal Concrete Footing Demolition Costs	\$18,484	\$1,694	\$1,694
Subtotal Demolition Costs per Building	\$166,176	\$5,479	\$5,479
Total Demolition Costs			\$177,134
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C. Disposal Costs			
1. Building	4 000		170
Volume of Building (cy) Building Construction and Demolition	1,222	178	178
a. LandfillAssume:		•	
Cost to haul to landfill			
Total Trips @12(cy) each	102	15	15
Dump Truck (Guideline 12 App. J \$/hr)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$46,011	\$6,693	\$6,693
Disposal Unit Cost (\$/ton)(Guideline No. 12 App. K)	\$79.54	\$79.54	\$79.54
Percentage (%)	100	100	100
Converted C&D waste volume to tons (.24 tons/cy) ¹ .	293	43	43
Subtotal Disposal Costs	\$69,343	\$10,086	\$10,086
b. 11e.(2) Byproduct Materials			
Percentage (%)	0	0	C
Volume for Disposal (ft3)	0	0	0
Volume for Disposal Assuming 10% Void Space (ft3)	0	0	0
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34	\$7.34	\$7.34
Subtotal 11e.(2) Byproduct Materials	\$0	\$0	\$0

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW 2 Bldg
Subtotal Building Disposal Costs	\$69,343	\$10,086	\$10,086
2. Concrete Floor			
Area of Concrete Floor (ft2)	25600	480	480
Average Thickness of Concrete Floor (ft)	0.833		
	39490.37037		0.833
Volume of Concrete Floor (ft3)(with .54 void factor)			74(
Volume of Concrete Floor (cy)	1463	27	27
a. Municipal Landfill			
Percentage (%)	75		75
Volume for Disposal (cy)	1097	21	21
Tons of Concrete	1,193	. 22	22
Cost to load Dump Trucks			
Loader (Guideline 12 App. J), CAT 980G Front-end Loader	\$112.73	\$112.73	\$112.73
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load	\$ 9.39	\$ 9.39	\$ 9.39
Load Cost	\$10,305	\$193	\$193
Cost to haul to landfill			
Total Trips @12(cy) each	91	2	2
Dump Truck (Guideline 12 App. J)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$41,296	\$774	\$774
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/ton)	\$79.54	\$79.54	\$79.54
Subtotal Landfill Disposal Costs	\$146,531	\$2,747	\$2,747
b. 11e.(2) Byproduct Materials			
Assume:			
Additional \$2.00/ft3 for segregation of concrete			
Percentage (%)	25	25	25
Volume for Disposal (ft3)	9873	185	185
Segregation and Loading Unit Cost (\$/ft3)	\$5.00	\$5.00	\$5.00
Transportation and Disposal Unit Cost (\$/ft3)	\$7.51	\$7.51	\$7.51
Subtotal 11e.(2) Byproduct Materials		\$2,317	\$2,317
Subtotal Concrete Floor Disposal Costs		\$5,064	\$5,064
3. Concrete Footing			·····
Length of Concrete Footing (ft)	960	88	88
Average Depth of Concrete Footing (ft)	4	4	4
Average Width of Concrete Footing (ft)	0.75		0.75
Volume of Concrete Footing (ft3) (with 0.54 void factor)	5333		489
Volume of Concrete Footing (cy)	198	18	18
Tons of Concrete	215	20	20
Cost to load Dump Trucks	210	20	20
Loader (Guideline 12 App. J), 5cy bucket	\$112.73	\$112.73	\$112.73
Cost per cy, assume 1.5min dump time+58.5min standby for 12cy load			
Load Cost	\$ 9.39		\$ 9.39 \$170
Cost to haul to landfill	\$1,856	\$170	\$170
Total Trips @12(cy) each	16	2	2
Dump Truck (Guideline 12 App. J)	\$75.29	\$75.29	\$75.29
Transportation(assume 2 trips per 12hr. Day)	\$7,436	\$682	\$682
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/ton)	\$79.54	\$79.54	\$79.54
Subtotal Concrete Footing Disposal Costs		\$1,567	\$1,567
	\$356,522	\$16,717	\$16,717
Subtotal Disposal Costs per Building	· · · · · · · · · · · · · · · · · · ·		
Subtotal Disposal Costs per Building Total Disposal Costs			\$389,957

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

PART II: BUILDING DEMOLITION & DISPOSAL	Satellite Bldg	DDW 1 Bldg	DDW 2 Bldg
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS			\$577,322

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	Mine Unit No.1	Mine Unit No.2
A. Mine Unit Piping		•
Assume:		
Number of Header Houses	9	5
Approximate Length of Piping per Header House (ft)	13,800	13,800
(avg. 46 wells per with 300 ft pipeline/well)		
Approximate Total Length of Piping (ft.)	124,200	69,000
1. Removal and Loading		
Trench Length -	31,050	17,250
(usually run multiple pipes in trench assume 1/4 pipe length)	·	
Wellfield Piping Removal Unit Cost (\$/ft of pipe)	\$2.30	\$2.30
Subtotal Wellfield Piping Removal and Loading Costs	\$285,660	\$158,700
2. Shredding Costs		
Assume:		
Length of Piping per Header House (ft)	13,800	13,800
Total Length of Piping (ft)	124200	69000
Average Diameter of Piping (inches)	2	2
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.05
Subtotal Shredding Costs	\$14,159	\$7,866
3. Transport and Disposal Costs (NRC-Licensed Facility)	· · · · · · · · · · · · · · · · · · ·	
Chipped Volume Reduction (ft3/ft)	0.005	0.005
Chipped Volume per Wellfield (ft3)	621	345
Volume for Disposal Assuming 10% Void Space (ft3)	683	380
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34	\$7.34
	\$5,011	\$2,788
Total Wellfield Piping Removal and Disposal Costs	\$304,830	\$169,354
B. Well Pumps and Tubing		
· · · · · · · · · · · · · · · · · · ·		
Δεειμαο		
Assume: Average tubing length/wellfield based on average well depth minus 25 ft		
Average tubing length/wellfield based on average well depth minus 25 ft		
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs		
Average tubing length/wellfield based on average well depth minus 25 ft <i>1. Shredding Costs</i> Number of Production Wells with Tubing	140	
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing	300	300
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft)	300 650	300
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches)	300 650 2	14(30(65(12)
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches)	300 650 2 1.25	300 650 2 1.25
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	300 650 2 1.25 \$0.057	300 650 2 1.25 \$0.057
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs	300 650 2 1.25	300
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal	300 650 2 1.25 \$0.057	300 650 1.25 \$0.05
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume	300 650 2 1.25 \$0.057 \$24,268	300 650 1.2 \$0.05 \$24,268
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps	300 650 2 1.25 \$0.057	300 650 2 1.25 \$0.057
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3)	300 650 2 1.25 \$0.057 \$24,268 140 1	300 650 1.25 \$0.057 \$24,268 140
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3)	300 650 2 1.25 \$0.057 \$24,268	300 650 1.25 \$0.057 \$24,268 140
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume	300 650 2 1.25 \$0.057 \$24,268 140 1	300 650 1.25 \$0.057 \$24,268 14(
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume Tubing Length per Wellfield (ft)	300 650 2 1.25 \$0.057 \$24,268 140 1 140 286,000	300 650 1.25 \$0.05 \$24,268 140 140 286,000
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume Tubing Length per Wellfield (ft) Chipped Volume Reduction (ft3/ft)	300 650 2 1.25 \$0.057 \$24,268 140 1 140 286,000 0.007	300 650 2 \$0.057 \$24,268 140 286,000 0.007
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume Tubing Length per Wellfield (ft1) Chipped Volume per Wellfield (ft3)	300 650 2 1.25 \$0.057 \$24,268 140 1 140 286,000 0.007 2,002	300 650 2 \$0.057 \$24,268 140 286,000 0.007 2,002
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume Tubing Length per Wellfield (ft3) Chipped Volume Reduction (ft3/ft) Chipped Volume per Wellfield (ft3)	300 650 2 1.25 \$0.057 \$24,268 140 1 140 286,000 0.007 2,002 2,142	300 650 2 \$0.057 \$24,268 140 286,000 0.007 2,002 2,142
Average tubing length/wellfield based on average well depth minus 25 ft 1. Shredding Costs Number of Production Wells with Tubing Number of Injection Wells with Tubing Average Tubing Length per Well (ft) Diameter of Production Well Fiberglass Tubing (inches) Diameter of Injection Well HDPE Tubing (inches) HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft) Subtotal Shredding Costs 2. Pump and Tubing Transportation and Disposal a. Pump Volume Number of Production Wells with Pumps Average Pump Volume (ft3) Pump Volume per Wellfield (ft3) b. Tubing Volume Tubing Length per Wellfield (ft) Chipped Volume Reduction (ft3/ft) Chipped Volume per Wellfield (ft3)	300 650 2 1.25 \$0.057 \$24,268 140 1 140 286,000 0.007 2,002	300 651 \$0.05 \$24,268 144 286,000 0.007 2,002

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2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	Mine Unit No.1	Mine Unit No.2
Subtotal Pump and Tubing Transport and Disposal Costs	\$17,286	\$17,286
Total Well Pumps and Tubing Removal and Disposal Costs	\$41,554	\$41,554
Total Went Fullips and Fubling Kentoval and Disposal Costs		41,004
C. Buried Trunkline		0
Assume:		
Length of Trunkline Trench (ft)	7500	750
1. Removal and Loading	7000	100
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$2.30	\$2.30
Subtotal Trunkline Removal and Loading Costs	\$17,250	\$17,250
	ψ17,250	ψ17,200
2. Shredding Costs		
Diameter of HDPE Piping (in)	2	7.50
Total Length of 2" HDPE Piping (ft)	7,500	7,50
Diameter of HDPE Piping (in)	3	7.50
Total Length of 3" HDPE Piping (ft)	7,500	7,50
Diameter of HDPE Piping (in) Total Length of 4" HDPE Piping (ft)	4	
Diameter of HDPE Piping (in)	6	
Total Length of 6" HDPE Piping (ft)	4,000	4,00
Diameter of HDPE Piping (in)	4,000	4,00
Total Length of 8" HDPE Piping (ft)	18,400	18,40
Diameter of HDPE Piping (in)	10,400	10,40
Total Length of 10" HDPE Piping (ft)	0	
Diameter of HDPE Piping (in)	12	1
Total Length of 12" HDPE Piping (ft)	0	•
Diameter of HDPE Piping (in)	14	1
Total Length of 14" HDPE Piping (ft)	0	
Diameter of HDPE Piping (in)	16	1
Total Length of 16" HDPE Piping (ft)	0	
Diameter of HDPE Piping (in)	18	1
Total Length of 18" HDPE Piping (ft)	0	
Diameter of HDPE Piping (in)	20	2
Total Length of 20" HDPE Piping (ft)	15,000	15,00
Diameter of HDPE Piping (in)	24	2
Total Length of 24" HDPE Piping (ft)	0	
HDPE Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.057	\$0.057
Subtotal Shredding Costs	\$28,996	\$28,996
3. Transport and Disposal Costs		
a. 2" HDPE Trunkline	· .	
Piping Length (ft)	7,500	7,50
Chipped Volume Reduction (ft3/ft)	0.01	0.0
Chipped Volume (ft3)	80.41	80.4
b 3" HDPE Trunkline		
Piping Length (ft)	7500	750
Chipped Volume Reduction (ft3/ft)	0.02	0.0
Chipped Volume (ft3)	174.64	174.6
c 4" HDPE Trunkline		
Piping Length (ft)	0	
Chipped Volume Reduction (ft3/ft)	0.04	0.0
Chipped Volume (ft3)	0.00	0.0
d 6" HDPE Trunkline		
Piping Length (ft)	4000	400

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

	· · · · · · · · · · · · · · · · · · ·	Mine Unit	Mine Unit
PART III: WE	LLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	No.1	No.2
	Chipped Volume Reduction (ft3/ft)	0.08	0.08
	Chipped Volume (ft3)	333.57	333.57
е	8" HDPE Trunkline		
	Piping Length (ft)	18400	18400
-	Chipped Volume Reduction (ft3/ft)	0.14	0.14
	Chipped Volume (ft3)	2599.96	2599.96
f	10" HDPE Trunkline		2000.00
•	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.22	0.22
	Chipped Volume (ft3)	0.00	0.00
g	12" HDPE Trunkline	0.00	0.00
9	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.31	0.31
	Chipped Volume (ft3)	0.00	0.00
h	14" HDPE Trunkline	0.00	0.00
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.37	0.37
	Chipped Volume (ft3)	0.00	
i	16" HDPE Trunkline	0.00	0.00
1			
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.49	0.49
······································	Chipped Volume (ft3)	0.00	0.00
J	18" HDPE Trunkline		
	Piping Length (ft)	0	0
·	Chipped Volume Reduction (ft3/ft)	0.62	0.62
	Chipped Volume (ft3)	0.00	0.00
k	20" HDPE Trunkline		
	Piping Length (ft)	15,000	15,000
	Chipped Volume Reduction (ft3/ft)	0.72	0.72
	Chipped Volume (ft3)	10817.18	10817.18
I	24" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	1.04	1.04
	Chipped Volume (ft3)	0.00	0.00
	Chipped Volume (ft3)		
	bosal Assuming 10% Void Space (ft3)	14005.76	14005.76
Transportation a	and Disposal Unit Cost (\$/ft3)	15406	15406
		\$7.34	\$7.34
	Subtotal Trunkline Transport and Disposal Costs	\$113,034	\$113,034
· ·	Total Trunkline Removal and Disposal Costs	\$159,280	\$159,280
	,		
D. Well Cove	ers		
Total Quantity		440	440
	Cover Volume (ft3)	1.86	1.86
1. Removal			
Total Volume (f	+2)	010	040
	Cost per WDEQ Guideline No.12, App.K (\$/ft3)	818	818 \$0.262
	Cost per WDEQ Guideline No.12, App.K (\$/π3) Subtotal Well Cover Demolition Costs	\$0.262	\$0.262
0. Cum ini i		\$214	\$214
· · · ·	d Decontamination		
Assume:		·····	· · · · · ·
Cost per Well C	over	\$7	\$7

vers: 7/20/11 REVISION

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

WDEQ Permit No. 632 Annual Report / NRC SUA-1548

North Butte ISR Project - WDEQ Permit No. 632 Update

	Mine Unit	Mine Unit
PART III: WELLFIELD BLDGS., EQUIPMENT REMOVAL & DISPOSAL	No.1	No.2
Subtotal Survey and Decontamination Costs	\$2,886	\$2,886
3. Disposal		
Total Volume (cy)	30	30
Cost to haul to landfill		
Total Trips @12(cy) each	3	3
Dump Truck (Guideline 12 App. J)	\$116.22	\$116.22
Transportation(assume 2 trips per 12hr. Day)	\$1,761	\$1,761
Disposal Unit Cost (\$/ton)(Guideline No. 12 App. K)	\$79.54	\$79.54
Percentage (%)	100	100
Converted C&D waste volume to tons (.24 tons/cy) ^{1.}	2	2
Subtotal Disposal Costs	\$2,888	\$2,888
Total Well Cover Removal and Disposal Costs	\$5,988	\$5,988
E. Header Houses		
	9	
Total Quantity Average Header House Volume (ft3)	9 800	800
1. Removal	000	000
	7000	4000
Total Volume (ft3) Demolition Unit Cost per WDEQ Guideline No.12, App.K (\$/ft3)	7200 \$0.262	4000
Subtotal Building Demolition Costs	\$1,886	\$1,048
2. Survey and Decontamination		
Assume:		
Cost per Header House	\$568	\$568
Subtotal Survey and Decontamination Costs	\$5,112	\$2,840
3. Disposal		
Total Volume (cy)	267	148
Volume for Disposal Assuming 10% Void Space (cy)	293	163
Disposal Unit Cost per WDEQ Guideline No.12, App.K (\$/cy)	\$8.87	\$8.87
Subtotal Off-Site Disposal Costs	\$2,598	\$1,445
Total Header House Removal + Disposal Costs	\$9,596	\$5,333
SUBTOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS	\$521,248	\$381,509
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL + DISPOSAL COSTS		\$902,757

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

PART IV: WELL & BOREHOLE ABANDONMENT	Mine Unit No.1	Mine Unit No.2
A. Well Abandonment (Wellfields)		
# of Production Wells	1	40 140
Cost to plug and abandon Production wells (\$/LF)	\$ 6.2	8 \$ 6.28
# of Injection Wells		00 300
Cost to plug and abandon Injection wells (\$/LF)	\$ 4.0	
# of Monitoring Wells		80 80
Cost to plug and abandon Monitoring wells (\$/LF)	\$ 4.0	
#of Restoration Wells	· · · · · · · · · · · · · · · · · · ·	0 0
Cost to plug and abandon Restoration wells (\$/LF)	\$ 6.2	8 \$ 6.28
# water supply wells		1 1
Cost to plug and abandon Water Supply wells (\$/LF)	\$ 6.2	8 \$ 6.28
Total Number of Wells		21 521
Average Diameter of Casing (inches)		5 5
Average Depth (ft)	6	50 650
	\$1,563,56	2 \$1,563,562
Subtotal Abandonment Cost - Wellfields		\$3,127,124
B. Removal of Contaminated Soil Around Wells		
# of Production and Injection Wells		40 440
Cost per well (\$/well)	\$162.	
	\$71,34	
Subtotal Removal of Soil Around Wells	·-·	\$142,692
C. Delineation Hole Abandonment		
# of Projected Holes	5	00 500
Average Depth (ft)		650
Hole Abandonment Unit Cost (\$/ft of hole)		\$6.28
Site Reclamation (\$/site)	\$66.	37 \$66.37
	\$33,18	\$2,074,183
Subtotal Hole Abandonment per Wellfield		\$2,107,365
D. Masta Diseased Initiation Mall Alternations		
D. Waste Disposal Injection Well Abandonment	DDW 1	DDW 2
1. Well Sealing		
Assume: TD = 8559' FedBY2 TD = 8570' FedBY1,		· ·
Sealing cost per foot (in UIC permit)	\$11.	
Subtotal Plugging Costs per Well (in UIC permit)	\$102,0	69 \$102,069
2. Pump Dismantling and Decontamination		
Number of Persons		2 2
Number of Pumps		2 2
Pumps/Day	(0.5 0.5
Number of Days		4 4
\$/Day/Person	\$2	
Subtotal Dismantling and Decon Costs per Well	\$1,788.	80 \$1,788.80
3. Tubing String Disposal (NRC-Licensed Facility)		
Length of Tubing String (ft)	8,5	
Diameter of Tubing String (inches)	2.8	75 2.875
	3	86 386
Volume of Tubing String (ft ³)		34 \$7.34
Volume of Tubing String (ft ³) Transportation and Disposal Unit Cost (\$/ft ³)	\$7.	
Volume of Tubing String (ft ³)	\$7. \$2,8	33 \$2,833

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE

PART IV: WELL & BOREHOLE ABANDONMENT	Mine Unit No.1	Mine Unit No.2
TOTAL WELL ABANDONMENT COSTS		\$5,590,562

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

Assume: Disking/Seeding Unit Cost Based on Actual Contractor Costs 23.53 Pattern Area Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Pattern Area Reclamation Costs per Wellfield \$14,257 Total Wellfield Pattern Area Reclamation Costs \$14,257 B. Wellfield Road Reclamation \$14,257 B. Wellfield Road Reclamation Costs per Wellfield \$16,100 C. Header House Surface Reclamation \$16,100 Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) \$1000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$11,195.44 Subtotal Removed (cy) \$261 Application Nith Scraper \$200 Volume of Topsoil Removed (cy) \$215 Application Nith Scraper \$30034 Subtotal Topsoil Application Costs \$326 </th <th>PART V: MISCELLANEOUS SURFACE RECLAMATION</th> <th></th>	PART V: MISCELLANEOUS SURFACE RECLAMATION	
Disking/Seeding Unit Cost Based on Actual Contractor Costs Pattern Area (acres) Wellfield Pattern Area Disking/Seeding Unit Cost (\$/acre) Subtotal Pattern Area Reclamation Costs per Wellfield \$14,257 Total Wellfield Pattern Area Reclamation Costs B. Wellfield Road Reclamation Length of Wellfield Roads (1000 ft) Subtotal Road Reclamation Costs per Wellfield Subtotal Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs per Wellfield \$16,100 C. Header Houses Surface Reclamation Assume: Number of Header Houses (ft2) Total Wellfield Road Reclamation Costs Subtotal Poad Reclamation Area of Disturbance (acres) 0.0.33 Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) 1. Ripping Unit Cost per WDEQ Guideline No.12, App.11 (\$/acre) Subtotal Removed (cy) Application unit Cost (\$/acre) Subtotal Disking/Seeding Disking/A Seeding Disking/Seeding Unit Cost (\$/acre) Subtotal Disking/Seeding Costs 3. Disking and Seeding Disking/Seeding Unit Cost (\$/acre) Subtotal Disking/Seeding Costs Subtotal Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 Disking/Seeding Unit Cost (\$/acre) Currea Reclamation 1. Topsoil Application 2. Subtotal Disking/Seeding Costs 3. Subtotal Teader House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS 3. Subtotal Teader House Reclamation 1. Topsoil Application 1. Topsoil Application 2. Cost 3. Disking/Seeding Unit Cost per WDEQ 3. Disking/Seeding Unit Cost per WDEQ 3. Disking/Seeding 3. Disking/Seeding 3. Disking/Seeding 3. Disking Area (acres) 3. Disking/Seeding 3. Disking/See	A. Wellfield Pattern Area Reclamation	
Pattern Area (acres) 23.5 Wellfield Pattern Area Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Pattern Area Reclamation Costs per Wellfield \$14,257 B. Wellfield Road Reclamation Length of Wellfield Road Reclamation \$14,257 B. Wellfield Road Reclamation Length of Wellfield Road Reclamation Unit Cost (\$/1000 ft) \$805 Subtotal Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs \$16,100 C. Header Houses Surface Reclamation \$16,100 Assume: Number of Header Houses (ft2) 1000 Number of Header Houses (ft2) 1000 1000 Area of Disturbance (acres) 0.33 0.33 Average Depth of Stripped Topsoil (ft) 2 2 Surface Grade: Level Ground 1000 1 Average Length of Topsoil Haul (ft) 1000 1 1. Ripping Overburden with Dozer \$11,195,44 \$382 2. Topsoil Application with Scraper \$300 \$332 Volume of Topsoil Removed (cy) 256 \$382 3. Disking and Seeding \$12.5 \$12.5 Subtotal Tops		
Wellfield Pattern Area Disking/Seeding Unit Cost (\$/acre) \$60 Subtotal Pattern Area Reclamation Costs per Wellfield \$14,257 Total Wellfield Pattern Area Reclamation Costs \$14,257 B. Wellfield Road Reclamation 21 Length of Wellfield Roads (1000 ft) \$805 Subtotal Road Reclamation Unit Cost (\$/1000 ft) \$805 Subtotal Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs \$16,100 C. Header House Surface Reclamation \$14,257 Number of Header Houses 14 Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.33 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$1,195.44 Subtotal Ripping Costs \$3382 2. Topsoil Application with Scraper \$200 Volume of Topsoil Removed (cy) \$21,253 Subtotal Topsoil Application Costs \$324 3. Disking and Seeding \$200 Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Topsoil Application Costs \$319 Subtotal Topsoil Application Costs \$319		
Subiotal Pattern Area Reclamation Costs per Wellfield \$14,25 Total Wellfield Pattern Area Reclamation Costs \$14,257 B. Wellfield Road Reclamation \$14,257 B. Wellfield Road Reclamation Unit Cost (\$/1000 ft) \$8005 Subtotal Road Reclamation Costs per Wellfield \$16,100 C. Header House Surface Reclamation \$16,100 Assume: 14 Number of Header House (ft2) 1000 Total Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) 3000 Surface Grade: Level Ground Average Length of Topsoil Haul (ft) 1. Ripping Overburden with Dozer \$11,195.4 Subtotal Topsoil Removed (cy) 253 Application with Scraper \$125 Volume of Topsoil Application costs \$322 3. Disking/and Seeding \$2000 Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Topsoil Application \$30,934 Subtotal Topsoil Application Costs \$319 Subtotal Topsoil Application \$2000 Subtotal Topsoil Application \$2000 Subtotal Topsoil		23.53
Total Wellfield Pattern Area Reclamation Costs \$14,257 B. Wellfield Road Reclamation 2/2 Length of Wellfield Road Reclamation Unit Cost (\$/1000 ft) \$805 Subtotal Road Reclamation Unit Cost (\$/1000 ft) \$805 Subtotal Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs \$16,100 C. Header House Surface Reclamation \$16,100 Assume: 1/4 Number of Header Houses 1/4 Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.32 Average Depth of Stripped Topsoil (ft) 000 Surface Grade: Level Ground 4 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$11,195.4 Subtotal Ripping Costs \$338 2. Topsoil Application with Scraper 20 Volume of Topsoil Removed (cy) \$253 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$122 Subtotal Header House Reclamation Costs per Wellfield \$577 Meader House Reclamation Costs per Wellfield \$577 <		\$606
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Length of Weltfield Roads (1000 ft) 24 Weltfield Road Reclamation Unit Cost (\$/1000 ft) \$8005 Subtotal Road Reclamation Costs per Weltfield \$16,100 Total Weltfield Road Reclamation Costs \$16,100 C. Header House Surface Reclamation \$16,100 Assume: Number of Header Houses 14 Area of Disturbance per Header House (ft2) 1000 1000 Total Area of Disturbance (acres) 0.33 34 Average Depth of Stripped Topsoil (ft) 50 32 Surface Grade: Level Ground 44 44 44 Average Length of Topsoil Haul (ft) 1000 1000 1. Ripping Overburden with Dozer \$1,195.44 \$1,195.44 Subtotal Ripping Costs \$338 \$2 2. Topsoil Application with Scraper \$2000 \$254 Yolume of Topsoil Removed (cy) 255 \$325 Subtotal Topsoil Application Costs \$322 \$325 3. Disking and Seeding \$577 \$600 Subtotal Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 Assume: \$2000	B. Wellfield Road Reclamation	
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Subtotal Road Reclamation Costs per Wellfield \$16,100 Total Wellfield Road Reclamation Costs \$16,100 C. Header House Surface Reclamation \$16,100 Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) 0.03 Surface Grade: Level Ground 1000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$1,195,44 Ripping Unit Cost per WDEQ Guideline No.12, App.11 (\$/acre) \$1,195,44 Subtotal Ripping Costs \$386 2. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1,21 Subtotal Topsoil Application Costs \$329 3. Disking and Seeding \$200 Subtotal Header House Reclamation Costs per Wellfield \$577 Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 Subtotal Header House Reclamation \$2000 Sufface Area (acres) \$21,27 Yorage Depth of Topsoil (ft) \$200 Sufface grade: Level ground		
Total Wellfield Road Reclamation Costs \$16,100 C. Header House Surface Reclamation Assume: Number of Header Houses 14 Area of Disturbance per Header House (ft2) 1000 1000 1000 Total Area of Disturbance per Header House (ft2) 1000 1000 1000 Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) 0000 0.33 Surface Grade: Level Ground Average Length of Topsoil Haul (ft) 10000 1.195.44 Surface Topsoil Application with Dozer Subtotal Ripping Costs \$386 2. Topsoil Application with Scraper Volume of Topsoil Removed (cy) 256 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Topsoil Application Costs \$329 3. Disking and Seeding \$		
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Area of Disturbance per Header House (ft2) 1000 Total Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) 0.34 Surface Grade: Level Ground 0.000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$1,195.44 Ripping Unit Cost per WDEQ Guideline No.12, App.11 (\$/acre) \$1,195.44 Subtotal Ripping Costs \$386 2. Topsoil Application with Scraper 256 Volume of Topsoil Removed (cy) 256 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Topsoil Application Costs \$325 3. Disking and Seeding \$30 Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Disking/Seeding Costs \$199 Subtotal Header House Reclamation Costs per Wellfield \$577 Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 Average haul distance (ft) 2000 Surface grade: Level ground 21 Topsoil Application 21 Average haul distance (ft) 0.5 Volume of Topsoil (cy)	Number of Header Houses	14
Total Area of Disturbance (acres) 0.33 Average Depth of Stripped Topsoil (ft) 0.33 Surface Grade: Level Ground 1000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$1,195.44 Ripping Unit Cost per WDEQ Guideline No.12, App.11 (\$/acre) \$1,195.44 Subtotal Ripping Costs \$383 2. Topsoil Application with Scraper 256 Volume of Topsoil Removed (cy) 255 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Topsoil Application Costs \$329 3. Disking and Seeding \$329 Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Header House Reclamation Costs per Wellfield \$577 Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 Average haul distance (ft) 2000 Surface grade: Level ground 21 Topsoil Surface Area (acres) 21 Volume of Topsoil (ty) 16940 Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Header House Reclamation 21 Averag	Area of Disturbance per Header House (ft2)	1000
Average Depth of Stripped Topsoil (ft) Image: Stripped Topsoil (ft) Surface Grade: Level Ground Image: Stripped Topsoil Haul (ft) 1000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer Subtotal Ripping Costs \$383 2. Topsoil Application with Scraper Volume of Topsoil Removed (cy) 256 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Topsoil Application Costs \$325 3. Disking and Seeding \$600 Disking/Seeding Unit Cost (\$/acre) \$600 Subtotal Disking/Seeding Costs \$199 Subtotal Header House Reclamation Costs per Wellfield \$577 Header House Reclamation Costs per Wellfield \$577 TOTAL WELLFIELD SURFACE RECLAMATION COSTS \$30,934 D. Satellite Plant Area Reclamation Reclamation 1. Topsoil Application Assume: Average haul distance (ft) 2000 Surface grade: Level ground 21 Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Volume of Topsoil (ft) 0.5 Volume of Topsoil (cy) 16940 Topsoil Unit Cost per WDEQ Guideline No.12, App.C (0.32
Surface Grade: Level Ground 1000 Average Length of Topsoil Haul (ft) 1000 1. Ripping Overburden with Dozer \$1,195.44 Subtotal Ripping Costs \$383 2. Topsoil Application with Scraper 250 Volume of Topsoil Removed (cy) 251 Application Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Subtotal Topsoil Application Costs \$320 3. Disking and Seeding \$3000000000000000000000000000000000000		
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TOTAL WELLFIELD SURFACE RECLAMATION COSTS\$30,934Satellite Plant Area ReclamationSatellite Area Reclamation1. Topsoil Application Assume: Average haul distance (ft)2000Surface grade: Level ground Topsoil Surface Area (acres)210Average Depth of Topsoil (ft)0.5Volume of Topsoil (cy)16940Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)\$1.27Total Topsoil Application Cost\$21,5822. Disking/Seeding5	Subtotal Header House Reclamation Costs per Wellfield	\$577
D. Satellite Plant Area Reclamation Satellite Area 1. Topsoil Application Reclamation Assume: Average haul distance (ft) 2000 Surface grade: Level ground 2000 Topsoil Surface Area (acres) 21 Average Depth of Topsoil (ft) 0.5 Volume of Topsoil (cy) 16940 Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Total Topsoil Application Cost \$21,582 2. Disking/Seeding 5 Surface Area (acres) 5		
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D. Satellite Plant Area Reclamation Reclamation 1. Topsoil Application Assume: Assume: 2000 Average haul distance (ft) 2000 Surface grade: Level ground 21 Topsoil Surface Area (acres) 21 Average Depth of Topsoil (ft) 0.5 Volume of Topsoil (cy) 16940 Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy) \$1.27 Total Topsoil Application Cost \$21,582 2. Disking/Seeding 5 Surface Area (acres) 5		Satellite Area
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2. Disking/Seeding 5 Surface Area (acres) 5		
Surface Area (acres) 5	2. Disking/Seeding	
		5
	Disking/Seeding Unit Cost (\$/acre)	

vers: 7/20/11 REVISION

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

PART V: MISCELLANEOUS SURFACE RECLAMATION	
Total Disking/Seeding Costs	\$3,030
Satellite Plant/Office Area Reclamation	\$24,612
· · · · · · · · · · · · · · · · · · ·	
E. Access Road Reclamation	Main Access Road
Assume	11040
Surface grade: Level ground	
Length of road (miles)	6
Average road width (ft)	25
1. Gravel Road Base Removal	Z
Assume	
Average haul distance (ft)	1000
Gravel Road Base Width (ft)	25
Average Road Base Depth (ft)	0.5
Volume of Road Base (cy)	14667
Removal Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Gravel Road Base Removal Costs	\$18,685
2. Ripping Overburden with Dozer	
Overburden Surface Area (acres)	18
Ripping Unit Cost per WDEQ Guideline No.12, App.I1 (\$/acre)	\$1,195.44
Subtotal Ripping Overburden Costs	\$21,518
3. Topsoil Application	
Assume	
Average haul distance (ft)	1000
Topsoil Surface Area (ft2)	792000
Depth of Topsoil (ft)	0.5
Volume of Topsoil (cy)	14667
Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Topsoil Application Costs	\$18,685
4. Disking/Seeding	
Surface Area (acres)	18
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	
Total Access Road Reclamation Costs	\$69,796
	Ponds 1
F. Surge Pond Reclamation	and 2
Assume:	
Total Pond Surface Acres	2.5
Average Thickness of Liner and Sludge (in)	
Average Thickness of Contaminated Soil (in)	
Volume of Byproduct Material (ft3)	81675
Backhoe Operation Unit Cost	
1. Liner & Sludge Removal and Loading	
a. Equipment	
Number of Backhoes	1
ft3/hr	300
	272
Number of Hours	
Number of Hours \$/hr/Backhoe	
Number of Hours \$/hr/Backhoe Equipment Costs	\$149.14 \$40,566

2012-13 YEAR 1 MINING OPERATIONS RECLAMATION SURETY BOND ESTIMATE WDEQ Permit No. 632 Annual Report / NRC SUA-1548 North Butte ISR Project - WDEQ Permit No. 632 Update

PART V: MISCELLANEOUS SURFACE RECLAMATION	
Number of Persons	2
Number of Hours	272
\$/hr/Person(operator)	\$28
\$/hr/Person (laborer)	\$17
Labor Costs	\$12,289
Subtotal Liner & Sludge Removal and Loading Costs	\$52,855
2. Transportation and Disposal (NRC-Licensed Facility)	
Transportation and Disposal Unit Cost (\$/ft3)	\$7.51
Subtotal Transportation and Disposal Costs	\$613,773
3. Leak Detection Piping Removal and Loading	4013,773
Assume:	
Piping Removal Unit Cost same as for Well fields (\$/ft)	\$2.30
Length of Piping (ft)	400
a. Piping Removal and Loading Costs	
Total Length of Piping (ft)	400
Subtotal Piping Removal and Loading Costs	\$920
b. Shredding Costs	ψ320
Average Diameter of Piping (inches)	2
PVC Pipe Shredding Unit Cost (\$/diameter-in-ft)	\$0.028
Subtotal Pipe Shredding Costs	\$56
c. Transport and Disposal Costs (NRC-Licensed Facility)	
Chipped Volume Reduction (ft3/ft)	0.01
Chipped Volume (ft3)	
Volume for Disposal Assuming 10% Void Space (ft3)	4
Transportation and Disposal Unit Cost (\$/ft3)	\$7.34
Subtotal Piping Transport and Disposal Costs	\$29
Subtotal Leak Detection Piping Removal and Disposal Costs	\$1,005
4. Replacement of Excavated Soil	
Assume:	
Includes replacement of topsoil and subsoil	
Surface Grade: Level ground	•••
Average Haul Distance (ft)	1000
Surface Area (acres)	2.5
Average Depth of Excavated Soil (ft)	10.0
Volume of Topsoil (cy)	40333
Soil Replacement Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.27
Subtotal Soil Replacement Costs	\$51.384
5. Disking/Seeding	
Surface Area (acres)	2.5
Disking/Seeding Unit Cost (\$/acre)	\$606
Subtotal Disking/Seeding Costs	\$1,515
Total Evaporation Pond Reclamation Costs	\$720,532
TOTAL MISCELLANEOUS SURFACE RECLAMATION COSTS	\$845,874