

WHARF RESOURCES
 BOND RECALCULATION SUMMARY
 WHARF MINE

Earthmoving & Revegetation

Leach Pads and Process Ponds	
Reclaim Process Area	\$526,917
Offload 10 Million Tons Spent Ore from Leach Pads	\$8,988,678
Upper Ross Valley Spent Ore Depository	
Reclaim Upper Portion of Ross Valley Depository	\$423,637
Cap Rock for Regraded Upper Ross Valley Depository	\$274,351
Trojan/Green Mountain Pit	\$1,495,383
Denitrification Pads	
Reclaim Denitrification Pads	\$483,079
Cap Rock for Regraded Denitrification Pads	\$309,212
Reliance Waste Rock Facility	\$25,804
Low Grade Stockpile	\$20,853
Office/Crusher	\$79,511
Juno Pond	\$30,679
Building Demolition	\$517,518
Topsol Stockpiles	\$34,974
Minimum Impact (Reclaimed Areas)	\$17,280
Other Earthmoving	
Other Payroll	
Earthwork Superintendent	\$210,000
Demolition Superintendent	\$75,000
Mechanic	\$151,250
Security/Safety	\$100,800
Road Maintenance	\$254,500
Air Quality Monitoring	\$15,000
Sediment Basin Maintenance	\$9,600
Weed Control	\$50,000
Shipping lead wastes	\$1,600
Shop wash water disposal	\$3,200
Petroleum contaminated soil disposal	\$20,000
Boneyard Cleanup	\$2,000
Site Survey	\$200,000
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Subtotal Earthmoving	\$14,320,825
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Mobilization (5%)	\$716,041
Performance Bond (1%)	\$143,208
Contractor Overhead (8%)	\$1,145,666
State Excise Tax (2%)	\$286,416
Contractor Profit (10%)	\$1,432,082
Contingency (4 %)	\$572,833
Insp., Adm., & Maint. (10%)	\$1,432,082
Engineering & Consulting (5%)	\$716,041
Scope and Bid Contingency (5%)	\$716,041
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Total Earthmoving & Revegetation	\$21,481,235

Water treatment

Pad Neutralization & Water Treatment

Pad Draindown Pumping	\$19,382
Cyanide Destruction	\$193,820
Pad Denitrification Nutrient	\$15,000
Polo Denitrification	\$179,663
North Foley Denitrification	\$473,406
Electricity	\$208,773
Natural Gas	\$457,404

Total Pad Neutralization & Water Treatment \$1,547,448

Ross Valley Water Treatment Plant

Nutrient	\$275,000
Electricity	\$151,275
Natural Gas	\$190,585
Carbon Replacement	\$652,000
Plant Maintenance	\$50,000

RV Treatment Plant Total \$1,318,860

Process Area Ground Water Remediation

Pumping Costs	\$3,000
Nutrient	\$25,000
Monitoring	\$175,000
Analytical Testing	\$300,000

Total Process Area GW Remediation \$503,000

Plant Operators	\$525,000
Security/Safety	\$140,000
Gas & Diesel for Pickups & Misc. Equipment	\$18,000
Equipment & Vehicle Maintenance	\$33,750
Pickup Truck	\$25,000
Liner Repair	\$15,000
Water Sampling & Analysis	\$722,667
Biological Monitoring	\$75,000
Well Plugging	\$2,736
Pipeline from Ponderosa to Foley	\$24,848
Pipeline from Ross Valley to Ponderosa	\$5,900
HDH-12 Pipeline	\$10,000
Replacement Pumps	\$70,000

Subtotal Water Treatment \$5,037,209

Mobilization (1%)	\$50,372
Performance Bond (1%)	\$50,372
Contractor Overhead (8%)	\$402,977
State Excise Tax (2%)	\$100,744
Contractor Profit (10%)	\$503,721
Contingency (25%)	\$1,259,302
Insp., Adm., & Maint. (10%)	\$503,721
Engineering & Consulting (3%)	\$151,116
Scope and Bid Contingency (5%)	\$251,860

Total Water Treatment	\$8,311,394
Miscellaneous	
Gas & Diesel for Pickups & Misc. Equipment	\$18,000
Equipment & Vehicle Maintenance	\$33,750
Office Supplies	\$6,300
Insurance	\$90,000
Pickup Truck	\$25,000
Computers	\$7,500
Utilities	
Electricity	\$858,432
Garbage Disposal	\$12,600
Phone & Internet	\$24,600
Propane	\$22,500

Subtotal Utilities & Miscellaneous	\$1,098,682

Contingency (10%)	\$109,868
Insp., Adm., & Maint. (1%)	\$10,987

Total Utilities & Miscellaneous	\$1,219,537

Total Earthmoving, Water Treatment, Misc, & Utilities	\$31,012,166
Inflation Cost Adjustment @ 3% Per Year for 2 Years	\$1,860,730

Total Reclamation Bond	\$32,872,896
ROUND TO:	\$32,873,000

WHARF RESOURCES
2011 WHARF MINE EXPANSION BOND UPDATE
GENERAL INFORMATION & ASSUMPTIONS

General

1. These bond calculations cover the entire Wharf Mine area and Phase 1 of the expansion project, which includes a total of 650.44 acres that require reclamation. The acreage estimates in the calculation are conservative and account for actual slope areas which are greater than plan view areas. The bond does not include acreage at the Golden Reward Mine. The Golden Reward acreage will be included at the beginning of Phase 3 of the expansion project which involves disturbance at the Golden Reward Mine.
2. The calculations are based on the actual cost that would accrue to the state if it had to hire a third party contractor to conduct reclamation and maintain the site.
3. The calculations are based on the approved reclamation plan which is based on the postmining land uses of woodland grazing, home sites, and recreation and industrial or commercial development.
4. The recalculated bond is based on a 5-year closure period. Year 1 consists of holding costs, water treatment, heap neutralization, and some earthwork. Years 2, 3, and 4 consist of the main earthmoving activities, continued water treatment, and the completion of pad neutralization. Year 5 consist of care and maintenance and continued water treatment. Site activities after Year 5 are addressed in the postclosure bond.
5. Site holding costs have been added to the bond calculation. These are costs that the state would incur after site abandonment and before reclamation activities begin. It is assumed that six months to one year would pass before earthmoving activities would begin to account for the development of a detailed biddable closure plan, engineering, contract development, and bid letting.
6. This calculation is based on site conditions at the end of Phase 1 of the expansion project. At the beginning of Phase 2, the bond will be recalculated to reflect site conditions at the end of Phase 2. The bond will also be recalculated at the beginning of Phases 3 and 4 to reflect changes to the mine site at the end of each phase.
7. In the calculations, different indirect costs are applied separately to the direct earthmoving, water treatment, and miscellaneous costs instead of one indirect cost being applied to the sum of all three direct costs. Each indirect cost is explained further in the sections below.
8. An annual 3% inflationary costs for the two- year Phase 1 period was applied to the "Total Earthmoving, Water Treatment, and Utilities and Miscellaneous" cost.

Earthmoving and Revegetation

1. The Earthmoving Summary (Table 1) contains information on volumes of material to be moved and grading, topsoil application, and revegetation acreage.
2. Approximately 10 million tons of spent ore from the leach pads will be hauled to the Trojan and Deep Portland Pits for pit backfill. The remaining 1.5 million tons on the leach pads will be regraded in place and used as process pond backfill material.
3. The following equipment and equipment costs were used in the calculation:

Cat 16M grader	\$93.75/hr.
Cat D9T dozer	\$123.58/hr.
Cat 988 loader	\$130.68/hr.
50 ton truck	\$93.75/hr.

These rates were obtained from Caterpillar dealers and do not include fuel or operator costs. Operator costs are \$26.50/hr, including benefits. Fuel costs are accounted for separately.

4. The average density of spent ore is 125 lb/ft³, and the average density of topsoil is 100 lb/ft³. These densities were obtained from the SME Mining Engineering Handbook.
5. A two foot layer of cap rock from the Trojan Pit will be placed over the regraded slopes of the upper portion of the Ross Valley Spent Ore Depository and the Denitrification Pads to prevent erosion of the spent ore.
6. The topsoil haul distances were calculated by measuring the actual haul distances (not straight line distance) from the center of the topsoil or subsoil stockpile to the center of the regraded area. Fertilizer will be added to the topsoil.
7. The following indirect costs were added to the direct earthmoving and revegetation cost:

Mobilization	5%
Performance Bond	1%
Contractor Overhead	8%
State Excise Tax	2%
Contractor Profit	10%
Contingency	4%
Administration	10%
Engineering/Consulting	5%
Scope and Bid	<u>5%</u>
Total	50%

6. The following construction support personnel, including annual salaries and benefits, are accounted for in the calculation:

Earthwork Superintendent	\$84,000
Demolition Superintendent	\$30,000
Mechanic	\$60,500
Security/Safety Person	\$67,200

- The site safety person will develop the site safety plan, conduct safety training and annual safety refresher for site personnel, and provide site security. Costs for the safety person are allocated 50 percent to earthwork activities and 50 percent to water treatment.
7. Site manager, secretary, and project engineer costs are included in the 10 percent inspection, administration, and maintenance costs for the 5-year reclamation period.
8. All equipment will run at 80 percent efficiency. This is obtained from the Cat Handbook and other bond calculation references.
9. As the cash value of salvaged facilities may be claimed by creditors in order to satisfy any outstanding debts, no assumption was made that salvage value can be traded off with demolition cost. Therefore, a building demolition cost of \$517,518 is included. This cost has been updated for inflation.
10. \$500/acre was used for hydroseeding costs and \$400/acre was used for hydromulch. These costs were obtained from other bond calculations.
11. Minimum impact acres are areas reclaimed by Wharf that need minimal maintenance, such as grading and reseeding. It is assumed 2.00 minimum impact acres will need annual maintenance during the reclamation period.
12. A cost of \$254,500 was used for construction road watering, road maintenance, and snow removal during reclamation.
13. A cost of \$15,000 was used for air quality monitoring during the construction period.
14. It is assumed that the annual cost for the first three years of sediment basin maintenance is \$2,400. The annual cost decreases to \$1,200 in years 4 and 5 as vegetative cover becomes established.
15. It is assumed that the annual cost for weed control is \$10,000. This cost is based on actual costs at the Wharf Mine and other bond calculations.
16. In year 1, lead wastes from the assay lab will be removed from the site to a disposal facility at a cost of \$1,600.
17. Wash water from the shop building will be hauled to the Deadwood Water Treatment

Plant at an annual cost of \$800 during the four-year construction period.

18. Petroleum contaminated soil will be hauled from the site to the Belle Fourche land farm at an annual cost of \$5,000 during the four-year construction period.
19. A one-time cost of \$2,000 in year 1 covers cleanup of the mine site boneyard.
20. The main access road through the mine site will remain as mentioned in the approved reclamation plan.
21. A cost of \$200,000 is assumed to hire a contractor to survey the site. The surveyor will be used to develop engineering plans for construction and install survey stakes to mark slope reduction and other earthmoving areas. This cost was developed from the Means Site Work and Cost Data book.

Water Treatment

1. Heap neutralization (cyanide destruction) will be accomplished during the first year of the reclamation period. During the neutralization process, solutions from the pads will need to be run through the process area denitrification plant during the first three years of the reclamation period. Wharf's costs for pad drain down pumping, cyanide destruction, electricity, and natural gas were used in the calculation and are summarized in the Years 1-5 Bond Summary Table under "Pad Neutralization and Water Treatment".
2. Neutralized solutions from the process ponds will be discharged in accordance with Wharf's surface and ground water discharge permits.
3. Denitrification of spent ore on the North Foley Denitrification Pad will be accomplished during the first three years of the reclamation period, while denitrification of the Polo Denitrification Pad will be accomplished during the third year of the reclamation period. Wharf's costs for nutrients, chemicals, pumping, electricity, and natural gas were used in the calculation and are summarized in the Years 1-5 Bond Summary Table under "Pad Neutralization and Water Treatment".
4. The Ross Valley Water Treatment Plant will continue to treat water for nitrates, selenium, and cyanide through the five year reclamation period. Wharf's costs for nutrient, electricity, natural gas, and carbon column replacement were used in the calculation and are summarized in the Years 1-5 Bond Summary Table under "Ross Valley Water Treatment Plant". An annual cost of \$10,000 was also assumed for plant maintenance.
5. Process area ground water remediation will continue during the five-year reclamation period. Wharf's costs for nutrient, pumping, monitoring, and analysis were used in the calculation and are summarized in the Years 1-5 Bond Summary Table under "Process Area Ground Water Remediation".

6. Two water treatment operators will be required to operate the heap neutralization and water treatment facilities during the five-year reclamation period. The annual salary of each water treatment operator, including benefits, is \$52,500.
7. It is estimated that the annual cost of gas and diesel for the pickup and other equipment for the first three years is \$4,500. The annual cost decreases to \$3,000 in years 4 and \$1,500 in year 5 as site activity decrease.
8. It is estimated the annual cost for equipment and vehicle maintenance for the first three years is \$9,000. The annual cost decreases to \$4,500 in year 4 and \$2,250 in Year 5 as site activity decreases.
9. One pickup will be used by water treatment personnel at a cost of \$25,000.
10. An annual cost of \$5,000 was assumed to repair pond liners during the first three years of the reclamation period.
11. A total cost of \$722,667 was calculated to cover costs for water quality sampling and analysis for the 5-year reclamation period. The calculations can be found in the attached water quality sampling worksheets.
12. An annual cost of \$15,000 was assumed for biological monitoring that will be conducted through the reclamation period to assess impacts from the closure activities to streams in the area.
13. Well plugging costs for the Horseshoe and Railroad Monitoring Wells in year 5 were estimated \$2,736 as shown in the attached well plugging table. It is assumed these wells will not be needed in the postclosure period.
14. The state will need to install the following pipelines:
 - Pipeline from Ponderosa Pond to Foley Pit to transport neutralized process pond solution (cost \$24,848)
 - Pipeline from Ross Valley pump back area to Ponderosa Pond (cost \$5,900); and
 - Pipeline from Well HDH-12 to Ross Valley Denitrification Plant to treat nitrates from well pump back (cost \$10,000).
15. An annual pump replacement cost of \$20,000 for Years 1 and 2 is in the calculation. This annual cost decreases to \$10,000 in years 3, 4, and 5 since heap neutralization will be completed in year 2.
16. The following indirect costs were added to the direct water treatment cost:

Mobilization	1%
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Performance Bond	1%
Contractor Overhead	8%
State Excise Tax	2%
Contractor Profit	10%
Contingency	25%
Administration	10%
Engineering/Consulting	3%
Scope and Bid	<u>5%</u>
Total	65%

The 25% Contingency accounts for uncertainties in the current water treatment process.

Miscellaneous & Utilities

1. It is estimated that the annual cost of gas and diesel for the pickup and other equipment for the first three years is \$4,500. The annual cost decreases to \$3,000 in year 4 and \$1,500 in year 5 as site activity decreases.
2. It is estimated that annual equipment maintenance costs for the first three years is \$9,000. The annual cost decreases to \$4,500 in year 4 and \$2,250 in year 5 as site activity decreases.
3. Annual office supply costs are assumed to be \$2,400 in year 1, \$1,800 in year 2, \$1,200 in year 3, \$600 in year 4, and \$300 in year 5 as site activity decreases.
4. Annual insurance costs for the earthwork contractor are estimated to be \$30,000 for the first three years. These costs are not required in years 4 and 5 because earthwork activities are completed.
5. It is assumed that none of Wharf's vehicles will be available in the event the site is turned over to the state. Therefore, one pickup truck will be used by department and other personnel at the mine site at a capital cost of \$25,000.
6. A capital cost of \$7,500 is estimated in year 1 to purchase computers and printers for the mine site.
7. Annual electricity costs include electrical costs for general and construction activities during the reclamation period. Electrical costs decrease in years 3, 4, and 5 as construction activities are completed. Electrical costs for water treatment and heap neutralization processes are included under Water Treatment costs.
8. Annual garbage disposal costs are estimated at \$3,600 for years 1 through 3. The annual costs decrease to \$1,200 in year 4 and \$600 in year 5 as site activity decreases.
9. Annual costs for phone, Internet, and site radio are estimated at \$7,200 for years 1

through 3. The annual costs decrease to \$1,800 in year 4 and \$1,200 in year 5 as site activity decreases.

10. Annual propane costs to heat office buildings are estimated at \$6,000 for years 1 through 3. The annual costs decrease to \$3,000 in year 4 and \$1,500 in year 5 as site activity decreases. Propane cost for water treatment and heap neutralization processes are included under Water Treatment costs.
11. The following indirect costs were added to the direct miscellaneous and utility cost:

Contingency	10%
Administration	<u>1%</u>
Total	11%

Wharf Reclamation Costs - Years 1 through 5

Item	Year 1 Annual Cost	Year 2 Annual Cost	Year 3 Annual Cost	Year 4 Annual Cost	Year 5 Annual Cost	Total Year 1-5 Annual Cost
Earthmoving & Revegetation						
Leach Pads and Process Ponds						
Reclaim Process Area			\$526,917			\$526,917
Offload 10 Million Tons Spent Ore from Leach Pads			\$8,988,678			\$8,988,678
Upper Ross Valley Spent Ore Depository						
Reclaim Upper Portion of Ross Valley Depository	\$423,637					\$423,637
Cap Rock for Regraded Upper Ross Valley Depository	\$274,351					\$274,351
Trojan/Green Mountain Pit			\$747,691	\$747,692		\$1,495,383
Denitrification Pads						
Reclaim Denitrification Pads				\$483,079		\$483,079
Cap Rock for Regraded Denitrification Pads				\$309,212		\$309,212
Reliance Waste Rock Facility		\$25,804				\$25,804
Low Grade Stockpile	\$20,853					\$20,853
Office/Crusher		\$79,511				\$79,511
Juno Pond	\$30,679					\$30,679
Building Demolition				\$517,518		\$517,518
Topsol Stockpiles		\$17,487		\$17,487		\$34,974
Minimum Impact (Reclaimed Areas)	\$5,760		\$5,760		\$5,760	\$17,280
Other Earthmoving						
Other Payroll						
Earthwork Superintendent	\$42,000	\$84,000	\$84,000	\$0	\$0	\$210,000
Demolition Superintendent	\$15,000	\$30,000	\$30,000	\$0	\$0	\$75,000
Mechanic	\$30,250	\$60,500	\$60,500	\$0	\$0	\$151,250
Security/Safety Person (50%)	\$33,600	\$33,600	\$33,600	\$0	\$0	\$100,800
Road Maintenance	\$72,000	\$108,500	\$50,000	\$12,000	\$12,000	\$254,500
AQ Monitoring	\$6,000	\$6,000	\$3,000	\$0	\$0	\$15,000
Sediment Basin Maint.	\$2,400	\$2,400	\$2,400	\$1,200	\$1,200	\$9,600
Weed Control	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
Shipping lead wastes	\$1,600	\$0	\$0	\$0	\$0	\$1,600
Shop wash water disposal	\$800	\$800	\$800	\$800	\$0	\$3,200
Petro. contam. soil disposal	\$5,000	\$5,000	\$5,000	\$5,000	\$0	\$20,000
Boneyard Clean-up	\$2,000					\$2,000
Site Survey	\$50,000	\$100,000	\$50,000			\$200,000
Subtotal Earthmoving						\$14,320,825
Mobilization (5%)	\$716,041					\$716,041
Performance Bond (1%)	\$143,208					\$143,208
Contractor Overhead (8%)	\$286,416	\$286,417	\$286,417	\$286,416		\$1,145,666

State Excise Tax (2%)	\$71,604	\$71,604	\$71,604	\$71,604		\$286,416
Contractor Profit (10%)	\$358,020	\$358,021	\$358,021	\$358,020		\$1,432,082
Contingency (4%)	\$114,566	\$114,567	\$114,567	\$114,567	\$114,566	\$572,833
Insp., Admin., & Maint. (10%)	\$286,416	\$286,417	\$286,417	\$286,416	\$286,416	\$1,432,082
Engineering & Consulting (3%)	\$179,011	\$179,010	\$179,010	\$179,010		\$716,041
Scope and Bid Contingency (5%)	\$716,041					\$716,041
Total Earthmoving						\$21,481,235
Water Treatment						
Pad Neutralization & Water Treatment						
Pad Draindown Pumping	\$19,382.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19,382
Cyanide Destruction	\$193,820.00	\$0.00	\$0.00	\$0.00	\$0.00	\$193,820
Pad Denitrification Nutrient	\$5,000.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$15,000
Polo Denitrification	\$0.00	\$0.00	\$179,663.00	\$0.00	\$0.00	\$179,663
North Foley Denitrification	\$157,802.00	\$157,802.00	\$157,802.00	\$0.00	\$0.00	\$473,406
Electricity	\$69,591.00	\$69,591.00	\$69,591.00	\$0.00	\$0.00	\$208,773
Natural Gas	\$152,468.00	\$152,468.00	\$152,468	\$0.00	\$0.00	\$457,404
Total Pad Neutralization & Water Treatment	\$598,063.00	\$384,861.00	\$564,524.00	\$0.00	\$0.00	\$1,547,448
Ross Valley Water Treatment Plant						
Nutrient	\$55,000.00	\$55,000.00	\$55,000.00	\$55,000.00	\$55,000.00	\$275,000
Electricity	\$30,255.00	\$30,255.00	\$30,255.00	\$30,255.00	\$30,255.00	\$151,275
Natural Gas	\$38,117.00	\$38,117.00	\$38,117.00	\$38,117.00	\$38,117.00	\$190,585
Carbon Replacement	\$130,400.00	\$130,400.00	\$130,400.00	\$130,400.00	\$130,400.00	\$652,000
Plant Maintenance	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$50,000
RV Treatment Plant Total	\$263,772.00	\$263,772.00	\$263,772.00	\$263,772.00	\$263,772.00	\$1,318,860
Process Area Ground Water Remediation						
Pumping Costs	\$600.00	\$600.00	\$600.00	\$600.00	\$600.00	\$3,000
Nutrient	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$25,000
Monitoring	\$35,000.00	\$35,000.00	\$35,000.00	\$35,000.00	\$35,000.00	\$175,000
Analytical Testing	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00	\$300,000
Total Process Area GW Remediation	\$100,600.00	\$100,600.00	\$100,600.00	\$100,600.00	\$100,600.00	\$503,000
Plant Operators	\$105,000.00	\$105,000.00	\$105,000.00	\$105,000.00	\$105,000.00	\$525,000
Other Payroll						
Security/Safety Person (50%)	\$35,000.00	\$35,000.00	\$35,000.00	\$35,000.00	\$0.00	\$140,000
Gas & Diesel for Pickups/Equip.	\$4,500.00	\$4,500.00	\$4,500.00	\$3,000.00	\$1,500.00	\$18,000
Equipment & Vehicle Maintenance	\$9,000.00	\$9,000.00	\$9,000.00	\$4,500.00	\$2,250.00	\$33,750
Pickup Truck	\$25,000.00					\$25,000

Liner Repair	\$5,000.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	\$15,000
Water Sampling & Analysis	\$172,098.00	\$151,473.00	\$168,748.00	\$115,174.00	\$115,174.00	\$722,667
Biological Monitoring	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00	\$75,000
Well Plugging						\$2,736
Pipeline from Ponderosa to Foley	\$24,848.00					\$24,848
Pipeline from RV to Ponderosa	\$5,900.00					\$5,900
HDH-12 Pipeline	\$10,000.00					\$10,000
Replacement Pumps	\$20,000.00	\$20,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$70,000
Subtotal Water Treatment						\$5,037,209
Mobilization (1%)	\$50,372.00					\$50,372
Performance Bond (1%)	\$50,372.00					\$50,372
Contractor Overhead (8%)	\$80,595.00	\$80,596.00	\$80,596.00	\$80,595.00	\$80,595.00	\$402,977
State Excise Tax (2%)	\$20,148.00	\$20,149.00	\$20,149.00	\$20,149.00	\$20,149.00	\$100,744
Contractor Profit (10%)	\$100,744.00	\$100,745.00	\$100,744.00	\$100,744.00	\$100,744.00	\$503,721
Contingency (25%)	\$251,860.00	\$251,861.00	\$251,861.00	\$251,860.00	\$251,860.00	\$1,259,302
Insp., Admin., & Maint. (10%)	\$100,744.00	\$100,745.00	\$100,744.00	\$100,744.00	\$100,744.00	\$503,721
Engineering & Consulting (3%)	\$30,223.00	\$30,224.00	\$30,223.00	\$30,223.00	\$30,223.00	\$151,116
Scope and Bid Contingency (5%)	\$251,860.00					\$251,860
Total Water Treatment	\$1,487,978.00	\$1,300,867.00	\$1,308,139.00	\$1,085,761.00	\$1,047,011.00	\$8,311,394
Miscellaneous						
Gas & Diesel	\$4,500.00	\$4,500.00	\$4,500.00	\$3,000.00	\$1,500.00	\$18,000
Equipment Maintenance	\$9,000.00	\$9,000.00	\$9,000.00	\$4,500.00	\$2,250.00	\$33,750
Office Supplies	\$2,400.00	\$1,800.00	\$1,200.00	\$600.00	\$300.00	\$6,300
Insurance	\$30,000.00	\$30,000.00	\$30,000.00	\$0.00	\$0.00	\$90,000
Pickup Truck	\$25,000.00					\$25,000
Computers	\$7,500.00					\$7,500
Utilities						
Electricity	\$408,624.00	\$224,736.00	\$119,388.00	\$75,000.00	\$30,684.00	\$858,432
Garbage Disposal	\$3,600.00	\$3,600.00	\$3,600.00	\$1,200.00	\$600.00	\$12,600
Phone, Internet, & Radios	\$7,200.00	\$7,200.00	\$7,200.00	\$1,800.00	\$1,200.00	\$24,600
Propane	\$6,000.00	\$6,000.00	\$6,000.00	\$3,000.00	\$1,500.00	\$22,500
Subtotal Misc. & Utilities						\$1,098,682
Contingency (10%)	\$50,382.00	\$28,684.00	\$18,088.00	\$8,911.00	\$3,803.00	\$109,868
Insp., Admin., & Maint. (1%)	\$5,038.00	\$2,868.00	\$1,809.00	\$891.00	\$381.00	\$10,987
Total Misc. & Utilities	\$559,244.00	\$318,388.00	\$200,785.00	\$98,902.00	\$42,218.00	\$1,219,537
Total Earthmoving, Water Treatment, Misc. & Utilities						\$31,012,166
Inflation Cost Adjustment @ 3% Per Year for 2 Years						\$1,860,730

Total Reclamation Bond
ROUND TO:

\$32,872,896
\$32,873,000

of Water Treatment Employees

2

2

2

2

2

Process Area (Leach Pads and Ponds) (9/11)

MATERIAL MOVING WITH DOZER

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	200
Vol. of Mat. (cy):	456953 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	2
Production =	540 cy/hr
Total Time @ 80% Eff. =	1057.8 hrs
Cost =	\$158,755

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		300
Acreage (acres):		136.41
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Production =		480 cy/hr
Total Time @ 80% Eff. =		286.6 hrs
Cost =		\$43,013

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft):	100
Vol. of Material (cy):	46700
Loader Type(1:980,2:988)	2
Bucket Capacity (cy):	8.25
Load-Dump-Man. Time(min):	0.6
Cost for Loader (\$/hr):	\$130.68
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:35T,2:50T):	2
Truck Capacity (cy):	37
Avg. Truck Speed (mph):	10
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	3750
Cost for Truck (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.4 min/truck
No. of Truckloads =	1262 loads
Time per Truckload =	12.9 min
Optimum No. of Trucks =	5 trucks
Time/Truck @ 80% Eff. =	67.8 hrs/truck
F.E.L. Time @ 80% Eff. =	67.8 hrs
Cost =	\$51,422

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		136.41 acres	
Cost =		\$12,325	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		136.41 acres	

Cost = \$7,819

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 136.41 acres

Cost = \$1,455

SEEDING COSTS

Acreage (acres): 136.41
Cost (\$/acre): 500

Total Cost = \$68,205

HYDOMULCH (WOOD FIBER)

Acreage (acres): 136.41
Cost (\$/acres): 400

Total Cost = \$54,564

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 136.41

Total Cost = \$8,179

POND LINER REMOVAL

No. of Ponds: 4
Hours per Pond (assumed): 16
No. of Laborers (assumed): 6
Cost per Laborer: \$10.00
Cost for Supervisor: \$20.00
Total Cost = \$5,120

FUEL COSTS

Cost of fuel (\$/gal):

\$3.87 /gal

EQUIPMENT

HOURS

CONSUMP.

Cat D9T Dozer

1344.4

14.0 gal/hr

Cat 637E Scraper

0.0

11.5 gal/hr

Cat 16M Grader

0.0

9.0 gal/hr

Cat 980 Loader

0.0

8.4 gal/hr

Cat 988H Loader

67.8

16 gal/hr

Cat 773 Truck

339.0

14.5 gal/hr

Cat 770 Truck

0.0

13.5 gal/hr

Total Cost =

\$96,061

MISC. COSTS

Erosion Control

\$20,000

TOTAL COST =

\$526,917

Offload 10 Million Tons from Leach Pad (9/11)

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft):	125
Vol. of Material (cy):	5926000
Loader Type(1:988,2:992)	2
Bucket Capacity (cy):	16
Load-Dump-Man. Time(min):	0.7
Cost for Loader (\$/hr):	\$289.77
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:50T,2:100T):	2
Truck Capacity (cy):	59.3
Avg. Truck Speed (mph):	25
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	6500
Cost for Truck (\$/hr):	\$198.86
Cost for Oper. (\$/hr):	\$26.50
# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.8 min/truck
No. of Truckloads =	99933 loads
Time per Truckload =	10.7 min
Optimum No. of Trucks =	4 trucks
Time/Truck @ 80% Eff. =	5569.2 hrs/truck
F.E.L. Time @ 80% Eff. =	5569.2 hrs
Cost =	\$6,781,671

FUEL COSTS

Cost of fuel (\$/gal): EQUIPMENT	HOURS	\$3.87 /gal	CONSUMP.
Cat D9T Dozer		0.0	14.9 gal/hr
Cat 637E Scraper		0.0	11.5 gal/hr
Cat 16M Grader		0.0	10.0 gal/hr
Cat 988H Loader		0.0	13.2 gal/hr
Cat 992K Loader		5569.2	24 gal/hr
Cat 777 Truck		22276.8	19.6 gal/hr
Cat 773 Truck		0.0	15.0 gal/hr
Total Cost =		\$2,207,007	

MISC. COSTS

TOTAL COST = \$8,988,678

Upper Ross Valley Spent Ore Depository (9/11)

MATERIAL MOVING WITH DOZER (Reducing slopes)

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	250
Vol. of Mat. (cy):	464000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	2
Production =	432 cy/hr
Total Time @ 80% Eff. =	1342.6 hrs
Cost =	\$201,497

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		14.21
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	206329 ft	
Number of Passes =	688 passes	
Total Time @ 80% eff =	52.4 hrs	
Cost =	\$7,864	

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	500
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	14.21
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
Travel Distance =	121370 ft
Number of Passes =	243 passes
Total Time @ 80% eff =	11.3 hrs
Cost =	\$1,359

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		300
Acreage (acres):		45.14
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Production =		480 cy/hr
Total Time @ 80% Eff. =		94.8 hrs
Cost =		\$14,228

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft): 100
 Vol. of Material (cy): 31598
 Loader Type(1:980,2:988) 2
 Bucket Capacity (cy): 8.25

Load-Dump-Man. Time(min): 0.6
 Cost for Loader (\$/hr): \$130.68
 Cost for Oper. (\$/hr): \$26.50
 Truck Type (1:35T,2:50T): 2
 Truck Capacity (cy): 37
 Avg. Truck Speed (mph): 10
 Man. & Dump Time (min): 2
 Avg. Haul Dist. (ft): 2200
 Cost for Truck (\$/hr): \$93.75
 Cost for Oper. (\$/hr): \$26.50

Buckets to Fill Truck = 4 buckets
 Loader Time/Truckload = 2.4 min/truck
 No. of Truckloads = 854 loads
 Time per Truckload = 9.4 min
 Optimum No. of Trucks = 4 trucks
 Time/Truck @ 80% Eff. = 41.8 hrs/truck
 F.E.L. Time @ 80% Eff. = 41.8 hrs
 Cost = \$26,676

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		59.35 acres	

Cost = \$5,363

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb

Acreage (acres): 59.35 acres

Cost = \$3,402

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 59.35 acres

Cost = \$633

SEEDING COSTS

Acreage (acres): 59.35
Cost (\$/acre): 500

Total Cost = \$29,675

HYDOMULCH (WOOD FIBER)

Acreage (acres): 59.35
Cost (\$/acres): 400

Total Cost = \$23,740

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 59.35

Total Cost = \$3,559

POND LINER REMOVAL

No. of Ponds: 2
Hours per Pond (assumed): 16
No. of Laborers (assumed): 6
Cost per Laborer: \$10.00
Cost for Supervisor: \$20.00
Total Cost = \$2,560

FUEL COSTS

Cost of fuel (\$/gal):		\$3.87 /gal	
EQUIPMENT	HOURS		CONSUMP.
Cat D9T Dozer	1489.8		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	11.3		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	41.8		16 gal/hr
Cat 773 Truck	167.2		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$93,082	

MISC. COSTS

Erosion Control	\$10,000
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TOTAL COST = \$423,637

Upper Ross Valley Spent Ore Facility Cap Rock (9/11)

MATERIAL MOVING (Truck & Front End Loader)

Hauling waste rock from Reliance for rock cap

Unit Wt. Mat. (lb/cu ft):	110
Vol. of Material (cy):	96000
Loader Type(1:980,2:988)	2
Bucket Capacity (cy):	8.25

Load-Dump-Man. Time(min):	0.6
Cost for Loader (\$/hr):	\$130.68
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:35T,2:50T):	2
Truck Capacity (cy):	33.7
Avg. Truck Speed (mph):	10
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	6000
Cost for Truck (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50

# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.4 min/truck
No. of Truckloads =	2849 loads
Time per Truckload =	18 min
Optimum No. of Trucks =	8 trucks
Time/Truck @ 80% Eff. =	133.5 hrs/truck
F.E.L. Time @ 80% Eff. =	133.5 hrs
Cost =	\$149,411

MATERIAL MOVING WITH DOZER (Moving cap rock)

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	250
Vol. of Mat. (cy):	96000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	1
Production =	432 cy/hr
Total Time @ 80% Eff. =	277.8 hrs
Cost =	\$41,692

FUEL COSTS

Cost of fuel (\$/gal):

\$3.87 /gal

EQUIPMENT

HOURS

CONSUMP.

Cat D9T Dozer

277.8

14.0 gal/hr

Cat 637E Scraper

0.0

11.5 gal/hr

Cat 16M Grader

0.0

9.0 gal/hr

Cat 980 Loader

0.0

8.4 gal/hr

Cat 988H Loader

133.5

16 gal/hr

Cat 773 Truck

1068.0

14.5 gal/hr

Cat 770 Truck

0.0

13.5 gal/hr

Total Cost =

\$83,248

MISC. COSTS

TOTAL COST =

\$274,351

MATERIAL MOVING WITH DOZER (Spreading pit backfill)

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	250
Vol. of Mat. (cy):	1,208,161 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	2
Production =	432 cy/hr
Total Time @ 80% Eff. =	3495.8 hrs
Cost =	\$524,650

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		189.68
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Travel Distance =		2754154 ft
Number of Passes =		9181 passes
Total Time @ 80% eff =		699.8 hrs
Cost =		\$105,026

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	1000
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	95.33
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
Travel Distance =	814230 ft
Number of Passes =	814 passes
Total Time @ 80% eff =	70.2 hrs
Cost =	\$8,442

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		300
Acreage (acres):		189.68
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Production =		480 cy/hr
Total Time @ 80% Eff. =		398.5 hrs
Cost =		\$59,807

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft): 100
 Vol. of Material (cy): 151739
 Loader Type(1:980,2:988) 2
 Bucket Capacity (cy): 8.25

Load-Dump-Man. Time(min): 0.6
 Cost for Loader (\$/hr): \$130.68
 Cost for Oper. (\$/hr): \$26.50
 Truck Type (1:35T,2:50T): 2
 Truck Capacity (cy): 37
 Avg. Truck Speed (mph): 10
 Man. & Dump Time (min): 2
 Avg. Haul Dist. (ft): 2700
 Cost for Truck (\$/hr): \$93.75
 Cost for Oper. (\$/hr): \$26.50

Buckets to Fill Truck = 4 buckets
 Loader Time/Truckload = 2.4 min/truck
 No. of Truckloads = 4101 loads
 Time per Truckload = 10.5 min
 Optimum No. of Trucks = 4 trucks
 Time/Truck @ 80% Eff. = 224.3 hrs/truck
 F.E.L. Time @ 80% Eff. = 224.3 hrs
 Cost = \$143,144

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		285.01 acres	
Cost =		\$25,752	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		285.01 acres	

Cost = \$16,337

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 285.01 acres

Cost = \$3,040

SEEDING COSTS

Acreage (acres): 285.01
Cost (\$/acre): 500

Total Cost = \$142,505

HYDOMULCH (WOOD FIBER)

Acreage (acres): 285.01
Cost (\$/acres): 400

Total Cost = \$114,004

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 285.01

Total Cost = \$17,089

FUEL COSTS

Cost of fuel (\$/gal):		\$3.87 /gal	
EQUIPMENT	HOURS		CONSUMP.
Cat D9T Dozer	4594.1		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	70.2		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	224.3		16 gal/hr
Cat 773 Truck	897.2		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$315,588	

MISC. COSTS

Erosion Control	\$20,000
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TOTAL COST = \$1,495,383

Denitrification Pads (9/11)

MATERIAL MOVING WITH DOZER (Reducing slopes)

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	200
Vol. of Mat. (cy):	550000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	1
Production =	540 cy/hr
Total Time @ 80% Eff. =	1273.1 hrs
Cost =	\$191,067

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		26.27
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	381440 ft	
Number of Passes =	1271 passes	
Total Time @ 80% eff =	96.9 hrs	
Cost =	\$14,543	

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	500
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	26.27
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50

Travel Distance =	224377 ft
Number of Passes =	449 passes
Total Time @ 80% eff =	21.0 hrs
Cost =	\$2,525

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		200
Acreage (acres):		73.52
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Production =		750 cy/hr
Total Time @ 80% Eff. =		98.8 hrs
Cost =		\$14,828

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft): 100
 Vol. of Material (cy): 53128
 Loader Type(1:980,2:988) 2
 Bucket Capacity (cy): 8.25

Load-Dump-Man. Time(min): 0.6
 Cost for Loader (\$/hr): \$130.68
 Cost for Oper. (\$/hr): \$26.50
 Truck Type (1:35T,2:50T): 2
 Truck Capacity (cy): 37
 Avg. Truck Speed (mph): 10
 Man. & Dump Time (min): 2
 Avg. Haul Dist. (ft): 1500
 Cost for Truck (\$/hr): \$93.75
 Cost for Oper. (\$/hr): \$26.50

Buckets to Fill Truck = 4 buckets
 Loader Time/Truckload = 2.4 min/truck
 No. of Truckloads = 1436 loads
 Time per Truckload = 7.8 min
 Optimum No. of Trucks = 3 trucks
 Time/Truck @ 80% Eff. = 77.8 hrs/truck
 F.E.L. Time @ 80% Eff. = 77.8 hrs
 Cost = \$40,295

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		99.79 acres	

Cost = \$9,017

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb

Acreage (acres): 99.79 acres

Cost = \$5,720

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 99.79 acres

Cost = \$1,064

SEEDING COSTS

Acreage (acres): 99.79
Cost (\$/acre): 500

Total Cost = \$49,895

HYDOMULCH (WOOD FIBER)

Acreage (acres): 99.79
Cost (\$/acres): 400

Total Cost = \$39,916

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 99.79

Total Cost = \$5,983

FUEL COSTS

Cost of fuel (\$/gal):

\$3.87 /gal

EQUIPMENT

HOURS

CONSUMP.

Cat D9T Dozer

1468.8

14.0 gal/hr

Cat 637E Scraper

0.0

11.5 gal/hr

Cat 16M Grader

21.0

9.0 gal/hr

Cat 980 Loader

0.0

8.4 gal/hr

Cat 988H Loader

77.8

16 gal/hr

Cat 773 Truck

233.4

14.5 gal/hr

Cat 770 Truck

0.0

13.5 gal/hr

Total Cost =

\$98,226

MISC. COSTS

Erosion Control

\$10,000

TOTAL COST =

\$483,079

Denitrification Pad Cap Rock (9/11)

MATERIAL MOVING WITH DOZER (Moving cap rock)

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	200
Vol. of Mat. (cy):	178000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	1
Production =	540 cy/hr
Total Time @ 80% Eff. =	412 hrs
Cost =	\$61,833

MATERIAL MOVING (Truck & Front End Loader)

Hauling waste rock from pit area for rock cap

Unit Wt. Mat. (lb/cu ft):	110
Vol. of Material (cy):	178000
Loader Type(1:980,2:988)	2
Bucket Capacity (cy):	8.25

Load-Dump-Man. Time(min):	0.6
Cost for Loader (\$/hr):	\$130.68
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:35T,2:50T):	2
Truck Capacity (cy):	33.7
Avg. Truck Speed (mph):	15
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	2500
Cost for Truck (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50

# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.4 min/truck
No. of Truckloads =	5282 loads
Time per Truckload =	8.2 min
Optimum No. of Trucks =	3 trucks
Time/Truck @ 80% Eff. =	300.8 hrs/truck
F.E.L. Time @ 80% Eff. =	300.8 hrs
Cost =	\$155,793

FUEL COSTS

Cost of fuel (\$/gal):		\$3.87 /gal	
EQUIPMENT	HOURS		CONSUMP.
Cat D9T Dozer	412.0		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	0.0		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	300.8		16 gal/hr
Cat 773 Truck	902.4		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$91,586	

MISC. COSTS

TOTAL COST = \$309,212

RelianceWaste Rock Facility (9/11)

RIPPING FLAT AREAS

Dozer Type:	Cat D9T
Ripper Spacing (ft):	3
Avg. Speed (mph):	1
Avg. Pass (ft):	300
Man. Time (min):	0.25
Acreage (acres):	9.92
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Travel Distance =	144038 ft
Number of Passes =	480 passes
Total Time @ 80% eff =	36.6 hrs
Cost =	\$5,493

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	1000
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	9.92
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50

Travel Distance =	84728 ft
Number of Passes =	85 passes
Total Time @ 80% eff =	7.3 hrs
Cost =	\$878

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft):	100
Vol. of Material (cy):	5281
Loader Type(1:980,2:988)	2
Bucket Capacity (cy):	8.25
Load-Dump-Man. Time(min):	0.6
Cost for Loader (\$/hr):	\$130.68
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:35T,2:50T):	2
Truck Capacity (cy):	37
Avg. Truck Speed (mph):	10
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	2000
Cost for Truck (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.4 min/truck
No. of Truckloads =	143 loads
Time per Truckload =	8.9 min
Optimum No. of Trucks =	4 trucks
Time/Truck @ 80% Eff. =	6.6 hrs/truck
F.E.L. Time @ 80% Eff. =	6.6 hrs
Cost =	\$4,212

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		9.92 acres	
Cost =		\$896	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		9.92 acres	

Cost = \$569

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 9.92 acres

Cost = \$106

SEEDING COSTS

Acreage (acres): 9.92
Cost (\$/acre): 500

Total Cost = \$4,960

HYDOMULCH (WOOD FIBER)

Acreage (acres): 9.92
Cost (\$/acres): 400

Total Cost = \$3,968

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 9.92

Total Cost = \$595

FUEL COSTS

Cost of fuel (\$/gal): EQUIPMENT	HOURS	\$3.87 /gal	CONSUMP.
Cat D9T Dozer	36.6		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	7.3		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	6.6		16 gal/hr
Cat 773 Truck	26.4		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$4,127	

MISC. COSTS

TOTAL COST = \$25,804

Low Grade Stockpile (9/11)

MATERIAL MOVING WITH DOZER

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	50
Vol. of Mat. (cy):	16000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	2
Production =	1584 cy/hr
Total Time @ 80% Eff. =	12.6 hrs
Cost =	\$1,891

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		2
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	29040 ft	
Number of Passes =	97 passes	
Total Time @ 80% eff =	7.4 hrs	
Cost =	\$1,111	

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		300
Acreage (acres):		7.84
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Production =		480 cy/hr
Total Time @ 80% Eff. =		16.5 hrs
Cost =		\$2,476

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft): 100
 Vol. of Material (cy): 4174
 Loader Type(1:980,2:988) 2
 Bucket Capacity (cy): 8.25

Load-Dump-Man. Time(min): 0.6
 Cost for Loader (\$/hr): \$130.68
 Cost for Oper. (\$/hr): \$26.50
 Truck Type (1:35T,2:50T): 2
 Truck Capacity (cy): 37
 Avg. Truck Speed (mph): 10
 Man. & Dump Time (min): 2
 Avg. Haul Dist. (ft): 1000
 Cost for Truck (\$/hr): \$93.75
 Cost for Oper. (\$/hr): \$26.50

Buckets to Fill Truck = 4 buckets
 Loader Time/Truckload = 2.4 min/truck
 No. of Truckloads = 113 loads
 Time per Truckload = 6.7 min
 Optimum No. of Trucks = 3 trucks
 Time/Truck @ 80% Eff. = 5.3 hrs/truck
 F.E.L. Time @ 80% Eff. = 5.3 hrs
 Cost = \$2,745

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		7.54 acres	

Cost = \$681

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb

Acreage (acres): 7.54 acres

Cost = \$432

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 7.54 acres

Cost = \$80

SEEDING COSTS

Acreage (acres): 7.54
Cost (\$/acre): 500

Total Cost = \$3,770

HYDOMULCH (WOOD FIBER)

Acreage (acres): 7.54
Cost (\$/acres): 400

Total Cost = \$3,016

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 7.54

Total Cost = \$452

FUEL COSTS

Cost of fuel (\$/gal):

\$3.87 /gal

EQUIPMENT

HOURS

CONSUMP.

Cat D9T Dozer

36.5

14.0 gal/hr

Cat 637E Scraper

0.0

11.5 gal/hr

Cat 16M Grader

0.0

9.0 gal/hr

Cat 980 Loader

0.0

8.4 gal/hr

Cat 988H Loader

5.3

16 gal/hr

Cat 773 Truck

15.9

14.5 gal/hr

Cat 770 Truck

0.0

13.5 gal/hr

Total Cost =

\$3,198

MISC. COSTS

Erosion Control

\$1,000

TOTAL COST =

\$20,853

Office and Crusher ((9/11))

MATERIAL MOVING WITH DOZER

Dozer Type:	Cat D9T
Blade Type:	Universal
Avg. Doze Dist. (ft.):	50
Vol. of Mat. (cy):	7000 (estimation)
Cost for Dozer (\$/hr):	\$123.58
Cost for Oper. (\$/hr):	\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:	2
Production =	1584 cy/hr
Total Time @ 80% Eff. =	5.5 hrs
Cost =	\$825

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		25.7
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	373164 ft	
Number of Passes =	1244 passes	
Total Time @ 80% eff =	94.8 hrs	
Cost =	\$14,228	

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	1000
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	25.7
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50

Travel Distance =	219508 ft
Number of Passes =	220 passes
Total Time @ 80% eff =	18.9 hrs
Cost =	\$2,273

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		300
Acreage (acres):		9.38
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Production =		480 cy/hr
Total Time @ 80% Eff. =		19.7 hrs
Cost =		\$2,957

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft):	100
Vol. of Material (cy):	13683
Loader Type(1:980,2:988)	2
Bucket Capacity (cy):	8.25
Load-Dump-Man. Time(min):	0.6
Cost for Loader (\$/hr):	\$130.68
Cost for Oper. (\$/hr):	\$26.50
Truck Type (1:35T,2:50T):	2
Truck Capacity (cy):	37
Avg. Truck Speed (mph):	10
Man. & Dump Time (min):	2
Avg. Haul Dist. (ft):	3700
Cost for Truck (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
# Buckets to Fill Truck =	4 buckets
Loader Time/Truckload =	2.4 min/truck
No. of Truckloads =	370 loads
Time per Truckload =	12.8 min
Optimum No. of Trucks =	5 trucks
Time/Truck @ 80% Eff. =	19.7 hrs/truck
F.E.L. Time @ 80% Eff. =	19.7 hrs
Cost =	\$14,941

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		25.7 acres	

Cost = \$2,322

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb

Acreage (acres): 25.7 acres

Cost = \$1,473

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 25.7 acres

Cost = \$274

SEEDING COSTS

Acreage (acres): 25.7
Cost (\$/acre): 500

Total Cost = \$12,850

HYDOMULCH (WOOD FIBER)

Acreage (acres): 25.7
Cost (\$/acres): 400

Total Cost = \$10,280

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 25.7

Total Cost = \$1,541

POND LINER REMOVAL

No. of Ponds: 1
Hours per Pond (assumed): 8
No. of Laborers (assumed): 6
Cost per Laborer: \$10.00
Cost for Supervisor: \$20.00
Total Cost = \$640

FUEL COSTS

Cost of fuel (\$/gal): EQUIPMENT	HOURS	\$3.87 /gal	CONSUMP.
Cat D9T Dozer	120.0		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	18.9		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	19.7		16 gal/hr
Cat 773 Truck	98.5		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$13,907	

MISC. COSTS

Erosion Control	\$1,000
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TOTAL COST = \$79,511

Juno Pond and Surrounding Area (9/11)

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		9.63
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	139828 ft	
Number of Passes =	466 passes	
Total Time @ 80% eff =	35.5 hrs	
Cost =	\$5,328	

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	1000
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	9.63
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
Travel Distance =	82252 ft
Number of Passes =	82 passes
Total Time @ 80% eff =	7.1 hrs
Cost =	\$854

MATERIAL MOVING (Truck & Front End Loader)

Unit Wt. Mat. (lb/cu ft): 100
 Vol. of Material (cy): 5127
 Loader Type(1:980,2:988) 2
 Bucket Capacity (cy): 8.25

Load-Dump-Man. Time(min): 0.6
 Cost for Loader (\$/hr): \$130.68
 Cost for Oper. (\$/hr): \$26.50
 Truck Type (1:35T,2:50T): 2
 Truck Capacity (cy): 37
 Avg. Truck Speed (mph): 10
 Man. & Dump Time (min): 2
 Avg. Haul Dist. (ft): 2000
 Cost for Truck (\$/hr): \$93.75
 Cost for Oper. (\$/hr): \$26.50

Buckets to Fill Truck = 4 buckets
 Loader Time/Truckload = 2.4 min/truck
 No. of Truckloads = 139 loads
 Time per Truckload = 8.9 min
 Optimum No. of Trucks = 4 trucks
 Time/Truck @ 80% Eff. = 6.4 hrs/truck
 F.E.L. Time @ 80% Eff. = 6.4 hrs
 Cost = \$4,084

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		9.63 acres	
Cost =		\$870	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		9.63 acres	

Cost = \$552

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 9.63 acres

Cost = \$103

SEEDING COSTS

Acreage (acres): 9.63
Cost (\$/acre): 500

Total Cost = \$4,815

HYDOMULCH (WOOD FIBER)

Acreage (acres): 9.63
Cost (\$/acres): 400

Total Cost = \$3,852

FERTILIZER

N Appl. Rate (lbs/acre): 18
P Appl. Rate (lbs/acre): 46
K Appl. Rate (lbs/acre): 0
N Cost (\$/lb): \$1.67
P Cost (\$/lb): \$0.65
K Cost (\$/lb): \$0.50
Acreage (acres): 9.63

Total Cost = \$577

POND LINER REMOVAL

No. of Ponds: 1
Hours per Pond (assumed): 8
No. of Laborers (assumed): 6
Cost per Laborer: \$10.00
Cost for Supervisor: \$20.00
Total Cost = \$640

FUEL COSTS

Cost of fuel (\$/gal):

\$3.87 /gal

EQUIPMENT

HOURS

CONSUMP.

Cat D9T Dozer

35.5

14.0 gal/hr

Cat 637E Scraper

0.0

11.5 gal/hr

Cat 16M Grader

7.1

9.0 gal/hr

Cat 980 Loader

0.0

8.4 gal/hr

Cat 988H Loader

6.4

16 gal/hr

Cat 773 Truck

25.6

14.5 gal/hr

Cat 770 Truck

0.0

13.5 gal/hr

Total Cost =

\$4,004

MISC. COSTS

Erosion Control

\$5,000

TOTAL COST =

\$30,679

Topsoil Stockpiles (9/11)

RIPPING FLAT AREAS

Dozer Type:	Cat D9T	
Ripper Spacing (ft):		3
Avg. Speed (mph):		1
Avg. Pass (ft):		300
Man. Time (min):		0.25
Acreage (acres):		15.09
Cost for Dozer (\$/hr):	\$123.58	
Cost for Oper. (\$/hr):	\$26.50	
Travel Distance =	219107 ft	
Number of Passes =	730 passes	
Total Time @ 80% eff =	55.7 hrs	
Cost =	\$8,359	

GRADING FLATS

Grader Type:	Cat 16M
Blade Width (ft):	10.2
Man. Time (min):	0.35
Avg. Pass (ft):	1000
Avg. Speed (mph):	3
# of passes over area:	2
Acreage (acres):	15.09
Cost for Grader (\$/hr):	\$93.75
Cost for Oper. (\$/hr):	\$26.50
Travel Distance =	128886 ft
Number of Passes =	129 passes
Total Time @ 80% eff =	11.1 hrs
Cost =	\$1,335

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		15.09 acres	
Cost =		\$1,363	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		15.09 acres	
Cost =		\$865	

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 15.09 acres

Cost = \$161

SEEDING COSTS

Acreage (acres): 15.09
 Cost (\$/acre): 500

Total Cost = \$7,545

HYDOMULCH (WOOD FIBER)

Acreage (acres): 15.09
 Cost (\$/acres): 400

Total Cost = \$6,036

FERTILIZER

N Appl. Rate (lbs/acre): 18

P Appl. Rate (lbs/acre): 46

K Appl. Rate (lbs/acre): 0

N Cost (\$/lb): \$1.67

P Cost (\$/lb): \$0.65

K Cost (\$/lb): \$0.50

Acreage (acres): 15.09

Total Cost = \$905

FUEL COSTS

Cost of fuel (\$/gal): EQUIPMENT	HOURS	\$3.87 /gal	CONSUMP.
Cat D9T Dozer	55.7		14.0 gal/hr
Cat 637E Scraper	0.0		11.5 gal/hr
Cat 16M Grader	11.1		9.0 gal/hr
Cat 980 Loader	0.0		8.4 gal/hr
Cat 988H Loader	0.0		16 gal/hr
Cat 773 Truck	0.0		14.5 gal/hr
Cat 770 Truck	0.0		13.5 gal/hr
Total Cost =		\$3,404	

MISC. COSTS

Erosion Control	\$5,000
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TOTAL COST = \$34,974

Minimum Impact - Reclaimed Areas (9/11)

MATERIAL MOVING WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		150
Vol. of Mat. (cy):		6500 (estimation)
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Is mat. being moved to reduce slopes of heap, dump or other stockpile? Enter 1 if yes, 2 if no:		2
Production =		720 cy/hr
Total Time @ 80% Eff. =		11.3 hrs
Cost =		\$1,696

GRADING TOPSOIL ON SLOPES WITH DOZER

Dozer Type:	Cat D9T	
Blade Type:	Universal	
Avg. Doze Dist. (ft.):		150
Acreage (acres):		2
Mat. Thickness (ft.):		0.5
Cost for Dozer (\$/hr):		\$123.58
Cost for Oper. (\$/hr):		\$26.50
Production =		1000 cy/hr
Total Time @ 80% Eff. =		2 hrs
Cost =		\$300

SEED COSTS

SEED TYPE	APPL.	RATE	COST
Alfalfa		0.50 lbs/acre	\$3.00 /lb
White Dutch Clover		0.50 lbs/acre	\$3.25 /lb
Slender Wheatgrass		7.00 lbs/acre	\$3.00 /lb
Thickspike Wheatgrass		7.00 lbs/acre	\$5.00 /lb
Hard Fescue		1.50 lbs/acre	\$3.50 /lb
Timothy		1.00 lbs/acre	\$1.50 /lb
Western Wheatgrass		8.00 lbs/acre	\$3.06 /lb
Acreage (acres):		2 acres	
Cost =		\$181	

SEED COSTS (CONTINUED)

SEED TYPE	APPL.	RATE	COST
Russian Wildrye		3.00 lbs/acre	\$9.50 /lb
Canada Bluegrass		0.50 lbs/acre	\$5.50 /lb
Pubescent Wheatgrass		2.50 lbs/acre	\$2.50 /lb
Spring Wheat (nurse crop)		40.00 lbs/acre	\$0.33 /lb
Siberian Millet (nurse crop)		7.00 lbs/acre	\$0.46 /lb
Annual Ryegrass (nurse crop)		4.00 lbs/acre	\$0.85 /lb
Acreage (acres):		2 acres	
Cost =		\$115	

FORB COSTS

FORB TYPE	APPL.	RATE	COST
Black-eyed Susan		0.1 lbs/acre	\$21.46 /lb
Rocky Mountain Penstemon		0.1 lbs/acre	\$26.16 /lb
Blanket Flower		0.3 lbs/acre	\$19.68 /lb

Acreage (acres) 2 acres

Cost = \$21

SEEDING COSTS

Acreage (acres): 2
 Cost (\$/acre): 500

Total Cost = \$1,000

HYDOMULCH (WOOD FIBER)

Acreage (acres): 2
 Cost (\$/acres): 400

Total Cost = \$800

FERTILIZER

N Appl. Rate (lbs/acre): 18

P Appl. Rate (lbs/acre): 46

K Appl. Rate (lbs/acre): 0

N Cost (\$/lb): \$1.67

P Cost (\$/lb): \$0.65

K Cost (\$/lb): \$0.50

Acreage (acres): 2

Total Cost = \$120

FUEL COSTS

Cost of fuel (\$/gal): EQUIPMENT	HOURS	\$3.87 /gal	CONSUMP.
Cat D9T Dozer		13.3	14.0 gal/hr
Cat 637E Scraper		0.0	11.5 gal/hr
Cat 16M Grader		0.0	9.0 gal/hr
Cat 980 Loader		0.0	8.4 gal/hr
Cat 988H Loader		0.0	16 gal/hr
Cat 773 Truck		0.0	14.5 gal/hr
Cat 770 Truck		0.0	13.5 gal/hr
Total Cost =		\$721	

MISC. COSTS

Erosion Control	\$500
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TOTAL COST = \$5,453

Table 1 - Earthmoving Summary - Wharf Mine

Area	Material Moved with Dozer (yd ³)	Material Moved with Tuck & Loader (yd ³)	Ripping with Dozer (Acres)	Grading Flats with Grader (Acres)	Grading Slopes with Dozer (Acres)	Material Moving with Scraper (yd ³)	Acres to be Revegetated
Process Area (Leach Pads and Ponds)	456,953	46,700 (topsoil)			136.41		136.41
Offload Leach Pads (10 Million Tons)	5,926,000						
Upper Ross Valley Depository	464,000	31,598 (topsoil)	14.21	14.21	45.14		59.35
Upper Ross Valley Cap Rock	96,000	96,000 (waste rock)					
Trojan/Phase 1 Green Mtn. Pit	1,208,161	151,739 (topsoil)	189.68	95.33	189.68		285.01
Denitrification Pads	550,000	53,128 (topsoil)	26.27	26.27	73.52		99.79
Denitrification Pad Cap Rock	178,000	178,000 (waste rock)					
Reliance Waste Rock Facility		5,281 (topsoil)	9.92	9.92			9.92
Low Grade Stockpile	16,000	4,174 (topsoil)	2.00		7.84		7.54
Office and Crusher	7,000	13,683 (topsoil)	25.70	25.70	9.38		25.70
Juno Pond & Surrounding Area		5,127 (topsoil)	9.63	9.63			9.63

Area	Material Moved with Dozer (yd ³)	Material Moved with Tuck & Loader (yd ³)	Ripping with Dozer (Acres)	Grading Flats with Grader (Acres)	Grading Slopes with Dozer (Acres)	Material Moving with Scraper (yd ³)	Acres to be Revegetated
Topsoil Stockpiles			15.09	15.09			15.09
Minimum Impact	6,500				2.00		2.00

WHARF 2011 BUILDING DEMOLITION AND TANK REMOVAL COST SUMMARY

Table 1 - Building Summary				
Building	Number of Sections	Section No.	Size of Section (feet)	Total Volume (cubic feet)
Office & Shop Area				
Warehouse	2	1	60' x 95' x 20'	114,000
Addition		2	20.5' x 30' x 20'	12,300
Assay Lab	1	1	90' x 25' x 12'	27,000
Engineering Building & Shop	2	1	80' x 100' x 45'	360,000
Addition		2	35' x 20' x 8'	5,600
Shed	1		10' x 12' x 8'	960
Gate				
Crusher Complex				
Crusher Building	2	1	65' x 45' x 50'	146,250
		2	20' x 20' x 40'	16,000
Four Tertiary Crushers	Sell			
Maintenance Building	1	1	50' x 30' x 12'	18,000
Crusher Conveyors	4	1	172' x 15' x 40'	103,200
		2	203' x 15' x 20'	60,900
		3	82' x 15' x 40'	49,200
		4	117' x 15' x 30'	52,650
Primary Crusher	Sell			
Ross Valley Denitrification Plant				
Ross Valley Denitrification Building	4	1	38' x 20' x 12'	9,120
		2	31' x 10' x 12'	3,720
		3	38' x 10' x 12'	4,560
Addition		4	40' x 25' x 12'	12,000
Reactor Cell Building	3	1	50' x 50' x 5'	12,500
		2	14' x 11' x 10'	1,540
		3	24' x 22' x 12'	6,336
Concrete Reactor Cells	1			
Carbon Column Plant	1		44' x 68' x 30'	89,760
Blue Water Plant	1		30.25' x 30.25' x 25'	22,877
Environmental Shed	1		10' x 12' x 8'	960
Egg Pond Shed	1		7' x 15' x 4'	420
Steel Reactor Tanks	2		(14' x 25' x 8') x 2	5,600
Process Area				
Process Plant	4	1	85' x 87' x 45'	332,775
		2	57' x 17' x 45'	43,605
		3	50' x 22' x 45'	49,500

Addition		4	34' x 32' x 11'	11,968
Process Plant Side Building	1		44' x 35' x 10'	15,400
RO Unit building	2	1	25' x 65' x 15'	24,375
		2	21' x 15' x 15'	4,725
New Blue Water Plant	3	1	55' x 55' x 22'	66,550
		2	33.5' x 6' x 9'	1,809
		3	9' x 5' x 9'	405
Neut Building	3	1	18' x 21' x 12'	4,536
		2	16' x 18' x 12'	3,456
		3	7' x 7' x 8'	392
Tool Shed	1		24' x 18' x 10'	4,320
Pad Shack	1		29' x 15' x 10'	4,350
Generators	2	1	45' x 10' x 8'	3,600
		2	50' x 17' x 8'	6,800
Storage Trailers	2		(9' x 40' x 8') x 2	5,760
Sheds	8		(10' x 12' x 8') x 8	7,680
Juno Pond Building	1		102' x 75' x 30'	229,500

Table 2 - Building Demolition Summary

Building	Type	Building Size (cubic feet)	Demolition Cost (\$/cubic foot)	Total Cost
Office & Shop Area				
Warehouse*	Metal	126,300	\$0	\$0
Assay Lab	Metal	27,000	\$0.23	\$6,210
Engineering Building & Shop	Metal	365,600	\$0.23	\$84,088
Gut Engineering Building & Shop, including adjacent tanks	Metal	8,000 sq feet	\$4.26/sq ft	\$34,080
Shed	Wood	960	\$0.23	\$221
Gate (Leave)				\$0
Total Office & Shop Area				\$124,599
Crusher Complex				
Crusher Building	Metal	162,250	\$0.23	\$37,318
Four Tertiary Crushers	Metal	Sell		\$0
Maintenance Building	Metal	18,000	\$0.23	\$4,140
Crusher Conveyors	Metal	265,950	\$0.23	\$61,169
Primary Crusher	Metal	Sell		\$0
Total Crusher Complex				\$102,627
Ross Valley Denitrification Plant				
Ross Valley Denitrification Building	Metal	29,400	\$0.23	\$6,762
Gut Denitrification Building	Metal	2,450 sq feet	\$4.26/sq ft	\$10,437
Reactor Cell Building	Metal	20,376	\$0.23	\$4,686
Concrete Reactor Cells	Concrete			
Carbon Column Plant	Metal	89,760	\$0.23	\$20,645
Gut Carbon Column Plant	Metal	2,992 sq feet	\$4.26/sq ft	\$12,746
Blue Water Plant	Metal	22,877	\$0.23	\$5,262
Gut Blue Water Plant	Metal	915 sq feet	\$4.26/sq ft	\$3,898
Environmental Shed	Wood	960	\$0.23	\$221
Egg Pond Shed	Metal	420	\$0.23	\$97
Steel Reactor Tanks	Metal	9,000	\$0.23	\$2,070
Total RV Denite Plant				\$66,824
Process Area				
Process Plant	Metal/ Concrete	437,848	\$0.23	\$100,705
Gut Process Plant & CCIX, including adjacent tanks	Metal/ Concrete	10,552 sq feet	\$4.26/sq ft	\$44,952
Process Plant Side Building	Metal	15,400	\$0.23	\$3,542
RO Unit Building	Metal	29,100	\$0.23	\$6,693
New Blue Water Plant	Metal	68,764	\$0.23	\$15,816
Gut Blue Water Plant	Metal	3,227 sq feet	\$4.26/sq feet	\$13,747
Neut Building	Metal	8,384	\$0.23	\$1,928

Tool Shed	Wood	4,320	\$0.23	\$994
Pad Shack	Wood	4,350	\$0.23	\$1,001
Generator Trailer	Metal	10,400	\$0.23	\$2,392
Storage Trailers	Metal	5,760	\$0.23	\$1,325
Sheds	Wood	7,680	\$0.23	\$1,766
Total Process Area				\$194,861
Juno Pond Building	Metal			\$10,000

- Warehouse remains as part of reclamation plan, no demolition cost needed.
- No removal cost for fence, will remain

Table 3 – Above Ground Storage Tank and Hazardous Material Removal Summary				
Tank	Number	Tank Size (gallons)	Removal Cost (\$/tank)	Total Cost
Office & Shop Area				
Propane	1	30,000	\$3,729	\$3,729
Gasoline	1	2,000	\$895	\$895
Diesel – Trojan Fuel Station	2	15,000 15,000	\$3,729	\$7,458
Diesel – Warehouse Storage	1	15,000	\$3,729	\$3,729
Clear Diesel	1	2,000	\$895	\$895
Methanol	1	2,000	\$895	\$895
Used Oil Tank – Shop	1	2,000	\$895	\$895
Wash Bay Water – Shop (Underground)	2	4,200 4,200	\$895	\$1,790
Anti-freeze – Warehouse, Shop	2 Drums 2 Totes	55 gallons each 500 gallons each		\$1,000 \$5,000
Carbon – Warehouse	1,000 lb bags	16,000 to 20,000 lbs.		\$2,500
Solvent – Shop	2 barrels	17 gallons each		\$500
Cupric sulfate – Warehouse	2.5 pallets	120 50-lb bags		\$2,500
Total Office & Shop Area				\$31,786
Blasting Agents				
Emulsion Tank				\$10,000
Crusher Area				
Propane	2	30,000 3,000	\$3,729 \$895	\$3,729 \$895
Total Crusher Area				\$4,624
Ross Valley Denitrification Plant				
Phosphoric Acid	2	120 - RVBP 120- Blue Water	\$129	\$258
Methanol	2	2100 – RVBP 350 – Blue Water	\$895 \$354	\$895 \$354
Molasses	3	4,000 – RVBP 1,500 – Rel Pond 1,500 –RV Pond	\$895	\$2,685
Total RV Plant				\$4,192
Process Area				
Old Carbon Column Tanks	5	2,289 2,289 2,289 2,289 2,289	\$895	\$4,475
New Carbon Column Tanks	6	5,922 5,922 5,922	\$1,864	\$11,184

		5,922		
		5,922		
		5,922		
Nevada Carbon Column Tanks	4	3,123	\$895	\$3,580
		3,123		
		3,123		
		3,123		
CCIX Tanks	2	5,452	\$1,864	\$3,728
		5,452		
Big Strip Tank	1	1,786	\$895	\$895
Small Strip Tank	1	1,471	\$895	\$895
Acid Wash Tank	1	1,500	\$895	\$895
Liquid Cyanide	1	25,000	\$3,729	\$3,729
22 Be HCL	1	8,000	\$1,864	\$1,864
Anti-scalent	1	8,000	\$1,864	\$1,864
Hydrogen Peroxide	2	4,000	\$895	\$1,790
		4,000		
Blue Water Methanol	1	4,000	\$895	\$895
Blue Water Phosphoric Acid	1	4,000	\$895	\$895
Cupric Sulfate – Ditch	2.5 pallets	120 50-lb bags		\$2,500
Crucibles/Cupels/Slag	10-15 drums	2100 lbs		\$5,000
Lime	1	50 ton		\$500
Total Process Area				\$44,689
Kiln Feed and Discharge Holding Tanks	3	1,800	\$895	\$2,685
		1,800		
		1,800		

Reclamation Bond

Wharf Expansion

Bond Calculation

Plugging of Seven Monitor Wells

Labor: \$200.00 per hour
Cement: \$9.00 per sack (1.28 ft³ per sack)

$$\text{Volume}(\text{ft}^3) = D_1(\text{in})^2 \cdot 0.005454 \cdot L(\text{ft})$$

D₁ = 4.5 inch PVC

<u>Monitor Well</u>	<u>Total Length (ft) ⁽¹⁾</u>	<u>Length to be Cemented (ft) ⁽¹⁾</u>	<u>Volume (ft³)</u>
Horse Shoe	63	63	6.96
Railroad	370	370	40.86

Number of Wells 2

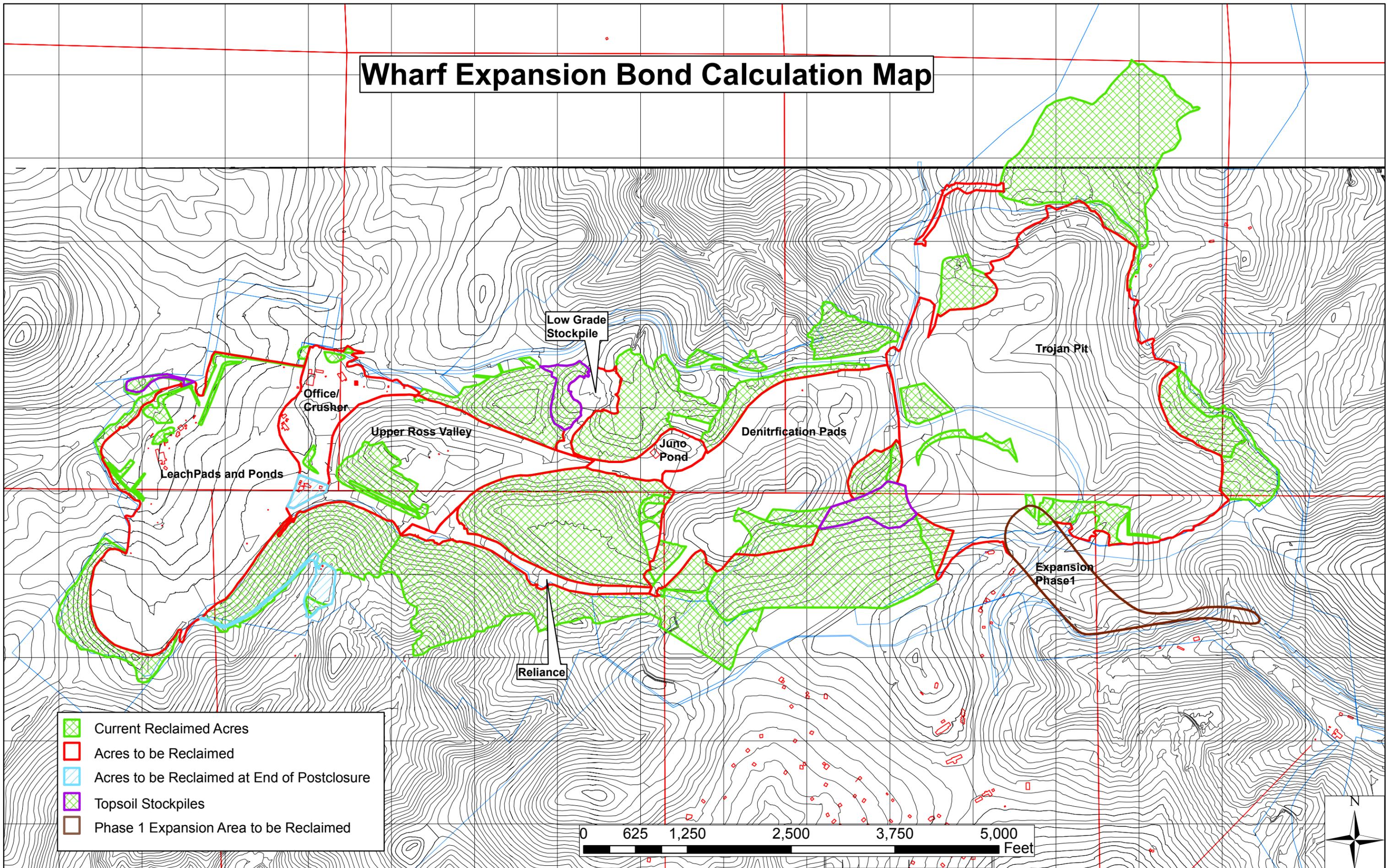
Total: 47.82 ft³

Cement = 37.36 sacks

Cost of Cement \$336
Labor Cost \$2,400
Total \$2,736



Wharf Expansion Bond Calculation Map



- Current Reclaimed Acres
- Acres to be Reclaimed
- Acres to be Reclaimed at End of Postclosure
- Topsoil Stockpiles
- Phase 1 Expansion Area to be Reclaimed

0 625 1,250 2,500 3,750 5,000 Feet

