MT NEBO SCIENTIFIC, INC.
research & consulting

VIA: E-mail October 31, 2017

Daron Haddock, Environmental Manager
Utah Coal Regulatory Program
STATE OF UTAH
Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: Wellington Prep Plant (C/007/0012): Response to the Midterm Permit Review

Dear Mr. Haddock:

Attached please find Price River Terminal's response to DOGM's Midterm Review. The attachment includes:

- Cover letter
- C1 and C2 forms
- Deficiencies, Comments & Instructions for insertion to the MRP.
- Requested changes and insertions to the MRP.

This document provides our follow up responses to DOGM comments (dated September 27, 2017) regarding PRT's Redline/~~Strike~~ version (dated August 25, 2017).

In **Appendix J**, the changes are shown in green text. In the **Hydrology** sections, the Redline/~~Strike~~ version (dated August 25, 2017) has been retained; the changes are highlighted in yellow and the page dates have been updated.

Let me know if you have questions and comments.

Sincerely,

Patrick D. Collins, Ph.D.
Resident Agent

Attachments

cc: T. Stanley (PRT)

330 East 400 South, Ste. 6, P.O. Box 337, Springville, Utah 84663
(801) 489-6937, (fax) 489-6779

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Price River Terminal
Mine: Wellington Preparation Plant **Permit Number:** C/007/012
Title: Midterm Permit Review Response (October 31, 2017)
Description, Include reason for application and timing required to implement:
Response to DOGM deficiencies in in Midterm Permit Review (October 31, 2017)

Instructions: If you answer yes to any of the first eight questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?
☐ Yes ☒ No 24. Does the application include confidential information and is it clearly marked and separated in the plan?

Please attach three (3) review copies of the application. If the mine is on or adjacent to Forest Service land please submit four (4) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Print Name	Position	Date	Signature (Right-click above choose certify then have notary sign below)
Patrick O. Collins	Resident Agent	10/31/17	

Subscribed and sworn to before me this 31 day of October, 2017

Notary Public: _____, state of Utah.

My commission Expires: 11-22-2018 }
Commission Number: #680151 } ss.
Address: 110 S. Main St. }
City: Springville State: UT Zip: 84663 }

KIMBERLY RAYBURN
Notary Public, State of Utah
Commission #680151
My Commission Expires
November 22, 2018

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised December 10, 2007)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Price River Terminal
Mine: Wellington Preparation Plant
Permit Number: C/007/012
Title: Midterm Permit Review Response (October 31, 2017)

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☒ Add	☐ Replace	☐ Remove	Refer to attached "Deficiencies, Comments & MRP Insertion Instructions" October 31, 2017
☐ Add	☒ Replace	☐ Remove	
☐ Add	☐ Replace	☒ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining

Wellington Preparation Plant (C/007/0012)
Midterm Permit Review Response

Deficiencies, Comments & MRP Insertion Instructions

October 31, 2017

(Follow up to August 25, 2017 Version)

Price River Terminal, LLC
3215 West 4th Street
Fort Worth, Texas 76107

The following, dated October 31, 2017, are responses to deficiencies provided by the State of Utah, Division of Oil, Gas & Mining (DOGM), dated September 27, 2017, as a result of their Midterm Permit Review of Wellington Prep Plant's Mining & Reclamation Plan (MRP). Price River Terminal (PRT) comments along with instructions for insertion to the MRP are also included below.

NOTES: This document provides the follow up responses to DOGM comments (dated September 27, 2017) regarding PRT's Redline/~~Strike~~ version (dated August 25, 2017). In **Appendix J**, the changes are shown in **green text**. In the **Hydrology** sections, the Redline/~~Strike~~ version (dated August 25, 2017) has been retained; the changes are highlighted in yellow and the page dates are updated.

DOGM Deficiencies:

R645-301-731, -732: The Permittee should delete the last sentence under Items C and D in Table 7.31 .2-2 that states,*"The baseline monitoring events are intended to occur in the year prior to permit renewal'.* The last baseline data collection occurred in the 3rd quarter of 2014. As such, the next baseline data collection would occur 2nd or 3rd quarter of 2019 (i.e. 5 years later). The year prior to permit renewal is 2018 as the five year permit was renewed in November of 2014. For clarity purposes, the aforementioned sentence should be deleted.

PRT Comments:

- The in redline/~~strikeout~~ text has been retained in this document. The sentences mentioned in the deficiency about have been deleted (struck out) and highlighted in yellow. The revised page dates were also updated. Finally, this information has been made insertable MRP.

.

MRP Insertion Instructions:

- Table 7.24.2 – Remove from MRP
- Table 7.24.5 – Remove from MRP
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Table 7.31.2.1 – New table, insert into Section 7.31.2 of Chapter 7 text
- Page 3 of Section 7.31 – Remove from MRP
- New Page 3 of Section 7.31 – Replaces old page 3
- Page 6b of Section 7.31 – Remove from MRP
- New Page 6b of Section 7.31 – replaces old page 6b
- Page 6c of Section 7.31 – Remove from MRP
- New Page 6c of Section 7.31 – replaces old page 6c

DOGM Deficiencies:

R645-301-830: Demo Cost sheets - items that have been identified as no longer in place need to have verifications that they are no longer there. Provide a map identifying where they were and pictures of the area cleaned up. Provide verification that left in place items are identified in the MRP- Culvert 10.

Earthwork Cost sheets - Clean up the unused items in the Earthwork Cost worksheets. Example: delete the 2"d cost that are not being used. (RS Means and Blue book costs where both given, only one is needed).

R645-301-830.140 and Tech 007: Provide copies of the bids for the items that are bid items.

Total Cost sheet will need to include the following:
Escalation factor: .0%
Number of years: 5
Escalation amount: 0
Reclamation cost escalated to 2022 dollars
Dollar Year 2017 bond amount
Bond posted amount
Difference between Cost Estimate and Bond (reclamation needed to be fully bonded)
Percent Difference between posted bond and Cost Estimate.

PRT Comments:

- The requested bond information has been provided in Appendix J.

MRP Insertion Instructions:

- Appendix J , (10/31/17) of this submittal replaces
- Appendix J, (08/25/17) of the last submittal.

7.31.2. WATER MONITORING

The monitoring plan for groundwaters and surface waters is described in Tables 7.31.2-1, 7.31.2-2, 7.31.2-4, 7.31.2-5 and 7.31.2-6. Groundwater and surface water monitoring stations are shown on Map E9-3451. The locations of UPDES monitoring stations and the locations of historic monitoring sites are also shown on Map E9-3451.

Ground and surface water monitoring are described below. Field measurements collected for both surface and ground water stations are collected with the aid of meters, except for dissolved oxygen which is monitored by use of either a meter or a field test kit using chemicals. Recommended procedures and guidelines for water sampling is attached to this MRP as Appendix 7.31-1. Results of the water monitoring program will be submitted on a quarterly basis to the Division's electronic water quality database.

The water monitoring plan has been designed to verify that impacts to the hydrologic balance do not occur as a result of mining and reclamation activities at the Price River Terminal permit area. The monitoring plan may be used to detect potential impacts by comparing the results of baseline water monitoring activities with current water monitoring data. In such an evaluation, other important factors that should be considered include climatic variability and land use and management practices.

It has been noted that there have been some historic problems with data sampling which the operator desires to resolve. As a solution the Operator agrees that flows monitored as part of the surface water monitoring program will be measured and not listed as "greater or lesser than" (unless measurement is not practically possible or do to hazard to life), and that Copies of field data collection sheets will be submitted to the Division upon request.

7.31.21. GROUND WATER MONITORING

A ground water monitoring plan, based upon the PHC determination, as described in Appendix I and Section 7.28, and baseline hydrologic and geologic information has been developed. The monitoring of groundwaters at the Price River Terminal is carried out as specified in Tables 7.31.2-1, 7.31.2-2, 7.31.3-3, and 7.31.2-5. Prior to 1996, fourteen wells were monitored quarterly for the parameters of Operational Monitoring in Table 3 of the Division's Guidelines for Establishment of Surface and Ground Water Monitoring Programs for Coal Mining and Reclamation Operations. In May 1996, a proposal was submitted to the Division to request the elimination of quality monitoring from site GW-2, total elimination of site GW-5, and the addition of two new well sites, GW-15 and GW-16. Site locations are shown on Dwg. E9-3451.

Well GW-2 will continue to collect water level data.

In November 1997, wells GW-15A, GW-15B, GW-16 and GW-17 were installed and added to the monitoring plan. Their locations are shown on DWG. E9-3451A. GW-15a and GW-15b will monitor undisturbed water in the coal fines. Permeability tests will be conducted on each of these wells prior to February 1, 1998, and results will be reported to the Division.

Baseline parameters for groundwaters will be collected as specified in Tables 7.31.2-1, 7-31.2-2, and 7.31.2-5.

Table 7.31.2-1 Hydrologic monitoring protocols for Wellington Prep Plant water monitoring stations.

	Water Level/Flow	Water Quality
Wells – East side of Price River		
GW-1	1	A, C
GW-2	1	--
GW-3	1	A, C
GW-4	1	A, C
GW-6	1	A, C
GW-15a	1	A, C
GW-15b	1	A, C
GW-16	1	A, C
GW-17	1	A, C
Surface Water – East side of Price River		
SW-1	2	B, D
SW-2	2	--
SW-2a	--	B, D
SW-3	2	B, D
SW-4	2	B, D
SW-5	2	B, D
SW-6	2	B, D
SW-7	2	B, D
Wells – West side of Price River		
GW-7	1	A, C
GW-8	1	A, C
GW-9	1	A, C
GW-9b	1	A, C
GW-10	1	A, C
GW-13	1	A, C
GW-14	1	A, C
Surface Water – West side of Price River		
SW-8	2	B, D

Table 7.31.2-2 Hydrologic monitoring protocols.

Water Level/Flow

1 Monitoring well: quarterly water level measurement when site is reasonably accessible.

2 Surface water monitoring sites: Quarterly discharge measurement when site is reasonably accessible. Site will not be physically accessed when high flows, mud, or ice is present that presents a danger to health and safety. Under such conditions, an attempt will be made to perform a discharge measurement using a technique that does not jeopardize health and safety. When the stream is ice-covered, it is usually not possible to perform a discharge measurement.

Water Quality

A Monitoring well: quarterly field and laboratory water-quality measurements as specified in Table 7.31.2-3 when site is reasonably accessible.

B Surface water: quarterly field and laboratory water-quality measurements as specified in Table 7.31.2-4 when site is reasonably accessible.

C Monitoring well: field and laboratory water-quality measurements for baseline parameters as specified in Table 7.31.2-5 only during the second or third quarter monitoring event every five (5) years when the site is reasonably accessible. The most recent baseline monitoring was performed during the 3rd quarter of 2014. Therefore, the next baseline monitoring event is scheduled for 2019, with subsequent events planned to occur every five years thereafter (2024, 2029, etc.). ~~Scheduled future baseline monitoring events are for 2019, 2024, 2029, etc. The baseline monitoring events are intended to occur in the year prior to permit renewal.~~

D Surface water: field and laboratory water quality measurements for baseline parameters as specified in Table 7.31.2-6 only during the second or third quarter monitoring event every five (5) years when the site is reasonably accessible. The most recent baseline monitoring was performed during the 3rd quarter of 2014. Therefore, the next baseline monitoring event is scheduled for 2019, with subsequent events planned to occur every five years thereafter (2024, 2029, etc.). ~~Scheduled future baseline monitoring events are for 2019, 2024, 2029, etc. The baseline monitoring events are intended to occur in the year prior to permit renewal.~~

Table 7.31.2-3 Groundwater operational and reclamation phase water-quality monitoring parameters.

FIELD MEASUREMENTS	REPORTED AS
pH	pH units
Specific Conductance	µS/cm
Temperature	°C
LABORATORY MEASUREMENTS	
Calcium (dissolved)	mg/L
Magnesium (dissolved)	mg/L
Sodium (dissolved)	mg/L
Potassium (dissolved)	mg/L
Bicarbonate	mg/L
Carbonate	mg/L
Sulfate	mg/L
Chloride	mg/L
Boron (total)	mg/L
Boron (dissolved)	mg/L
Iron (total)	mg/L
Iron (dissolved)	mg/L
Lead (dissolved)	mg/L
Manganese (total)	mg/L
Manganese (dissolved)	mg/L
Selenium (total)	mg/L
Selenium (dissolved)	mg/L
Total Dissolved Solids (TDS)	mg/L
Total Alkalinity	mg/L
Total Hardness	mg/L
Cation/Anion Balance	%

Table 7.31.2-4 Surface water operational and reclamation phase water-quality monitoring parameters.

FIELD MEASUREMENTS	REPORTED AS
pH	pH units
Specific Conductance	µS/cm
Temperature	°C
LABORATORY MEASUREMENTS	
Calcium (dissolved)	mg/L
Magnesium (dissolved)	mg/L
Sodium (dissolved)	mg/L
Potassium (dissolved)	mg/L
Bicarbonate	mg/L
Carbonate	mg/L
Sulfate	mg/L
Chloride	mg/L
Boron (total)	mg/L
Boron (dissolved)	mg/L
Iron (total)	mg/L
Iron (dissolved)	mg/L
Manganese (total)	mg/L
Manganese (dissolved)	mg/L
Selenium (total)	mg/L
Selenium (dissolved)	mg/L
Total Dissolved Solids (TDS)	mg/L
Total Suspended Solids (TSS)	mg/L
Total Settleable Solids	mg/L
Total Alkalinity	mg/L
Total Hardness	mg/L
Cation/Anion Balance	%
Oil and Grease	mg/L

Table 7.31.2-5 Groundwater baseline water-quality monitoring parameters.

FIELD MEASUREMENTS	REPORTED AS
pH	pH units
Specific Conductance	µS/cm
Temperature	°C
LABORATORY MEASUREMENTS	
Calcium (dissolved)	mg/L
Magnesium (dissolved)	mg/L
Sodium (dissolved)	mg/L
Potassium (dissolved)	mg/L
Bicarbonate	mg/L
Carbonate	mg/L
Sulfate	mg/L
Chloride	mg/L
Boron (total)	mg/L
Boron (dissolved)	mg/L
Iron (total)	mg/L
Iron (dissolved)	mg/L
Lead (dissolved)	mg/L
Manganese (total)	mg/L
Manganese (dissolved)	mg/L
Selenium (total)	mg/L
Selenium (dissolved)	mg/L
Total Dissolved Solids (TDS)	mg/L
Total Alkalinity	mg/L
Total Hardness	mg/L
Cation/Anion Balance	%
Ammonia	mg/L
Aluminum (dissolved)	mg/L
Arsenic (dissolved)	mg/L
Cadmium (dissolved)	mg/L
Copper (dissolved)	mg/L
Molybdenum (dissolved)	mg/L
Nitrate	mg/L
Nitrite	mg/L
Oil and Grease	mg/L
Phosphate (ortho)	mg/L
Zinc (dissolved)	mg/L

Table 7.31.2-6 Surface water baseline water-quality monitoring parameters.

FIELD MEASUREMENTS	REPORTED AS
pH	pH units
Specific Conductance	µS/cm
Temperature	°C
LABORATORY MEASUREMENTS	
Calcium (dissolved)	mg/L
Magnesium (dissolved)	mg/L
Sodium (dissolved)	mg/L
Potassium (dissolved)	mg/L
Bicarbonate	mg/L
Carbonate	mg/L
Sulfate	mg/L
Chloride	mg/L
Boron (total)	mg/L
Boron (dissolved)	mg/L
Iron (total)	mg/L
Iron (dissolved)	mg/L
Manganese (total)	mg/L
Manganese (dissolved)	mg/L
Selenium (total)	mg/L
Selenium (dissolved)	mg/L
Total Dissolved Solids (TDS)	mg/L
Total Suspended Solids (TSS)	mg/L
Total Settleable Solids	mg/L
Total Alkalinity	mg/L
Total Hardness	mg/L
Cation/Anion Balance	%
Oil and Grease	mg/L
Ammonia (NH3)	mg/L
Aluminum (dissolved)	mg/L
Arsenic (dissolved)	mg/L
Cadmium (total)	mg/L
Copper (total)	mg/L
Lead (total)	mg/L
Molybdenum (total)	mg/L
Nitrate	mg/L
Nitrite	mg/L
Phosphate (ortho)	mg/L
Zinc (dissolved)	mg/L

- Bailing resulting in increasingly turbid samples should be allowed to sit overnight before collecting a sample. This time delay will allow the disturbed sediments not characteristic of wells to re-settle before a valid sample is taken.
- When required and when practical, samples requiring filtering should be filtered in the field. When field filtering is not practical or possible, the laboratory will perform the filtering required. However, samples which are allowed to sit before being filtered are not truly representative of site conditions.
- A pump could be obtained for use in the collection of well samples without bailing. A low discharge pump will typically result in less turbulence and reduce the amount of sediment put into solution. At some well locations this may also result in the ability to collect the sample at the time of pumping rather than waiting until the following day.

Quarterly ground water monitoring is conducted at 14 wells (GW-1 through GW-14). A list of parameters analyzed was given previously in Table 7.24-2. Baseline parameters will be collected the year prior to the five year permit renewal. (2014, 2019, 2014, etc).

No modifications to the ground water quality monitoring plan are proposed to be implemented at the time of reclamation. A review of both operational and reclamation mapping appears to indicate that little if any disturbance of current ground water monitoring locations will be required. Should recontouring operations demonstrate that the ground surface adjacent to current monitoring locations be either significantly cut or filled, then the wells will be cut or extended as required to maintain the monitoring station.

7.31.22. SURFACE WATER MONITORING

A surface water monitoring plan, based upon the PHC determination, as described in Appendix I and Section 7.28, and baseline hydrologic and geologic information has been developed. All eight (8) surface water monitoring sites are monitored quarterly for the parameters of Operational Monitoring in Tables 7.31.2-1, 7.31.2-2, 7.31.2-4 and 7.31.2-6. ~~1 of the Division's Guidelines for Establishment of Surface and Ground Water Monitoring Programs for Coal Mining and Reclamation Operations.~~ Monitoring at any UPDES point discharge location will comply with the Utah Division of Water Quality Utah Pollution Discharge Elimination System (UPDES) permits. ~~Utah Division of Environmental Health and National Pollution Discharge Elimination System (NPDES) permits.~~ Site locations are shown on Dwg. E9-3451.

Analytical results from each quarterly sample will be submitted to the Division. If the analysis of any UPDES surface water sample indicates noncompliance with permit conditions, the operator will promptly notify the Division and immediately take action as required to bring the effluent into compliance. Surface water monitoring will proceed through mining and continue during reclamation until bond release, or until it is demonstrated that disturbance to the prevailing hydrologic balance in the permit and adjacent areas has been minimized and material damage to the hydrologic balance outside the permit area has been prevented, and water quantity and quality are suitable to support the approved post-mining land use, in accordance with Division Guidelines for post-mining monitoring.

Baseline parameters for surface waters will be collected as specified in Tables 7.31.2-1, 7-31.2-2, and 7.31.2-~~6. the year preceding five year permit renewal.~~

Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of surface water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed. Overall surface water sampling guidelines which may improve the quality of water samples being taken include:

- Surface water samples should generally be collected in a well-mixed portion of the stream above the weir by submerging the sample bottle with the opening pointed upstream. It is important not to disturb bottom sediments while taking these samples. The bottle however must be removed immediately upon filling so as not to dilute any fixing agent which may have been placed in the bottle by the chemical laboratory.

- Oil and grease samples should be collected by submerging only a portion of the bottle opening beneath the water surface. Since oil and grease rise to the surface, distorted samples can be collected by totally submerging the opening of the sample bottle.

Water flow measurements taken at the majority of all surface water stations include the implementation of the "float" method for estimating flow rates. This method approximates the channel width and depth, then records the time it takes a stick or other floating material to pass between two points a known distance apart. The total estimate is then reduced to approximately 70% of the calculated value to adjust for naturally occurring velocity gradients with channel depth. The only measuring device wherein the flow is recorded is at the concrete weir located at the river pump house. Flow recorded at this point is used for recording flow at station SW-2.

As required by the regulations surface water monitoring will be completed quarterly for all surface water stations. Historic monitoring has included monthly monitoring at Station SW-3 and semi-annual monitoring at stations SW-1, SW-2, SW-4, SW-5, SW-6, SW-7, and SW-8. In addition, attempts will be made to collect water quality samples during local precipitation events from the silt fence and straw bale area near surface water station SW-4 when practical and feasible. These samples will be taken when adequate flow exists to collect a representative sample without the introduction of additional sediments or contaminants throughout the sampling process. A list of surface water sampling parameters was given previously in Table 7.24-5. Baseline parameters for surface waters will be collected as specified in Tables 7.31.2-1, 7-31.2-2, and 7.31.2-6~~. the year preceding five year permit renewal.~~

The reclamation plan which has been submitted for surface water runoff and conveyance includes the installation of two drainage diversion ditches or channels upstream of the Upper and Lower Refuse ponds as described within Section 7.60. The long term value of these two permanent channels is to 1) divert surface water runoff away from the refuse ponds thereby reducing the amount of materials which could possibly be leached from soils found within the ponds, and 2) to contain, control, and reduce the amount of potential erosion from vegetated pond surfaces.

A slight modification of the water quality monitoring plan is proposed to be implemented at the time of reclamation as follows. First, Surface water quality monitoring stations SW-5 and SW-6 will be eliminated due to recontouring activities. Second, water quality samples from the Clearwater Pond will be collected from the ponded water surface at the approximate location of SW-7 and not from the discharge structure itself. Third, a new water quality monitoring station will be added (SW-9) to the monitoring plan at the time of reclamation (if practical and feasible) in order to obtain water quality data from reclaimed refuse pond surfaces. This station will be installed using design technologies and methodologies reasonably and feasibly available at the time of reclamation.

APPENDIX J

Cost of Reclamation

October 31, 2017

WELLINGTON PREPARATION PLANT

C/007/0012

Bond Amount

WELLINGTON PREP PLANT C/007/012

SUMMARY

Bonding Calculations

Direct Costs		
Subtotal Demolition and Removal	$59,379.00	
Subtotal Backfilling and Grading	$3,172,036.00	
Subtotal Revegetation	$417,420.00	
Direct Costs in 2017 Dollars	$3,648,835.00	
Indirect Costs		
Mob/Demob	$364,884.00	10.0%
Contingency	$182,442.00	5.0%
Engineering Redesign	$91,221.00	2.5%
Main Office Expense	$248,121.00	6.8%
Project Mainagement Fee	$91,221.00	2.5%
Subtotal Indirect Costs	$977,889.00	26.8%
Total Cost	**$4,626,724.00**	**2017 Dollars**
Escalation factor		0
Number of years		5
Escalation	$0.00	
Reclamation Cost Escalated	$4,626,724.00	2022 Dollars
Dollar Year 2017		
Bond Amount (rounded up to next $1,000)	**$4,627,000.00**	
Bond Posted 4/16/13,updated 10/31/17	$4,142,000.00	
Difference Between Cost Estimate and Bond	**-$485,000.00**	
Percent Difference	**-10.48%**	

Demolition

Description	Cost
Refuse Pipeline 01	11662
Pumphouse 02*	0
Powerline East 03	7750
Clear Water Dike 04	20153
Wash Plant 05	4005
* Column Flotation Cells 06	0
Conveyor Belts 07	0
Office 08	0
Diesel 09	1707
* Pipelines 10	474
Slurry Feed Tank and Pump 11*	0
Foundations12	13628
Total	59379

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Refuse Pipeline 01																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.38	/CF						64230					CF		64230	CF	0
	Structure's Vol. Demolished										833					CY	0.35	833	CY	0
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			0
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Pipe's Demolition																			
	Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.38	/CF	6800										LF		6800	LF	0
	Pipe's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			0
	Foundation's Demolition																			
	Demolition Cost	Concrete demo/ load/ dump**	03 05 05.10 0060	167	/CY						62					CY		62	CY	10354
	Foundation's Vol. Demolished																1.3	81	CY	
	Loading Cost	Front end loader 3 CY	31 23 16 42 1300	2.21	/CY													81	CY	179
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23 17 0320	3.74	/CY													81	CY	303
	Disposal Costs	On site disposal	02 41 16 17 4200	10.2	/CF													81	CY	826
	Subtotal																			11662
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			11662

Slurry pipe has been removed and salvaged (see Attachment, Photo A)
Pipeline Foundations (see Attachment, Photo B)
See Map A (attached) for photo locations

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Pumphouse 02*																			
Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.35	/CF						0					CF		0	CF	0
Structure's Vol. Demolished										0					CY	0.35	0	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Floor's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	13.1	/CY						0					CY		0	CY	0
Floor's Vol. Demolished																1.3	0	CY	
Loading Cost	Front end loader 3 CY			/CY													0	CY	0
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY													0	CY	0
Disposal Costs	On site disposal	02 41 16.17 4200	10.2	/CY													0	CY	0
Subtotal																			0
Foundation's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	13.1	/CY						0					CY		0	CY	0
Foundation's Vol. Demolished																1.3	0	CY	
Loading Cost	Front end loader 3 CY			/CY													0	CY	0
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY													0	CY	0
Disposal Costs	On site disposal	02 41 16.17 4200	10.2	/CY													0	CY	0
Subtotal																			0
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			0

* Pumphouse has been removeed and reclaimed (see Photo F)
See Map A (attached) for photo locations.

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Powerline East 03																			
Structure's Demolition Cost	Powerpole	02 41 13.80 0100	310	EA										25	EA		25	EA	7750
Structure's Vol. Demolished										0					CY	0.35	0	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			7750
Conductort 's Disposal Cost																			
Dismantling Cost																			
Conductor 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			0
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			7750

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diamete	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Clear Water Dike 04																			
Structure's Demolition Cost																			
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			
Building 's Disposal Cost*	410 H. P. (D9)	01 54 33 20 4360	2368	/day										0.2	DAY		0.2	DAY	474
Dismantling Cost																			
Building 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			474
Fresh Water Line's Demolition Cost	Pipe removal 24 inch	02 41 13.38 0500	19.8	/FT	200										FT		200	FT	3960
Demolition Cost																			
Fresh Water Line's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			3960
Intake Tower																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						62					CY		62	CY	10354
Intake Tower's Vol. Demolished																1.3	81	CY	
Loading Cost	Front end loader 3 CY	31 23 16 42 1300	2.21	/CY													81	CY	179
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip	31 23 23 17 0320	3.74	/CY													81	CY	303
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													81	CY	923
Subtotal																			11759
Spillway	Pipe removal 24 inch	02 41 13.38 0500	19.8	/FT	200										FT		200	FT	3960
Demolition Cost																			
Spillway's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			3960
Total																			20153

* Onsite dozer equipment cost = rental cost + operating cost or $2368/day

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Wash Plant 05																			
Structure's Demolition Cost*	Steel Bld. Large	02 41 16.13 0020	0.35	/CF	90	70	50								FT		315000	FT	0
Structure's Vol. Demolished										4083					CY	0.35	4083	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																	4083	CY	
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Floor's Demolition																			
Demolition Cost**	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY	90	70	0.5								FT		117	CY	0**
Floor's Vol. Demolished**																1.3	152	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													152	CY	0
Subtotal																			0
Foundation's Demolition																			
Demolition Cost***	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						22					CY		22	CY	3674
Foundation's Vol. Demolished																1.3	29	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													29	CY	331
Subtotal																			4005
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			4005

This is the old facilities area.
* Wash plant has been removed (see Attachment, Photo C)
** This concrete structure has been re-enginnered, reinforced and is now part of rail system, track and transloading operation and will not be reclaimed (see Attachment. Photo D).
*** Remaining concrete (see Attachment, Photo E)
See Map A (attached) for photo locations.

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
* Column Flotation Cells 06																			
Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.35	/CF			42	8						4	FT		0	FT	0
Structure's Vol. Demolished										109					CY	0.35	109	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																	109	CY	
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Floor's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060		/CY	40	40	0.5								FT		0	CY	0
Floor's Vol. Demolished																1.3	0	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200		/CY													0	CY	0
Subtotal																			0
Foundation's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060		/CY						9					CY		0	CY	0
Foundation's Vol. Demolished																1.3	0	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200		/CY													0	CY	0
Subtotal																			0
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			0

* The Covol Wash Plant has been dismantled and the site reclaimed (Photo G).
See Map A (attached) for photo locations.
(This sheet remains herein to retain historical information).

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Conveyor Belts 07																			
Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.35	/CF	800	5	5							1	FT		0	CF	0
Structure's Vol. Demolished										259					CY	0.35	0	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																	0	CY	
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Foundation's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						37					CY		0	CY	0
Foundation's Vol. Demolished																1.3	0	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													0	CY	0
Subtotal																			0
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			0

* The Covol Wash Plant has been dismantled and the site reclaimed (Photo G).
See Map A (attached) for photo locations.
(This sheet remains herein to retain historical information).

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Office 08																			
Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.35	/CF	800	5	5							1	FT		0	CF	0
Structure's Vol. Demolished										259					CY	0.35	0	CY	
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																	259	CY	
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			0

All of the Covol Site has been dismantled, salvaged and reclaimed (Photo G).
See Map A (attached) for photo locations.
(This sheet remains herein to retain historical information).

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diamet	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Diesel 09																			
	Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.35	/CF						1340				1	CF		1340	CF	0
	Structure's Vol. Demolished										17					CY	0.35	17	CY	
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																	17	CY	
	Subtotal																			0
	Equipment 's Disposal Cost																			
	Dismantling Cost																			
	Equipment 's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Floor's Demolition																			
	Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY	17	17	0.5								FT		5.4	CY	902
	Floor's Vol. Demolished																1.3	7	CY	
	Loading Cost	Front end loader 3 CY			/CY															
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
	Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													7	CY	80
	Subtotal																			982
	Floor's Demolition																			
	Demolition Cost																			
	Floor's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Foundation's Demolition																			
	Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						4					CY		4	CY	668
	Foundation's Vol. Demolished																1.3	5	CY	
	Loading Cost	Front end loader 3 CY			/CY															
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
	Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													5	CY	57
	Subtotal																			725
	Total																			1707

* For the benefit of doubt, we left these costs in the spreadsheet (we not sure when this floor and foundation is located).
Total volume if present would be 5.4 CY not 145 CY.

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
* Pipelines 10																			
Structure's Demolition Cost	Pipe removal 12 inch	02 41 13.23 2900	11.3	/FT	5800										LF		5800	LF	0
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Equipment Cost																			
Demolition Cost	Backhoe 5/8 CY capacity	01 54 33 0400	268	/da										1	DAY		1	DAY	268
Concrete	1 YD	03 31 13 0020	124																124
Concrete	Concrete short load costs	03 31 13.35 1520	82																82
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			474

* We assume this is the underground pipeline is the one from the Clearwater Pond to the Dryer Pond. We have reviewed early U.S. Steel and NEICO reclamation costs (1996 & 2000) of which had no costs for removal of the pipeline. Furthermore, it is not within the SMCRA bond area.
As stated in previous submittals to DOGM, the current owner considers the ability to move water from from the east to the west side has a valuable asset for current and future operations of the facility.
Additionally tranfer of this water is an approved water right throught the State of Utah.
Finally, in the extremely unlikely event the water pipeline were to be reclaimed through SMCRA, the reclamation would be to stop the water flow at its source near the pumphouse area by plugging the upstream end with cement grout.

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Slurry Feed Tank and Pump 11*																			
Structure's Demolition Cost	Steel Bld. Large	02 41 16.13 0020	0.38	/CF						21200					CF		21200	CF	0
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			0
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Floor's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						5					SY		5	SY	0
Floor's Vol. Demolished																1.3	6	CY	
Loading Cost	Front end loader 3 CY			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													6	CY	0
Subtotal																			0
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Foundation's Demolition																			
Demolition Cost	Concrete demo/ load/ dump	03 05 05.10 0060	167	/CY						10.5					CY		10.5	CY	0
Foundation's Vol. Demolished																1.3	14	CY	
Loading Cost	Front end loader 3 CY			/CY															
Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. rnd. trip			/CY															
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY													14	CY	0
Subtotal																			0
Total																			0

All of the Covol Site has been dismantled, salvaged and reclaimed (Photo G).
See Map A (attached) for photo locations.
(This sheet remains herein to retain historical information).

Description	Materials	Means Reference Number	Unit Cost	Unit	Length ft	Width ft	Height ft	Diameter in	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Foundations12																			
Structure's Demolition Cost																			
Structure's Vol. Demolished																			
Rubble's Weight (exclude steel)																			
Truck's Capacity																			
Haulage																			
Transportation Cost Non Steel Truck																			
Transportation Cost Non Steel Drive																			
Disposal Cost Non Steel																			
Steel's Weight																			
Truck's Capacity																			
Haulage																			
Transportation Cost Steel Truck																			
Transportation Cost Steel Truck Drive																			
Disposal Cost Steel																			
Subtotal																			
Equipment 's Disposal Cost																			
Dismantling Cost																			
Equipment 's Vol. Demolished																			
Loading Costs																			
Transport Costs																			
Disposal Costs																			
Subtotal																			
Concrete Demolition*																			
Demolition Cost	Foundation demo/ load/ dump	02 41 16.17 0440*	1.57	/SqFt	30	40	10	12		3800	SqFt			141	CY				5966
Demolition Cost	Foundation demo/ load/ dump	02 41 16.17 0440*	0.99	/SqFt	10	10	6	6		440	SqFt			8	CY				436
Demolition Cost	Foundation demo/ load/ dump	02 41 16.17 0440*	0.99	/SqFt	30	15	15	6		2370	SqFt			44	CY				2346
Transportation Cost																			
Disposal Costs	On site disposal	02 41 16.17 4200	11.4	/CY	70	65	31			193	CY			193	CY				2200
Subtotal																			
Railroad Track Removal	Tie and track removal	02 41 13.33 3500	13.4	L.F.	200														2680
Demolition Cost																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			13628

* The CY in 2013 was calculated incorretly This has been revised here.
Cost of 12" concrete $1.43 plus 10% added for average reinforcing (Ref. 02 41 16.17 2600)

Earthwork

	in 2017 costs
	Cost
West Side	
Plant Sediment Pond 001	$ 307
Road Pond 002	$ 3,891
Heat Dryer Pond 003	$ 341
Site Grading West of Price River 204	$ 11,894
Cover Coarse Refuse Pile with Topsoil 205	$ 45,072
East Side	
Coarse Slurry Pond Pile to Upper Slurry 206	$ 716,967
Upper and Lower Refuse Basin 004	$ 2,090,610
Grade Upper Refuse Dike 005 to 5:1 slope	$ 5,189
Grade Crest 006 of Lower Refuse Dike	$ 19,525
Grade Diversion Ditch West of River 007	$ 2,594
Pumphouse and Slurry Pipeline Area Topsoil 008	$ 3,280
Grade & Rip Topsoil Borrow Area 009	$ 26,137
Support 013	$ 246,229
Total	**$ 3,172,036**

`

	Cost Reference																
	Year	Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Plant Sediment Pond 001																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						0.9	HR	$307.00
																	$ 307

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Road Pond 002																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		3410	lcy	298.8	lcy/hr	11.4	HR	$3,891.00
Subtotal																	$ 3,891

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Heat Dryer Pond 003																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		434	lcy	597.6	lcy/hr	1	HR	$341.00
Subtotal																	$ 341

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Upper and Lower Refuse Basin 004																	
with 4 feet of Cover																	
Portion from Borrow Area E																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	4	2169.92		610700	lcy	1826	lcy/hr	334.4	HR	$725,621.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						334.4	HR	$114,147.00
Portion from Borrow Area D + G																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	4	2169.92		229338	lcy	2400	lcy/hr	95.6	HR	$207,444.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						95.6	HR	$32,633.00
Portion from Borrow Area H + I																	
988G EROPS 8.2 CY 475 HP (2005)	2H 2017	§9-62	13070	92.25	0.1	81	264.16	2	528.33		168702	lcy	747	lcy/hr	225.8	HR	$119,297.00
6X4 70,000lbs 12-18 CY 400 HP	2H 2017	§20-11	4560	46.7	0.1	77.15	157.02	16	2512.32						225.8	HR	$567,282.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						225.8	HR	$77,077.00
Portion from Clearwater & Lower Refuse Dikes																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	4	2169.92		224068	lcy	2276	lcy/hr	98.4	HR	$213,520.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		180700				98.4	HR	$33,589.00
Subtotal																	$ 2,090,610

Note: this sheet includes what use to be sheet cover upper Lower Refuse Basin with Topesoil 208 it was the Clearwater lower refuse dikes portion.

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Grade Upper Refuse Dike 005 to 5:1 slope																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		11648	lcy	766.92	lcy/hr	15.2	HR	$5,189.00
Subtotal																	$ 5,189

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Grade Crest 006 of Lower Refuse Dike																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		43904	lcy	766.92	lcy/hr	57.2	HR	$19,525.00
Subtotal																	$ 19,525

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Grade Diversion Ditch West of River 007																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35		5828	lcy	766.92	lcy/hr	7.6	HR	$2,594.00
Subtotal																	$ 2,594

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Pumphouse and Slurry Pipeline Area Topsoil 008																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	2	1084.96		3000	lcy	1328	lcy/hr	2.3	HR	$2,495.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						2.3	HR	$785.00
Subtotal																	$ 3,280

The LCY volumes were retained from previous reclamation costs and approved plans.

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Grade & Rip Topsoil Borrow Area 009																	
Rip/Grade Topsoil Borrow Area																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	2	682.71		135520	lcy	3818	lcy/hr	35	HR	$23,895.00
Multi-Shank Ripper 360-519 P	2H 2017	§9-99	3180	11.05	0.1		32.03	2	64.06		135520	lcy	3818	lcy/hr	35	HR	$2,242.00
Subtotal																	$ 26,137

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Site Grading West of Price River 204																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						25	HR	$8,534.00
grading was done on the ground																	
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						9	HR	$3,072.00
Multi-Shank Ripper 360-519 P	2H 2017	§9-99	3180	11.05	0.1		32.03	1	32.03						9	HR	$288.00
Subtotal																	$ 11,894

Note: This grading was nearly completed for reclamation during demolition & removal.

205	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Cover Coarse Refuse Pile with Topsoil 205																	
4 feet of Cover, from area H																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	2	1084.96		43300	lcy	1370	lcy/hr	31.6	HR	$34,285.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						31.6	HR	$10,787.00
Subtotal																	$ 45,072

Note: For lcy needed refer to Chapter 2, Table 2.41-1

	Cost Reference Year	Cost Reference Page	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Coarse Slurry Pond Pile to Upper Slurry 206																	
657EP-P (2006) 550 HP 32-44 CY EROPS	2H 2017	§9-84	33735	227.85	0.1	81	542.48	4	2169.92		694800	lcy	2434	lcy/hr	285.5	HR	$619,512.00
D9R Semi-U EROPS 410 HP (2005)	2H 2017	§9-88	20950	117.65	0.1	81	341.35	1	341.35						285.5	HR	$97,455.00
Subtotal																	$ 716,967

Note: The LCY is consistent with previously approved reclamation plans.

	Cost Reference		Equipment	Hourly	Equipment	Operator's	Hourly	Number	Total						Equip. +		
	Year	Page	Cost	Operating Costs	Overhead	Hourly Wage Rate	Cost	of Men or Eq.	Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Labor Time/Dis.	Units	Cost
Support 013																	
5,000 gal H2O truck Diesel	2H 2017	§20-18	5450	40.85	0.1	66.6	145.60	1	145.6						1006	HR	$146,474.00
Pickup Truck Diesel Crew 4x4 1 ton	2H 2017	§20-20	1095	9.15	0.1	0	16.91	1	16.91						1006	HR	$17,011.00
Foreman Average, Outside	Back of RSMeans					82.25	82.25	1	82.25						1006	HR	$82,744.00
Subtotal																	$ 246,229

Revegetation

Revegetation

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Fertilizer	Fertilizer Hydro Spread/water soluble 1.5#	32 01 90.13 0180	5	/MSF					421						AC		18339	MSF	$ 91,694.00
Light Disk Harrow	Grader Rear Ripper, 180 HP ideal condition inste	31 23 16.32 2510	3.14	BCY					421						AC	1	2038	BCY	$ 6,398.00
Seeding	Atriplex-Hilaria	Wellington1	430.88	$/AC					421						AC		421	AC	$ 181,400.00
Mulch	Hay bale	Reveg007	61.6	/ton					421					2	AC		842	ton	$ 51,867.00
Mulch	Mulch Application	Wellington 003	6.12	/AC					421						AC		421	AC	$ 2,577.00
Subtotal																			333936
Revegetation																			
100% Revegetation Rate																			$ 83,484.00
Subtotal																			83484
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Concrete Demolition																			
Demolition Cost																			
Concrete's Vol. Demolished																			
Loading Cost																			
Transportation Cost																			
Disposal Costs																			
Subtotal																			
Total																			$ 417,420.00

Photos

Appendix J Attachment

October 31, 2017

Photo A: Pipeline (Removed) Area [see Demolition, Refuse Pipeline 01]

Photo B: Remaining Pipeline Foundation [see Demolition, Refuse Pipeline 01]

Photo C: Removed Wash Plant Buildings & Concrete [see Demolition, Wash Plant 05]

Photo D: Redesigned, Engineered & Reinforced [not to be reclaimed (see Floor Demolition)]

Photo E: Remaining Concrete of Old Wash Plant [see Demolition]

Photo F: Reclaimed Pumphouse Area [see Demolition, Pumphouse 02]

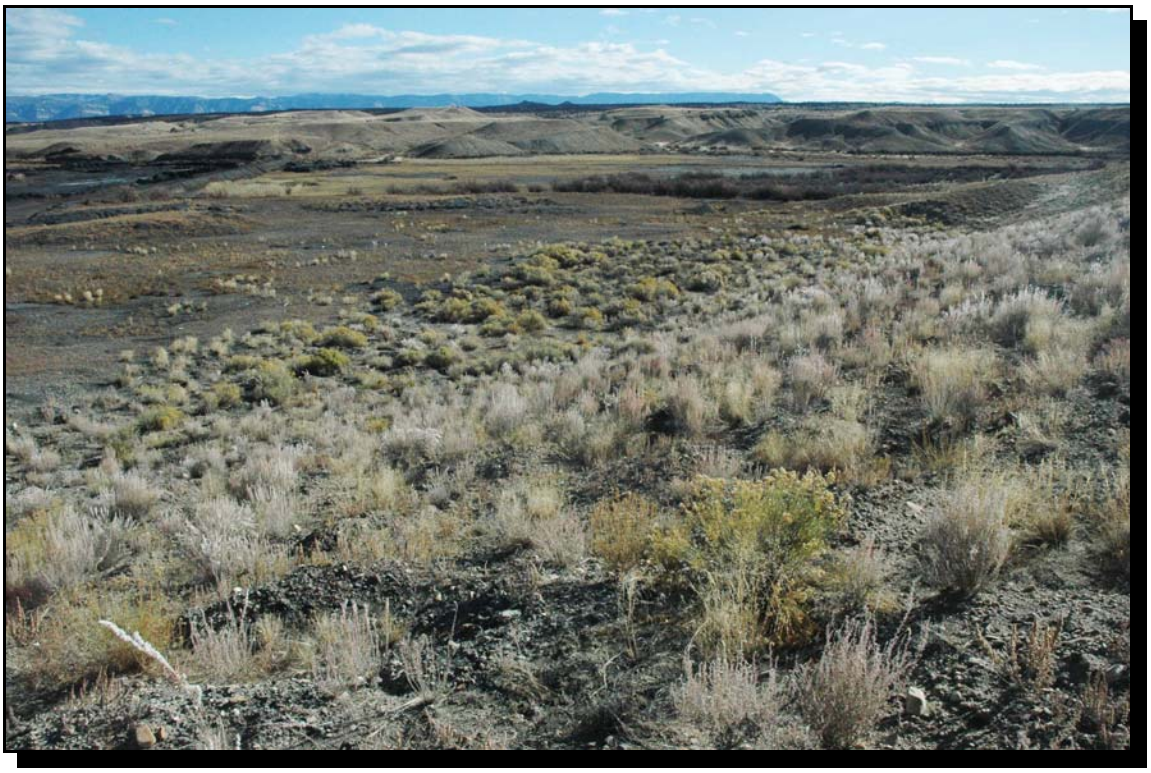
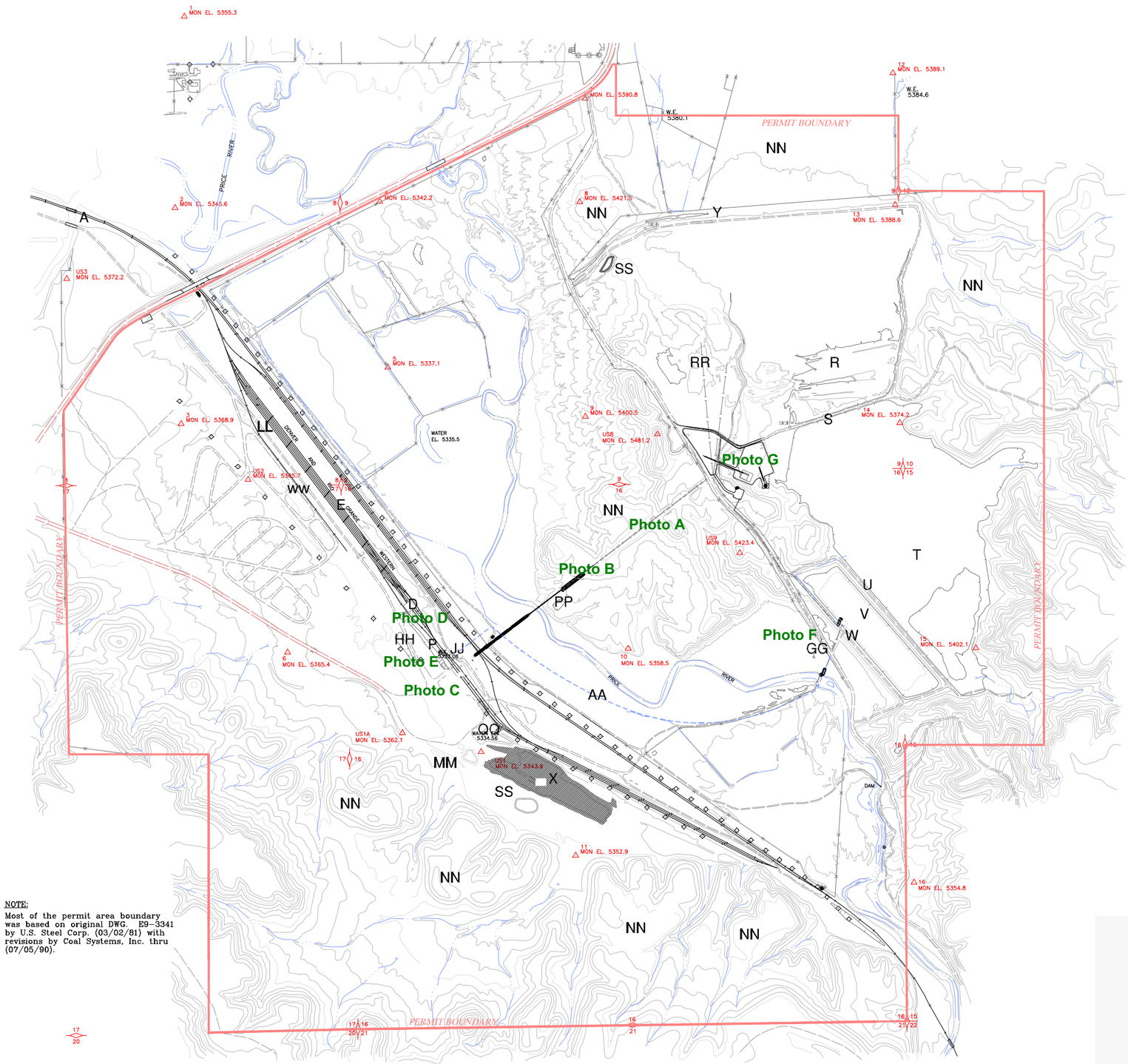


Photo G: Reclaimed Covol Wash Plant Area [see Demolition, Column Floatation Cells]

Photo Location Map

Appendix J Attachment

October 31, 2017



NOTE:

Most of the permit area boundary was based on original DWG. E9-3341 by U.S. Steel Corp. (03/02/81) with revisions by Coal Systems, Inc. thru (07/05/90).

NORTH

EXISTING FACILITIES

A. BRIDGE
D. TRACK HOPPER/RAW COAL CONVEYOR
E. PLANT RAILROAD SYSTEM
P. AUXILIARY POND
R. UPPER REFUSE BASIN
S. UPPER REFUSE DIKE
T. LOWER REFUSE BASIN SEDIMENT POND
U. LOWER REFUSE DIKE
V. CLEARWATER POND
W. CLEARWATER DIKE
X. COARSE REFUSE PILE
Y. SIAPERAS DITCH

AA. CLEARWATER PIPELINE (FROM PREV. DWG. E9-3341 CERT. 06/28/84)
GG. RIVER WATER COLLECTION WELL
HH. ROAD POND
JJ. DRYER POND
LL. NATURAL GAS PIPELINE
MM. DIVERSION DITCH (UD-1 & UD-1A)
NN. TOPSOIL BORROW AREAS
PP PIPELINE SLURRY SEDIMENT POND
QQ. PLANT SEDIMENT POND
RR. COARSE SLURRY POND REFUSE PILE(TEMPORARY)
SS. TOPSOIL STOCKPILE
WW. TRANSLOADING AREA

FACILITIES REMOVED DURING RECLAMATION - NO LONGER SHOWN ON MAP

B. ELECTRIC SUBSTATION
C. COAL CLEANING PLANT BUILDING
F. HEAT DRYER & CONVEYOR
G. SLURRY PIPELINE & SUPPORT STRUCTURES
I. COURSE REFUSE BIN
J. OFFICE BUILDING
K. STOREHOUSE
L. SHOP
M. COAL CARBONIZATION LAB
N. OIL STORAGE BUILDING
O. PUMPHOUSE
Q. HAUL ROAD
Z. COAL STORAGE, PROCESSING & LOADING AREA

BB. MATERIAL & EQUIPMENT STORAGE AREA
CC. SCRAP METAL STORAGE AREA
EE. NON-COAL WASTE HOLDING AREA
FF. OIL DRUM STORAGE AREA
II. POND FILL PILE
KK. POND FILL PILE
OO. FUTURE TOPSOIL STRIPPING AREA
TT. TRUCK DUMP
UU. HOPPER AND FEED BELT FOR LOADING
VV. TRUCK SCALE AND SCALE HOUSE
XX. SEPTIC TANK & DRAIN FIELDS (as per USS 11-21-59 E91296)

Photograph Locations
Appendix J
October 31, 2017

PRICE RIVER TERMINAL

MT. NEBO SCIENTIFIC, INC.
RESEARCH AND CONSULTING

DRAWN	JON MAGENO
CHECKED	
DATE	12-7-93
SCALE	1"=500'

MAP A