



State of Utah

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DIVISION OF OIL, GAS AND MINING

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TO: File

THRU: Joe Helfrich, Permit Supervisor *ORZ for Joe Helfrich*

FROM: Wayne H. Western, Senior Reclamation Specialist *W HW*
Sharon Falvey, Reclamation Hydrologist *S KF*
Robert Davidson, Soils Reclamation Specialist *RAO*

RE: Wellington Proposed Modular Coal Fines Wash Plant Modifications 9/05/97, 9/30/97, and 10/2/97, Nevada Electric Investment Company, Wellington Preparation Plant, ACT/007/012-97G #2, File #2, Carbon County, Utah

SUMMARY:

The Permittee submitted this amendment to add a truck loadout, slurry tank, and a north west tailings impoundment berm, to the previously approved Modular Coal Fines Wash Plant area. This plan meets minimum regulatory requirements for the construction of the proposed structures. Operations, are not presented with this amendment, therefore, this approval is based on construction only.

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

Analysis:

The 97G amendment, contains soil resource information for three separate areas that will be disturbed in conjunction with the coal fines wash plant. These areas are shown on Figure 2.40-1, Soil Test Pits and Refuse Delineation, and include:

- Coal Fines Wash Plant - Vegetation Test Plots
- Flotation Cell Pad - Upper Gerst Soils Knoll and Side slopes
- Slurry Feed Tank Pad - Lower Gerst Soils Area

Coal Fines Wash Plant - Vegetation Test Plots

The old vegetation test plots were sampled on July 17, 1997. The test plots consisted of 6 to 12 inches of topsoil over either coarse-coal refuse or no coarse-coal refuse. Two pits were dug to obtain soil and coarse-coal refuse samples for analysis. No profile descriptions were obtained other than to note the thickness of the soil treatments. Analysis of the topsoil materials showed elevated levels of Boron (12-14 mg/Kg) which exceed DOGM's guidelines for topsoil and overburden. Analyses results are also provided for the coarse refuse and refuse samples taken from each of the two sample pits (see Table 2.40-1). Both the coarse refuse and refuse exceeded DOGM's guidelines for selenium and boron.

Flotation Cell Pad - Upper Gerst Soils Knoll and Side slopes

A soil survey was conducted on August 12, 1997, for the upper small knoll and associated Side slopes. This top, flat area appears to have been previously disturbed and altered by removal of soil materials since the Gerst soil was uncharacteristically shallow. Four pits were logged and excavated to 60 inches with profile descriptions; pits 1 and 2 were on top with pits 3 and 4 on the Side slopes (see Figure 2.40-1). Also, a line drawn on the map demarcates the coal refuse from the Gerst soils. Complete soil profile descriptions are provided for each pit. Composite samples were taken for Pits 1 and 2; physical and chemical analyses are provided in Table 2.40-2. The soils meet all DOGM parameters for topsoil and overburden.

Slurry Feed Tank Pad - Lower Gerst Soils Area

A stipulation has been made to survey and sample the Gerst soils at the slurry tank area prior to disturbance and to substantiate soil salvage amounts.

Findings:

As determined in the analysis section of this TA, approval of the plan is subject to the following Permit Conditions. Accordingly, the permittee has committed to comply with the requirements of the following Permit Conditions, as specified, and in accordance with the requirements of:

R645-301-220 and R645-301-120, Soil Survey - JBR Environmental Consultants, Inc., will survey at least one additional soil test pit at the Slurry Tank site. This soil pit will be strategically located in the area planned for surface disturbance.

Soil Characterization - Soil survey characterization results will be forwarded to the Division prior to disturbance and soil salvage.

Soil Sampling - The soil pit will be sampled and analyses provided as

outlined by the Division's guidelines for topsoil and overburden¹. Results will be provided when they are received back from the laboratory.

Updated MRP - The MRP will be updated accordingly, including the descriptive text, soil profile description, soil identification, soil pit location on the soil map (Figure 2.40-1).

HYDROLOGIC INFORMATION

Surface Water Resources

Water Rights

The application does not provide a description of which water rights are being leased from EARTHCO by Covol. The water right number, the timing of use, and the type of use needs to be described. This submittal is adequate at this time because, no water is proposed to be used in association with this amendment.

Probable Hydrologic Consequences

The PHC discussions on; Hydrocarbon Products, and the Spill Prevention and Control Plan, are considered applicable to the proposed facilities. The permittee committed to construct concrete containment pads for hydrocarbon products. This will minimize potential impact to ground and surface water quality.

The application states if the tailings impoundment "...is not constructed prior to mining, tails will be placed in the Clear Water Pond...". Otherwise tailings will be placed in the impoundment area. Approval for tailings placement cannot be granted prior to development of the PHC for operations dealing with processing and waste disposal.

Water Monitoring

No changes to the operation plan are proposed. Monitoring will continue under the presently approved plan. As soon as slurry or water transport occurs behind the North West Tailings Dike the monitoring of the Siaperas Ditch and new wells will need to be implemented.

Findings:

This amendment meets the minimum requirements for the proposed construction.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Analysis:

Existing Structures and Facilities Maps

Drawing T1-9597 shows the location of the modular tailings preparation facility. The location of the flotation cell pad, screening pad, stockpiles, and buildings are shown on the drawing.

Surface Water Resource Maps

Exhibit 712a, submitted with this amendment, shows the location of the proposed Tailings Water Line and a water supply well. The supply well, located near the river pump house, is constructed within the Price River water table. A pump will be installed in the well; however, no pumping from the well is proposed with this amendment. Water rights associated with this source must be identified and approved prior to using this source. No disturbance is proposed to occur associated with the pump placement.

Contour Maps

Existing and proposed contour information for the wash plant is provided on Sheet 712a. It is difficult to see all existing contour information for the newly disturbed area because the proposed contour lines overlap the existing contour lines, however, this area is small and the information should be adequate to determine approximate original contour for reclamation purposes. Other maps may also show the existing configuration at a larger scale.

Drawing T1-9597 is a detailed map of the wash plant area. The drawing shows the contour elevations for the proposed site. The contour interval is 2 feet.

Findings:

The amendment meets the minimum requirements for these sections.

RELOCATION OR USE OF PUBLIC ROADS

Analysis:

The clean coal stockpile, waterlines and power poles will be located within 100 feet of Farnham Road. The Permittee will protect the public by fencing the site. Access to the

wash plant will be through gates. There is enough room between the road and the fence for the public to pull off the road if needed. Should a car go off the road the wash plant facility would not constitute an unusual hazard. The public would be a little risk from the coal wash plant.

Findings:

The amendment meets the minimum requirements for these sections

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Analysis:

Facilities and Structures

In Section 5.27 of the MRP the Permittee states:

Future

A modular coal fines wash plant, truck loadout, slurry tank, NW tailings impoundment and retention berm, power lines and above ground water and tailings pipelines are to be constructed for the coal refuse ponds area. This use is entirely consistent with all previous activities that have occurred and been permitted in the past. Site grading, diversions and sediment control measures will direct any runoff that may occur into the Lower Refuse Pond or into Alternative Sediment Control Areas (ASCA's) 4 & 5. Practically no growth medium exists where the wash plant is to be built. The small quantity of topsoil required for reclamation will be borrowed as described in the current MRP. The majority of the facilities will be located on the previously disturbed coarse refuse pile. Two 12 inch diameters above ground steel pipelines will carry water along Franham Road from the supply well and Clear Water Pond. One 12-inch tailings pipeline will carry tailings across the coarse refuse pile to the NW tailings impoundment. A tailings impoundment and retention berm must be constructed prior to mining in order to provide tailings storage in the upper coal refuse basin area. If this impoundment is not constructed prior to mining, tails will be placed in the Clear Water Pond until the northwest area will be place in the Clear Water Pond until the northwest area of the upper refuse pond could begin receiving tails. Electric power lines will be reinstalled in the existing corridors from the main plant. They will also be installed parallel to the waterlines along Farnham Road to pumps at the supply well and Clear Water Pond.

Existing Structures

U. Lower Refuse Dike

Present Use - The impounding structure that forms the lower refuse pond basin. The existing drain pipes will be rehabilitated.

V. Clearwater Pond

Present Use - Will remain to be used for sediment control at final reclamation. A few feet of coal fines have accumulated in the bottom of this pond and will be removed with heavy equipment prior to the introduction of any water. These fines will be stockpiled near the modular wash plant for future processing. Access will be from the north side of the pond from an existing road.

W. Clearwater Dike

Present Use - The impounding structure for the Clear Water Pond basin. The existing drain pipes and decant structures will be rehabilitated.

The Permittee proposes to construct a modular coal fines wash plant and tailings berm. The tailings berm will be used to impound tailings during the startup phase of the coal fines recovery process. The new facilities include a flotation cell, screening pad, truck loadout, and coal stockpiles. The new buildings and facilities will be constructed on or near ground that has been previously disturbed for coal mining activities. The new facilities will not impose a safety hazard to the public. The Permittee has met all the regulatory requirements for constructing the facilities. The new facilities are shown on Drawings T1-9597 and Drawing 712a.

COVAL will build the new facilities under an agreement with the Permittee. The Division has not yet granted approval to the Permittee to operate the new facilities. The operation plan for the modular wash plant will be addressed in amendment 97H.

Findings:

The amendment meets the minimum requirements for these sections.

COAL RECOVERY

Analysis:

In Section R645-301-522 of the proposed amendment the Permittee states:

Refuse material (fines) was deposited on the Wellington site by previous owners who conducted coal cleaning activities. The current plan describes the slurry ponds to be reclaimed by burial with coarse refuse, followed by covering with topsoil, revegetation. As an alternative to this reclamation procedure the operator is currently conducting investigations as to the feasibility of removing the fines beforehand. In addition, a modular coal fines wash plant is to be constructed on the west bank of the lower coal refuse pond where the vegetation test plot currently exists. A few feet of coal fines have accumulated in the bottom of the Clear Water Pond and will be removed with heavy equipment during construction. These fines will be stockpiled near the modular wash plant for future processing. Access will be from the northwest side of the pond from an existing road. In the northwest area of the upper refuse pond, a tailings impoundment and retention berm will be constructed. Most of the erected facilities will be more than 100 feet from the County road. However, the clean coal stockpile, waterlines and power poles/lines will be within 100 feet of Farnham Road. The public will be prevented access by using fencing and gates. Note that the mining and processing of the fines will be detailed a forthcoming minor amendment.

The Operator was granted authorization by the State of Utah, Division of Oil, Gas and Mining (DOGGM) to conduct a pilot study to remove coal slurry fines from the pond areas at the Wellington site. Prior to DOGM approval (August 23, 1991) an application was submitted as a permit amendment (April 25, 1991) and deficiencies subsequently addressed (July 15, 1991). Refer to Appendix M of the Mining & Reclamation Plan (MRP) for these documents.

Amendment 97G deals with construction of the modular coal fines wash plant. The operation of the wash plant is dealt within amendment 97H. Some aspect of the construction phase overlay coal recovery and coal mining. The Permittee needs to remove coal fines from the slurry ponds in order to construct materials. The Division considers the removal and stockpiling coal fines needed to complete the construction phase as a non-mining activity. Once the plant is operational removal of coal fines will be considered a mining activity.

Findings:

The amendment meets the minimum requirements for these sections.

Impounding structures.

Analysis:

In Section 5.30 of the MRP the Permittee states:

A new tailings berm will be constructed within the North-West corner of the Upper Refuse pond to replace the existing berm (Ref. Drawing 712a). The new berm will be constructed based on the design criteria generally described in the enclosed letter and sketch from RB&G Engineers, Inc., from Mr. Brad Price to Mr. Rick Hoggan of Millcreek Engineering Company (ref Appendix NW). Existing coal fines from the North-West area will be excavated and stockpiled in the Plant North Storage Pile to allow for construction of the Proposed Northwest (NW) Tailings Pond. This Proposed Northwest Pond is located within the upper pond, and is required to separate initial plant tailings from the initial dredging operation to facilitate proper settling of tails. The existing NW berm consists of coarse refuse material placed on top of earlier coal fines and must be replaced with the new berm, as the existing berm will not provide a stable structure as coal fines are reclaimed by the dredging operation.

Additional construction activities required prior to introduction of water into the Upper and Lower ponds include grubbing and removal of all vegetation, dry excavation of a starting area in each refuse pond for initial dredge placement, rehabilitation of existing drain structures, and trimming of the shallow fines at pond edges. All coal fines material located at the pond edges at less than 4 feet of thicknesses cannot be accessed by the dredge and will be excavated and cast toward the center of the ponds to facilitate reclaim by the dredging operation. Grubbing excavations within the refuse ponds and edges material trimming will be conducted from the coal fines surface to maintain operations within the disturbed area only.

In a letter dated October 2, 1997 to Mr. Rick Hoggan from Mr. Bradford E. Price of RB&G Engineering Mr. Price states:

At your request, stability analyses have been performed for the proposed Northwest Tailings Pond Dike at the COVAL Technologies Project near Wellington, Utah. The analyses included Steady State Seepage and Seismic Pseudo Static. It does not appear that a sudden drawdown condition will exist and hence sudden drawdown analysis was not performed. The strength parameters for the embankment coarse coal refuse and the natural soils were obtained from the 1983 study and the subterranean associated borehole which were referenced in the September 5, 1997-letter.

The analyses were performed on the proposed cross section transmitted with the Sept. 5 letter. The results of the analyses are presented in the enclosed figure. The analyses were performed using computer adaption of Spencer's Method which satisfies both for and moment equilibrium. It will be observed that a Factor of Safety of 1.78 was obtained for the

Steady State Condition and a Factor of Safety of 1.29 was obtained for the Pseudo static Analysis. We believe that these factors of safety are adequate for the proposed dike and recommend that the cross section and construction recommendation made in the Sept. 5 correspondence be utilized.

The Permittee has met the minimum requirements of R645-301-533.100 that require an impoundment constructed of coal mine waste to have a static safety factor of at least 1.5 and a seismic safety factor of at least 1.2. The Division agrees with the Permittee that due to the short life of the pond and the downstream structures that the rapid drawdown is not a concern.

Findings:

The amendment meets the minimum requirements for these sections.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

The 97G amendment, contains soil operation's information for three separate areas that will be disturbed in conjunction with the coal fines wash plant. Operational soil's issues are discussed as follows:

- Coal Fines Wash Plant
- Flotation Cell Pad
- Slurry Feed Tank Pad
- General Soil Salvage Items
- Interim Revegetation Testing

Coal Fines Wash Plant

Topsoil materials from the test plots will not be salvaged because the Boron levels (12 to 14 mg/Kg) exceed DOGM's guidelines.

Flotation Cell Pad

Soil resource data indicate that five inches of salvageable topsoil is available from the 8000ft² pad area, or approximately 123 yd³ of topsoil. No soil salvage occurred on the steep Side slopes below the flotation cells.

Slurry Feed Tank Pad

Soil salvage commitments are initially based on soil resource information for the flotation cell pad area. Therefore, soil salvage commitments are stipulated and will be based on the actual soil survey results for the slurry feed tank pad area. Initial estimates before the actual survey show that 25 yd³ of topsoil will be salvaged from the 1600 ft² pad.

General Soil Salvage Items

No topsoil will be salvaged from access roads.

A third party will ensure quality control during salvage operations.

Soil salvage will be done using a small dozer to carefully remove the topsoil.

Stripped topsoil will be stockpiled at the north stockpile. The stockpile is located adjacent to an existing topsoil stockpile near the Siaperas ditch, within Watershed #7. Soil salvage will be done using a small dozer.

Interim Revegetation Testing

Because of the poor quality and low salvage volumes of the Gerst soils, interim revegetation tests will be instituted on the construction fill materials. Interim revegetation will test if the construction fills are suitable substitute topsoil for final reclamation. Steps were included for fill and seedbed preparation, mulching, fertilization, and seed application.

Findings:

As determined in the analysis section of this TA, approval of the plan is subject to the following Permit Conditions. Accordingly, the permittee has committed to comply with the requirements of the following Permit Conditions, as specified, and in accordance with the requirements of:

R645-301-230, Soil removal and salvage - Soil salvage operations will include all Gerst Soil within the Slurry Feed Tank Pad constructed affected areas under the direction of a non-biased third party soils person.

Update MRP - The MRP operations plan will be updated.

HYDROLOGIC INFORMATION

Analysis:

Diversions.

Two 12 inch diameter pipelines will carry water along Farnham Road from a supply well and the Clear Water Pond. These pipes will parallel the Farnham Road on the east side (Drawing 712 a 1 of 2). One 12-inch tailings pipeline will carry tailings across the coarse refuse pile to the NW tailings impoundment.

Subbasins for the Modular Tailings Facility Area were designated as 7A through 7G; and are shown on drawing T1-9597. The site will be graded at 2 percent to drain to the Lower Refuse Basin. Up-gradient runoff will be directed around the pad. Calculations for drainage from the site is required to be designed for the 100-year 6-hour precipitation event (R645-301-746.212). Where drainage flows over material that is not part of the refuse pile the design requirements are for the 10-year, 6-hour precipitation event. The presented designs are sized for the 10-year, 24-hour precipitation event. A few of the presented designs were checked to determine if the submittal meets the minimum requirements. For the peak flows evaluated, the submitted design flows exceeded the 100-year, 6-hour design flows using the SCS type-b method (The type-b method results in the least conservative design). Because the design flows for the evaluated ditches exceeded the values obtained using the 100-year, 6-hour peak event the remainder were assumed to also exceed or meet minimum design standards, therefore, the proposal is considered to have met minimum design requirements for the ditch and culvert designs.

Sediment control measures.

All site grading and diversions direct runoff to the lower sedimentation pond. According to the plan, runoff from the fresh water supply line will be treated by Alternate Sediment Control areas 4 & 5, as depicted in exhibit F9-117, 2 of 2 or, will drain to the slurry impoundments and Clear Water Pond.

Based on the small size of the additional area to be disturbed the amount of additional runoff that may reach the slurry cells would be negligible. Calculations may need to be provided if storage capacity changes when the proposed operations plan is developed.

Other erosion control methods include berms to retain runoff and slope ravel. Additionally, interim vegetation and slope matting will be placed on steep fill slopes and the flotation cell pad.

Regarding construction activities near the stream buffer zone, a commitment is

provided that no construction will take place within 100 feet on either side of the Price River. Signs will be placed to at the edge of the 100-foot buffer zone.

According to discussions with Daron Haddock, Permit Supervisor UDOGM, the power poles owned and controlled by Utah Power and Light would not be considered under the purview of the R645 regulatory requirements. The plan states that these poles are owned and controlled by UP&L. The existing plan shows the disturbed area associated with power line as being adjacent to the water line therefore, the power poles at the tailings facility appear to be treated by alternate sediment control areas 4 and 5 and the slurry cell system regardless of the ownership and operations.

Impoundments

The north-west area of the Upper Refuse Pond is proposed to be diked to separate initial plant tailings and to facilitate settling of wastes. This impoundment is a sub-structure to the existing impoundments which have previously been determined to meet the minimum criteria for impoundments. Existing culverts used to pass water between the structures will be refurbished. The plan does not indicate that minimum spillway requirements will be met for the new structure. Because the elevation of the structure is above the elevation of the existing dike the structure should be shown to meet the spillway criteria. This information would be necessary prior to conducting slurry operations or impounding water behind the dike.

Findings:

This amendment meets the minimum requirements for the proposed construction.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Analysis:

In Section 5.26 of the MRP the Permittee states:

The power line to the Clear Water Pond and supply well will parallel Farnham Road on the east side. All electric power lines will be built, owned and maintained by PacifiCorp. The two waterlines are above ground, 12 inch diameter carbon steel which rests on timber cradles.

The installation of the power lines and water lines are needed for the operation of the modular wash plant. Those utilities will be installed in area that have been previously disturbed. The impact of the power line and water lines will be minimal.

Findings:

The amendment meets the minimum requirements for these sections.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Analysis:

Mining facilities maps.

The new and revised maps that show the location of the wash plant and tailings berm is Drawing T1-9597, Drawing 712a, Drawing 9709-T1, Drawing 9709-T2, Drawing 9709-T3, Drawing 9709-T4. The maps and drawings are adequate for the Division to determine where the new facilities will be located.

Findings:

The amendment meets the minimum requirements for these sections.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

For final reclamation, 1 ft of topsoil from Borrow Area "B" will be placed on the non-refuse areas, or 355 yd³. In addition to the 148 yd³ of salvaged-soil replacement, the borrow soil will amount for a total soil replacement depth of 15 inches for the flotation and slurry tank areas. Replaced soils will be pocked prior to revegetation.

Construction fills placed may be used as substitute topsoil based on the interim revegetation test program. The Division may require additional testing of the construction fills for acid/toxic parameters for verification as substitute topsoil.

Findings:

The requirements of this section meets the regulatory requirements.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of bond amount.

The Division included the cost of reclaiming the wash plant into the reclamation cost estimate. The Division estimates the cost of reclaiming the Wellington Preparation at \$6,232,000 in 1999 dollars. The current bond amount is \$6,036,000 in 1999 dollars. The Division usually does not increase the bond amount unless the reclamation cost exceed the bond amount by 5% or more. The Division's reclamation cost estimate exceeds the amount of the reclamation bond by 3.2%. The reclamation bond does not have to be raised at this times.

Findings:

The Permittee has met the minimum regulatory requirements of this section.

RECOMMENDATIONS:

It is recommended that construction be allowed to commence with the following stipulations:

The permittee must meet the stipulations made in the soil resource and operation sections. These stipulations are for the Slurry Feed Tank Pad area. The soil survey and characterization stipulation must be met prior to disturbance and soil salvage.

- Survey and sample the Gerst soils at the slurry tank area prior to disturbance and to substantiate soil salvage amounts.
- Conduct a soil survey and characterize the soils in Slurry Feed Tank Pad area prior to disturbance and soil salvage.

The operation plan for the wash plant was not included in this amendment. The permittee has approval to construct the facilities but not operate them. The operation plan will be handled in amendment 97H. No approval for tailings placement can be granted prior to development of the PHC for operations dealing with processing and waste disposal. It is important that the information from the Wellington Plan amendment MT97A/96A be incorporated in to the plan prior to incorporation of this submittal.