

0013



ACT/007/035 File #5

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

September 6, 1994

TO: Jim Carter, Division Director

TO: FILE

FROM: Henry Sauer, Senior Reclamation Soils Specialist *HS*

RE: Response to Sunnyside Cogeneration Associates Request for Exemption from Characterization of the Acid- and Toxic- Forming and Alkalinity Producing Potential of the Refuse Pile and Slurry Ponds, Sunnyside Refuse and Slurry, Sunnyside Cogeneration Associates, ACT/007/035, Carbon County, Utah

SYNOPSIS

The Division received a letter (hand delivered on August 26, 1994) from the law firm of Callister Nebeker & McCullough (CN&M), representing Sunnyside Cogeneration Associates (SCA). The letter requests an exemption from the requirement to characterize the acid- and toxic- forming and alkalinity producing potential of the refuse pile and slurry ponds. The requirement for characterization of the refuse and slurry is one of the outstanding conditions of the approved permit (i.e. Permit Findings Document dated February 4, 1993, Condition #18 R645-301-731-300 (HS)).

The SCA is requesting that the Division waive the "Drilling Plan" entirely. The "Drilling Plan" has been discussed formally and informally with SCA's environmental consultant (Eckoff, Watson and Preator Engineering {EWP}) for more than one-and-one-half years. The majority of the correspondence and conversations have revolved around the number, location and increments of drill hole samples, laboratory methodologies, and the quality control/quality assurance protocol employed.

CN&M letter is accompanied by a memo from EWP describing the reasons for exemptions from permit condition #18. Many of the claims, made by EWP are incorrect and/or misinterpretations of the R645 Coal Mining Rules.

At this juncture it is imperative that the Division respond to the permittee's request as expeditiously as possible. Prior

to the Divisions official response, this writer requests that the information provided below be reviewed by the administrative and legal staff and be followed by a meeting with all involved Division staff to thoroughly discuss the permittee's request for exemption from fulfilling Condition #18 of the approved plan.

ANALYSIS

The first point which needs illumination with regards to the extensive monitoring requirements placed upon the permittee in reference to the characterization of the acid and /or toxic and alkalinity producing potential of the Sunnyside Coarse Refuse Pile and Slurry Ponds (CRP) is the fact that polluted water emanates from the base of the CRP (i.e. Coarse Refuse Seep Source {CRS}). The water pollution is a direct unmitigated adverse impact of coal mine waste disposal and slurry dewatering activities.

Second, the quantity of refuse, which is estimated to be approximately twenty million tons, is larger and older than any other active coal mine refuse pile in the state of Utah and one of the largest active refuse disposal facilities in the western United States. The estimated life-of-mine, base on recoverable coal alone, is approximately twenty years.

Third, the potential environmental impacts from mining the CRP have not been established. The hydrologic conditions in the vicinity of the CRP have not been assessed. The source(s) of the water which contribute to the flow from the CRS have not been definitively established. The effects of weathering and reexposure of the refuse material, as a result of refuse extraction has not been quantified. The time required to mine the CRP allows ample time from additional acid-metal leaching to occur and polluted water discharge.

Fourth, an acidic, metal enriched precipitate layer has formed at the refuse/lithologic interface at the base of the CRP. A similar precipitate has been observed at the refuse/lithologic interface below the Old Coarse Refuse Haul Road and at the refuse/soil interface on top of the East Embankment of the East Slurry Cell. Base on the John T. Boyd Fuel Study the precipitate layer below the CRP may be up to twenty feet thick in certain location. Exposer of the precipitate will occur throughout the life of the mine. The insitu physiochemical characteristics of the material is imperative in predicting its behavior upon reexposer to an oxidizing environment, and foremost its ultimate treatment, reclamation and disposal.

Finally no information exists within the plan to demonstrate the following: acid and toxic forming materials or other mine waste will be disposed of in a manner which will minimize the potential effect on surface and ground water; vegetation can be established on these areas in such a manner as to maintain erosional stability and meet the post mining land use.

Regulatory Review

Please note the following regulatory requirements and summary discussion.

Rule Citation: 645-301-553.252. Following final grading of the refuse pile, the **coal mine waste will be covered with a minimum of four feet of the best available, nontoxic and noncombustible material**, in a manner that does not impede drainage from the underdrains. The **Division may allow less than four feet of cover material based on physical and chemical analyses** which show that the requirements of R645-301-244.200 and **R645-301-353 through R645-301-357.**

Discussion: Please note that four feet of cover is a minimum amount of cover over coal mine waste and that additional cover and treatment may be required in certain instances.

Rule Citation: R645-301-553.300. **Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining will be adequately covered with nontoxic and noncombustible materials, or treated,** to control the impact on surface and ground water in accordance with R645-301-731.100 through R645-301-731.522 and R645-301-731.800, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

Discussion: The aforementioned regulation employs the phrases "...adequately covered...", "...or treat...". The regulatory intent, in my opinion, contemplates the need for cover greater than or less than four feet, in combination with chemical amendments or physical alteration of the acid- and toxic-forming material to control surface and ground water impacts and detrimental effects on plant growth.

Rule Citation: R645-301-623. Each application will include **geologic information in sufficient detail to assist in:**
623.200. **Determining whether reclamation as required by R645-301 and R645-302 can be accomplished.**

Discussion: The four feet topsoil cover over coarse refuse test plot trial on the ten year old SCC/SCA Revegetation Test Plot does not meet the requirements of R645-301-353 through R645-301-357. Therefore, additional cover of the best available, nontoxic and noncombustible material and/or refuse treatment may be required to achieve reclamation in accordance with R645-301 and R645-302.

Rule Citation: R645-301-623. Each application will include geologic information in sufficient detail to assist in:
623.100. **Determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined;**

Discussion: The CRP is the minable coal. Therefore the precipitate layer and or the mancos shale at the base of the pile must be considered the **stratum immediately below the coal seam to be mined**. The material below the coal seam has not been sufficiently analyzed to determine its acid-and toxic-forming potential.

Rule Citation: R645-301- 624.200. For the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, any portion of a permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, and **for the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES, samples will be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples from rock outcrops down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining.** The analyses will result in the following:

624.220. **Chemical analyses identifying those strata that may contain acid- or toxic-forming, or alkalinity-producing materials and to determine their content except that the Division may find that the analysis for alkalinity-producing material is unnecessary; and**

624.230. **Chemical analysis of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyritic sulfur content is unnecessary.**

625. If determined to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards of R645-301 and R645-302, **the Division may require the collection, analysis and description of geologic information in addition to that required by R645-301-624.**

Discussion: The mining method at the CRP is surface mining. The emphasis of the aforementioned regulation must be placed on the following statement: "... samples will be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples...". Insitu sampling and analyses of the refuse, slurry and precipitate must be an integral step in predicting the acid- and toxic-forming potential of the material. As mine waste is excavated and underlying material is exposed to weathering, pyrite oxidation will accelerate, thus increasing the acidity of the material and leaching water. Sampling said material at the time of reexposure, as is proposed will not accurately represent the acid- and toxic- forming potential of the material. The oxidation of pyrite and the acidification of leach water may occur prior to sampling thus negating the effectiveness of sampling.

Premining sampling and analyses is commonly practiced to identify rock/coal and/or coal waste units which are homogeneous with respect to geochemical and leachate characteristic. Classification of these unit must be the first stage in mine

planning so that material with an acid- and/or toxic forming potential is treated and/or handled prevent additional acid liberation and leaching.

Permit and Violation Review

The requirement for characterization of the refuse and slurry is one of the outstanding conditions of the approved permit (i.e. Permit Findings Document dated February 4, 1993, Condition #18 **R645-301-731-300 (HS)**).

Sampling of the CRP is one of the requirements of the "global violation" (NOV N94-13-2-1) and the resource information required by the mining and reclamation plan.

RECOMMENDATION

Based on the information provided above the Division must not grant a waiver from fulfilling the requirements of Condition #18. The "Drilling Plan" which has been designed and formulated by the Division and the permittee's environmental consultant must be implemented as soon as possible.

CC:Coal Staff