

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

OK

September 11, 2006

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor *DWH*

FROM: *DD* Dana Dean, P.E., Senior Reclamation Hydrologist, Team Lead

RE: Proposed Expansion of Disturbed Area, Task ID#2613, Savage Industries, Inc., Savage Coal Terminal, C/007/0022

SUMMARY:

Savage Industries, Inc. (SII) submitted an amendment proposing to expand the disturbed area at the Savage Coal Terminal on May 16, 2006. The Division found the information to be lacking and SII provided further information on August 23, and September 8, 2006.

The expansion is in conjunction with the proposed re-starting of the coal washing facilities at the site (Division Task ID#2549). Since the static thickener was reclaimed, the Permittee would like to use ponds to remove fine coal from the process water before recycling. The ponds would be located in an area currently within the permit area, but classified as undisturbed. The area totals 6.61 acres, and is located just northeast of the office building. A description of the disturbance is contained in the application, and the accompanying cover letter (2006 Incoming File, Record 13).

This technical memorandum discusses the hydrology related issues pertaining to the application.

The application meets the requirements of the relevant hydrology regulations. The Division should approve it and incorporate it into the approved MRP.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Analysis:

The Permittee has met the requirements of R645-301-121.200 by clearing up all inconsistencies and errors in the application.

Findings:

The application meets the requirements of the Permit Application Format and Contents requirements of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Probable Hydrologic Consequences Determination

The Permittee has met the requirements of R645-301-728 by updating the CHIA to reflect current conditions and the past 20 years of data.

Findings:

The application meets the requirements of the Hydrologic Resource requirements of the regulations.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

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Analysis:

Groundwater Monitoring Plan

The Permittee has met the requirements of R645-301-731.210 basing the groundwater-monitoring plan on a current PHC. The Permittee re-evaluated the groundwater-monitoring plan in light of the current and proposed operations, and has added two new monitoring wells.

Surface-Water Monitoring Plan

The Permittee has met the requirements of R645-301-731.220 because the current surface water-monitoring plan is based on a current PHC. No new surface monitoring sites have been added.

Acid- and Toxic-Forming Materials and Underground Development Waste

The Permittee has met the requirements of R645-301-731.300. They have not included information in the amendment application concerning the acid- toxic-forming potential of the fines that will be settled in the new ponds. The Permittee will sample for acid- or toxic-forming potential periodically, and have a plan for proper burial and/or treatment of any acid/toxic waste in a timely manner.

Diversions: Miscellaneous Flows

The Permittee has met the requirements of R645-301-742.310 and 742.330 by including design calculations for the undisturbed drainage ditch in Chapter 7 of the MRP.

Siltation Structures: Sedimentation Ponds

The Permittee has met the requirements of R645-301-733, R645-301-742.220, R645-301-743, and R645-301-121.200. Chapter 7 of the MRP contains all of the necessary design information required in the Rules. The MRP states that Sedimentation Pond 1 works in series with Ponds 2 and 3.

The Permittee has met the requirements of R645-301-742.220. They claim on page 3-34 of the amendment that the preparation plant will be operated as a closed circuit, unless an emergency discharge is needed; and that "if such an emergency should occur, any discharge from the plant or settling ponds would be contained by the sedimentation ponds on site." The Permittee has demonstrated in Chapter 7 that no offsite discharge from the plant will occur; even if the emergency plant discharge and a 10-year 24-hour storm occur at the same time.

Impoundments

The Permittee has met the requirements of R645-301-733 and 743, by providing certified, detailed plans for the thickener ponds in Chapter 5.

Findings:

The application meets the requirements of the Operation Plan: Hydrologic Information requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

The Permittee has met the Requirements of R645-301-722.500 and R645-301-141 since Plate 7-2 contains hydrology information of a sufficient scale to adequately represent the existing land surface configuration of the permit area. The map provides accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed. This map is at a scale of 1:1800 (1"=150').

The Permittee has met the requirements of R645-301-141 and 301-512.120 since there is one map that shows all surface facilities and installations (Plate 3-2).

Findings:

The application meets the requirements of the Maps Plans, and Cross Sections of Mining Operations requirements of the regulations.

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Hydrologic Reclamation Plan

The Permittee has met the requirements of R645-301-533.714 and 301-764 by including reclamation plans for the thickener ponds in Chapter 5.

Findings:

The application meets the requirements of the Reclamation Plan: Hydrologic Information requirements of the regulations.

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REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

OPERATIONS IN ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR Sec. 822; R645-302-324.

Analysis:

Essential Hydrologic Functions

The Permittee has met the Requirements of R645-302-321.210 and R645-301-140 by providing a new Plate 6-1 that is legible.

At this time, the Division does not feel that the new ponds will affect any alluvial valley floors. The Savage Coal Terminal has had no effect on them to date, because the groundwater in the area is naturally high in salts and other substances that make it unusable for irrigation. The water used to irrigate the alluvial valley floors comes from the Price River.

Though the original Technical Analysis (TA), the MRP, and the original (and only to date) CHIA fail to mention any alluvial valley floors in the vicinity of the permit area, a 1989 TA mentions one in Sections 1, 2, and 12 of T15S, R10E. These were identified by a reconnaissance study carried out in 1985, and referenced in the TA as Nimick et al., 1985. The Division at that time (1989) found that there was "a low potential for degrading alluvial valley floor groundwater quality because the naturally occurring ground water has such poor quality." The Division determined that the Savage Coal Terminal: "1. Does not include the extraction of coal; 2. Will not result in a significant disturbance to the surface or groundwater regime; and 3. Occurs on undeveloped rangeland, which is not significant to farming, grazing, or any other agricultural activity. The Division feels that this is still true.

Monitoring

The Permittee has met the requirements of R645-302-324.300 because they have reestablished "a monitoring system ...on all alluvial valley floors."

Findings:

The application meets the requirements of the Operations in Alluvial Valley Floors requirements of the regulations.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

The Cumulative Hydrologic Impact Assessment (CHIA) has not been updated since 1983. The Division will update it in conjunction with a complete rewrite of the Master TA.

Findings:

The Division will update the CHIA with the Master TA.

RECOMMENDATIONS:

The application meets the requirements of the relevant hydrology regulations. The Division should approve it and incorporate it into the approved MRP.