TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

April 26, 2007

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor

FROM: David Darby, Environmental Scientist III/Hydrologist/Lead

RE: Midterm Permit Review, Savage Services Corporation (SSC), Savage Coal Terminal, C/007/0022, Task ID #2759

SUMMARY:

The Division is now conducting a Midterm Mine Permit review of the Savage Coal Terminal and Preparation Plant (formerly known as C.V. Spur Coal Processing and Loadout facility). The Terminal is active and in the operational phase. The Terminals function is to clean impurities and or blend coals of different qualities to meet industrial standards of their clients.

A Midterm review is conducted to ensure the operational conditions and procedures in the mine plan has been updated to reflect changes in the Utah Coal Regulatory Program, subsequent to permit approval and ensure that any commitments or stipulations are followed.

The Midterm review for the Savage Coal Terminal facility was initiated by way of Division correspondence to James T. Jensen, (Vice President of Savage Services Corporation), on March 5, 2007. The following items were chosen for review:

A. A review of the mine plan to ensure that the requirements of all permit conditions, division orders, notice of violation abatement plans, and Permittee initiated plan changes are appropriately incorporated into the mine plan document.

B. A review to ensure that the mine plan has been updated to reflect changes in the Utah Coal Regulatory Program, which have occurred subsequent to permit approval (example: compliance with U.S. Fish and Wildlife Department-Colorado River Endangered Fish Recovery Program).

C. A review of the applicable portions of the permit to ensure that the mine plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.

D. An AVS check to insure that Ownership and Control information is current and correct, verify compliance status of unabated enforcement actions, determine status of any outstanding finalized penalties, and verify that there are no demonstrated patterns of violation.

E. A review of the bond to ensure that it is in order and that the cost estimate is accurate and is escalated to the appropriate current-year dollars.

F.A review of the mining and reclamation plan for compliance with operator commitments related to variances or special permit conditions (including but not limited to; subsidence control monitoring plans and reporting requirements, variances to AOC, experimental practices, electronic data base water monitoring reporting, raptor surveys, revegetation test plots, etc.).

G. The Division may conduct a technical site visit in conjunction with the assigned compliance inspector to document the status and effectiveness of operational, reclamation, and contemporaneous reclamation practices.

Savage Coal Terminal (old CV Spur) was idle from 1984 until May 16, 2006 when they submitted an Amendment to expand their mine permit. During the idle period SII reclaimed the static thickener, which removed product from the fine coal cleaning circuit, and allowed the decant water to be returned to the cleaning process. Their first upgrade to their permit was a stacking tube addition, Task ID #2436. The second was the addition of settling ponds, Task ID #2524. The third upgrade was the construction of four conveyors (the plant feed conveyor, the fine raw coal conveyor, the clean coal stacking conveyor and the refuse conveyor), Task #2599. And, in a forth upgrade, SII proposed to disturb an additional 6.61 acres, increasing the permit area to 160.00 acres. The disturbed area now totals 128.89 acres.

Division personnel assigned to the Midterm permit review team, Priscilla Burton, Joe Helfrich, Wayne Western, Pete Hess and I, met Dan Guy, Blackhawk Engineering, at the Terminal to conduct a technical site visit. Mr. Guy is the Environmental Representative for Savage Coal Terminal. The team met Mr. Boyd Roads, Manager of Savage Coal Terminal. The team toured and observed the site.

Because the Terminal had been idle for so many years, the mine plan had several old features.

Division discussed estimated time frames for review and approval of the re-formatted MRP. Both parties agreed to have the reformatted MRP approved by the next Permit renewal date or August 7, 2009. Mr. Guy stated he had approval from Savage Management to upgrade the mine plan. James Jensen is the Executive Vice President of Savage Services Corporation authorized the updates.

A Technical Review was conducted on September 11, 2006 by Dana Dean in relation to a proposed expansion of disturbed area, Task ID#2613. 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. 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 at a site currently within the permit area. 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 (2006IncomingFile, Record 13).

During the Dana's Technical she discovered there were several discrepancies in the hydrologic section of the mine plan, because the preparation plant had been inactive for such a long time and new changes were being made that weren't addressed in the old plan. Several updates to the plan were required to bring the plan into compliance.

Another amendment (Task 2706) was submitted to the Division on November 27, 2006 to add a plant overflow pond at the Savage Coal Terminal. With the restart of the wash plant, the pond will be needed. The pond intercepts overflow and wash down water form the plant. Overflow from the pond will be directed to Pond 6 where it is filtered and re-circulated to the plant. There was insufficient information for the designs and routing of surface water around the pond. The proposal was not considered adequate to meet the minimum requirements of the regulations and sent back to the operator for revision. In the meantime, Savage is using one of the thickener ponds to store the wash down water from the plant.

TECHNICAL ANALYSIS:

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.

Analysis:

General

Groundwater Monitoring

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.

Located in Castle Valley, the coal terminal sits on the Manchos shale. The terminal activities take place on the upper Bluegate Shale unit. The upper layers of the unit are weathered and can hold low volumes of groundwater that has seeped in from the surface, whereas the deeper layers are more consolidated silts and clays that do not transmit groundwater. The low hydrologic conductivity of the strata below the terminal prevent vertical migration and limit horizontal flow of groundwater. SSC monitors the level of groundwater in three wells. Site CV-1-W is an older site. Data has been collected from this well since 1979. Sites S-1-GW and S-2-GW were installed in early 2007 and first monitored February 20, 2007. The sites will continue to be monitored throughout the operational and reclamation phases of coal process. The wells are monitored for water levels and water quality on a quarterly basis. The data is sent to the DOGM Water Quality Database quarterly. The data is checked for completeness and analyzed for anomalies in flow and quality.

Water monitoring is conducted according the groundwater monitoring schedule established in Section 7.1.5, Section 7, of the MRP. Groundwater is analyzed for parameters established in Figure 7-15, Chapter 7 of the MRP.

Surface Water Monitoring

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. SSC monitors one surface water site and one UPDES site. The data is checked for completeness and analyzed for anomalies in flow and quality. Site CV-14-W is established in a ditch along the north end of the terminal. Site CV-14-W is monitored during the 2nd and 4th quarters and submitted to the DOGM Water Quality Database. The UPDES site, CV-15-W is monitored monthly. Water monitoring is conducted according the surface water monitoring

schedule established in Section 7.1.5, Section 7, of the MRP. Surface water is analyzed for parameters established in Figure 7-15, Chapter 7 of the MRP.

All surface water monitoring sites will continue to be monitored.

Acid- and Toxic-Forming Materials and Underground Development Waste

The plant is designed to operate as a non-discharging facility (Section 3.2.6.1). The temporary storage of coal processing waste from the 2006 start up of the wash plant facility requires the sampling of every 5000 tons of refuse for analysis of acid and toxic potential if the material is to be stored in excess of thirty days. The analytical results of this sampling is to be forwarded to the Division on a quarterly basis, as well as within the Annual Report for the Savage Coal Terminal.

The Permittee has met the requirements of R645-301-731.300. They have 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.

Transfer of Wells

All wells will be reclaimed according to DOGM requirements.

Water-Quality Standards And Effluent Limitations

The Permittee has submitted plans in Section 7.2.2.2. Chapter 7 of the MRP to divert undisturbed area runoff away from the disturbed area, and control and contain disturbed area runoff on the disturbed area. All disturbed area runoff and sediment generated during runoff events will be directed to sedimentation ponds 1, 2, 3 or pond 5 or pond 6, where the runoff will be held and sediment will settle out prior to any discharge. All runoff will be routed through Pond #6 before it leaves the coal terminal. All water discharged from the site will be monitored monthly and discharged when it meets UPDES water quality standards.

Disturbed and undisturbed drainage areas are shown in Figure 7-4 and 7-5. The figure shows the sedimentation pond receiving runoff from the respective drainage area. These areas are used to calculate runoff and sedimentation volumes to establish design criteria for hydrologic structures. Section 7.2.3.3. shows the designs for the sedimentation ponds.

Diversions: General

The Permittee controls runoff on the surface using berms, ditches and culverts. The structures are shown on Plate 7-2. Hydrologic designs for the structures are presented beginning in Section 7.2.3.4 of Chapter 7 of the MRP. Sizing calculations and parameters are presented to ensure ditches, culverts and berms meet the design criteria of the 10 yr-24 hr precipitation event.

Diversions: Perennial and Intermittent Streams

There are no perennial of intermittent stream that flow on or off the permit area. The Permittee has a water right to divert water from the Price River to the preparation plant when process water is low. A stream buffer zone is not required. There are no perennial or intermittent stream channels on or adjacent to the permit area.

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. Stream Buffer Zones.

Sediment Control Measures

Best technology currently available is employed at the Terminal through the use of Sediment is contained and controlled by sedimentation ponds, silt fences, berms and straw bales.

Siltation Structures: General

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. Sedimentation Pond 1 works in series with Ponds 2 and 3.

Siltation Structures: Sedimentation Ponds

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 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. The Permittee has established beginning Section 7.2.3.3., in Chapter 7 of the MRP that sediment pond structures will contain disturbed area runoff.

Runoff from the Savage Coal Terminal refuse disposal site as well as the temporary refuse storage facility (subdrainage area 5a; See Figure 7-5, Area Subdrainages) will report to sediment pond #5, which is located as shown on Plate 3-2, Savage Coal Terminal Facility Map. Pond #5 has been designed to adequately treat the reporting volume prior to discharging the effluent to pond #6. All ponds are inspected on a quarterly basis by a Utah registered professional engineer.

Siltation Structures: Other Treatment Facilities

There are 5 active sedimentation ponds at the terminal. The ponds are sized to contain the runoff of a 10 yr-24 hr precipitation plus 1 year of sediment, calculated using the Universal Soil Loss Equation (USLE). Table 7-21 shows the design capacities of ponds 1, 5, and 6.

Siltation Structures: Exemptions

Ponds 1, 2, 3 (in series) and pond 5 are incised and designed for total containment and overflow to pond 6. Pond 6 overflows to a ditch that connects to the Price River. All ponds have an emergency discharge structure to pass the 25 yr-24 hr precipitation event.

Discharge Structures

The sedimentation ponds located on the permit area are all incised. Their stablility is checked quarterly under the direction of a registered professional engineer

Impoundments

The Permittee has met the requirements of R645-301-733 and743, by providing certified, detailed plans for the thickener ponds in Chapter 5.

Ponds, Impoundments, Banks, Dams, and Embankments

Findings:

The information provided 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:

Affected Area Maps

Several maps depict the affected area. Plate 3-2 and 7-1shows the area, structures, hydrologic structures and permit boundary. Plate 3-1 is one of the plates that need to be updated to show current activities.

Mining Facilities Maps

The location of hydrologic structures in relation to the permit area and other structures and contoursare shown on Plates 3-2 Savage Coal Terminal Facility Map and Hydrology Maps 7-1 and 7-2 Savage Coal Terminal Hydrology Map, updated in August 2006. Plates 7-4C shows the detailed plans for constructing the pond. All maps and plates submitted as information for the Savage Coal Terminal mining and reclamation plan are certified by a Utah registered professional engineer.

Mine Workings Maps

Plate 7-1 shows the location of surface and groundwater monitoring sites.

Monitoring and Sampling Location Maps

The Permittee has met the Requirements andR645-301-141of R645-301-722.500 since Plate7-2 contains hydrology information of a sufficient scale to adequately represent the existing land surface configuration of the permit area. The map provides the accurate representation of the range of natural slopes and reflects the geomorphic differences of the area to be disturbed. This map is at a scale of 1:1800 (1":150').

Findings:

Information provided in the application is adequate to meet the minimum Maps, Plans and Cross Sections of Mining Operations requirements of the regulations. Maps, Plans and Cross Sections of Mining Operations will be updated to reflect current conditions prior to midterm permit renewal. The operator indicated all maps will be prepared with a digital format to facilitate updates and changes. A surface basemap has already been developed as of July 17, 2007 by Blackhawk Engineering, Savage Service Corporation's consultant.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

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

Analysis:

Information has been presented for regarding Pond 6 that requires an update to the CHIA.

Findings:

The information presented by the operator meets the minimum requirements of the Cumulative Hydrologic Impact Assessment regulations.

RECOMMENDATIONS:

It is recommended that the hydrologic section of Permit Amendment Task 2759 be approved

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