

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

April 18, 2006

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor, Task Manager

FROM: Peter H. Hess, Environmental Scientist/Engineering, Team Lead

RE: Stacking Tube Addition/Water Truck Pad, Savage Services Corporation, Savage Coal Terminal, C/007/022, Task ID #2463

SUMMARY:

The Permittee, Savages Services Corporation, submitted an application to the Division on March 17, 2006 to allow for the construction of a new forty-eight inch conveyor having a length of 250 feet, with a stacking tube having a fourteen-foot diameter and a standing height of approximately sixty feet.

The installation will occur in the already permitted coal storage yard located NW of the preparation plant building. The justification/need for the new facility is to reduce the dozer push distances and subsequent tram times (i.e., enhance machine efficiency) necessary to store the volume of coal stockpiled in this area.

After reviewing the initial application, the Division felt additional information was necessary in order to meet the requirements of R645-301-526.200.

During the March 31, 2006 inspection, the Permittee mentioned a need to install a concrete pad adjacent to the pumphouse, which is located in the NE corner of the disturbed area. The Permittee was instructed to submit a design for the pad, with concrete volumes, and bond calculation with the requested information relative to the stacking tube/conveyor addition.

The applicant, through Mr. Dan Guy, P.E., of Blackhawk Engineering, submitted the additional information that had been requested relative to the stacking tube/conveyor 1a addition and the new water truck pad on April 11, 2006.

This technical memo will address the adequacy of the Task ID #2463 submittal relative to the engineering discipline.

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TECHNICAL ANALYSIS:

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

The Savage Coal Terminal is a coal storage and blending facility, with the ability to custom blend coals of varying quality to meet specific customer needs. The facility has a truck dump facility, and can load either trucks with front-end loaders or trains with the over-rail storage silo and loading track loop.

As would be expected, much of the disturbed area here encompasses coal storage piles, located in various parts of the permit area. The application (Task ID #2463) is proposing to install a new forty-eight inch conveyor (250 foot length) in the coal stockpile yard that is located in the center of the north end of the permit area. The new conveyor (designated as Conveyor #1a) will transfer coal to a new stacking tube at a rate of 1250 tons per hour, discharging product through trap doors at various elevations. The stacking tube will have a fourteen-foot diameter, and be sixty feet high.

The application contains a few minor revisions to update page 3-1a, section 3.2.1.2, which lists the surface facilities and their construction dates. The updates include the new shop and oil storage building (approved and built), and the proposed conveyor 1a and its associated stacking tube.

Revised page 3-27, section 3.2.5.3, Conveyors, now lists thirteen conveyors including the newly proposed Conveyor #1a.

Revised page 3-28 adds conveyor #1a to the other twelve conveyors at the Coal Terminal. Page 3-28 depicts the centerline and grade of all belts at the Coal Terminal.

Pages 3-1a, 3-27, and 3-28 will be inserted into the Coal Terminal MRP upon Division approval of this submittal.

The section of the R645 Coal Mining Rules relative to these facility additions is R645-301-526.200, Utility Installations and Support Facilities. Regulation 526.220 requires that the applications contain “plans and drawings for each support facility to be constructed, used or

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maintained within the (proposed) permit area will include a map, appropriate cross-sections, design drawings, and specifications sufficient to demonstrate how each facility will comply with applicable performance standards...”.

The additional information requested by the Division after the initial submittal was relative to the needed design drawings and specifications requirement.

The Permittee’s response received April 11, 2006 contains **APPENDIX 3-7**, Stacking Tube Addition and Water Truck Pad, which upon Division approval of this application, will be inserted into the mining and reclamation plan for the Savage Coal Terminal.

APPENDIX 3-7 contains an introduction giving a brief description of the proposed coal stacking tube / conveyor 1a addition, along with a description of the water truck concrete pad. APPENDIX 3-7 contains the following drawings:

- 1) Drawing #0604-2-100, ARCH Coal Stockpile Arrangement Plan, which depicts a plan view of the area where the conveyor 1a/stacking tube addition will be built.
- 2) Drawing #0604-2-101, ARCH Coal Stockpile Arrangement Sections, which depicts a lateral view of conveyor 1a, the new stacking tube, and mid-conveyor support tube. Also shown are cross sections of the coal stockpile, which will be built by these facilities.
- 3) Drawing #0604-4-101, ARCH Coal Plant Feed Stacking Tube Foundations Plan, Section and Detail. This drawing shows anchor bolt detail, a plan view, and a cross section of the proposed concrete foundation.
- 4) Drawing #0604-4-102, ARCH Coal Support Column Concrete; this drawing depicts the concrete foundation, and the anchor mechanism which will be built to secure the steel support tube at the mid-point of conveyor 1a.
- 5) Drawing #0604-5-110, ARCH Coal Support Column, Plan and Elevation; this drawing depicts the sixty foot, vertical steel tube which will provide the structural support at the mid-point of conveyor 1a. Section “A” depicts the conveyor truss support frame. This support is currently being fabricated.
- 6) Drawing #0604-5-120, ARCH Coal Stacking Tube, Elevation, Sections, Views and Details, depicts the design details of the sixty foot tall, fourteen foot inside diameter coal stacking tube, with flow through doors.
- 7) Drawing #A-3-7-1, PROPOSED WATER TRUCK PAD, depicts plan and section views of the thirty foot by fifteen foot concrete pad. Number 6 rebar will be installed on twelve-inch centers to provide structural strength for supporting a four thousand gallon water truck. This drawing is P.E. certified by Mr. Dan Guy, Utah registered professional engineer.
- 8) *Plate Number 3-2, SAVAGE COAL TERMINAL FACILITY MAP*, depicts the surface facilities for the entire permit area. The location of the proposed conveyor 1a/stacking tube is shown on the north central area of the disturbance. This map

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is P.E. certified by Mr. Dan Guy, P.E. The certification requirements of R645-301-521.164 have been met.

All detail drawings relative to concrete foundation design, and stacking tube and conveyor support structure design are approved for construction by engineers employed by Mine and Mill Engineering, Inc., of Salt Lake City, Utah. There are no requirements for the P.E. certification of design/detail drawings for surface facility construction in the R645 Coal Mining Rules.

Drawing #0604-2-101 (PLATE 3-21) Section D, depicts a side view of the proposed installation. As can be seen, the SE end of proposed Conveyor #1a will be attached to the existing stacking tube located on the east end of Conveyor #1, (C-1). The C-1a conveyor will be built on a bearing of approximately N 36 degrees E, for a length of 256 feet. The new stacking tube will be located here, and will receive raw coal from the truck dump.

The Task ID #2463 application contains a copy of an inter-office memo between Mine and Mill Engineering and Savage Services Corporation that gives additional details relative to the proposed conveyor 1a addition. These include:

- 1) An electrically operated flop gate will be implemented to either transfer coal from the head end of conveyor C-1 onto the tailpiece of the new proposed C-1a, or the gate will allow product feed to be discharged into the existing concrete silo for the building of stockpiles about that existing storage facility.
- 2) Conveyor C-1a will utilize 48 inch belting, and be capable of transporting 1250 tons per hour to the new stacking tube.
- 3) Conveyor C-1a will utilize a tensioning device located beneath the conveyor truss support.
- 4) Conveyor C-1a will be driven by a standard gear reduction powered by a sixty horsepower, 440 VAC, 60 HZ, 3 phase electric motor. Power routing will be transferred from the existing C-1 conveyor.

R645-301-526.220 requires that an operation plan/support facilities description must state that support facilities be operated in accordance with the permit issued for the coal preparation plant to which it is incident or from which its operation results. Section 3, OPERATION AND RECLAMATION PLAN states on page 3-1, Section 3.2, Surface Facilities, 3.2.1.1, Maintenance, states the following commitment; “all support facilities at C.V. Spur will be maintained and used in a manner which prevents damage to fish, wildlife and related environmental values and prevents additional contributions of suspended solids to streamflow or runoff outside the permit area”. This commitment meets the requirement of R645-301-526.222.

“Plans and drawings for each support facility to be constructed, used, or maintained within the proposed permit area will include a map, appropriate cross sections, design drawings,

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and specifications sufficient to demonstrate how each facility will comply with applicable performance standards”.

APPENDIX 3-7, page 2, section 2, **Specifications, A. Stacking Tube Addition**, paragraph viii. states the following; “Dust control along the new system will be provided by a combination of enclosed transfers, covered conveyors, and stacking tube door covers.”

Paragraph ix. states “a new Notice of Intent has been filed with the Division of Air Quality. This N.O.I. includes the new proposed stacking tube.” A copy of the N.O.I. cover letter to DEQ/DAQ is included as Attachment A of **APPENDIX 3-7**. A review of the N.O.I. cover letter indicates the Savage Services Corporation is also requesting an increase of throughput at the Coal Terminal from the currently approved 8 MTPY to 12 million tons per year. Review and approval of this minor modification to the Air Quality Approval Order will be handled by the Utah DEQ/Division of Air Quality.

The Task ID #2463 application received on April 11, 2006, also contains a proposal to permit a 15-foot by 30-foot concrete pad having a thickness of nine inches. The pad will be constructed adjacent to the pump house that is located in the NE corner of the Coal Terminal property (See Plate 3-2). This is in an ASCA area. Number 6 steel rebar will be installed on 12-inch centers to reinforce the pad such that it will not break under the weight of a 4000-gallon water truck. The pad is sloped toward its center from all sides. A six-inch pipe will drain spilled water from the filling process back into the pump house sump. Drawing #A-3-7-1 is P.E. certified by Mr. Dan Guy, Utah registered professional engineer. The Permittee makes frequent use of a water truck during hot dry periods to control fugitive road dust through out the disturbed area.

The volume of concrete associated with this structure is 12.5 yards.

Findings:

The application meets the minimum regulatory requirements of the R645 Coal Mining Rules for Utility Installations and Support Facilities.

EXISTING STRUCTURES

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

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The proposed Conveyor 1a with its stacking tube will be attached to an existing stacking tube, which is located at the discharge end of Conveyor #1. Conveyor #1 transports coal from the receiving hopper located below the truck dump to the already permitted stacking tube.

The top of this existing tube will require modification to be able to transfer coal from the #1 Conveyor head roller to the #1a Conveyor. Same will also have to be able to feed coal past this transfer, into the existing tube, such that coal can be stockpiled about this existing stacking tube. A design drawing and text for the modifications necessary to this existing structure has been provided (See INTER-OFFICE MEMO between Mine and Mill Engineering, Inc., and Savage Services Corporation).

Findings:

The minimum regulatory requirements of this section of the R645 Coal Mining Rules have been met.

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

Analysis:

As noted elsewhere in this technical memorandum, the Permittee has applied for a minor modification to the current in-place Air Quality Approval Order (DAQE-563-98). This minor modification will permit the conveyor 1a / stacking tube amendment, and will also increase the annual throughput for the Coal Terminal from 8 MTPY to 12 MTPY.

The Permittee has included a copy of the cover letter going to DEQ/DAQ for this minor amendment to the AO, (See **APPENDIX 3-7, Attachment A.**)

It is recommended that the Division issue an Approval to construct the concrete foundations for the new stacking tube as well as the mid-conveyor support structure. The Permittee may also build the concrete water truck pad.

The Permittee may not proceed beyond the foundation construction phase until the Utah DEQ/DAQ has amended and approved the minor modification to DAQE-563-98.

Findings:

The application meets the minimum regulatory requirements of this section of the R645 Coal Mining Rules.

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

Reclamation of the proposed stacking tube and conveyor 1a will involve standard demolition procedures which would include removing the belting, and cutting up and removing the various steel components associated with this type of installation. The stacking tube will be cut loose from its foundation and more than likely pushed over so its size can be reduced for handling purposes. All concrete foundations will be broken up, removed and placed in the Sediment Pond #1 depression for burial (See **APPENDIX 3-7**, section III, Reclamation Cost Estimate, Stacking Tube Addition, B. Procedure, page 4 included with the Task ID #2463 application). As the Coal Terminal disturbed area is generally flat lying, the majority of the reclamation will involve cleaning up and removing remaining coal material, ripping the subsurface, topsoiling, roughening and seeding. There are no steep slopes, escarpments or other geologic features that would require extensive backfilling and grading in order to achieve approximate original contour.

Findings:

The application meets the minimum regulatory requirements of this section of the R645 Coal Mining Rules.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

General

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Determination of Bond Amount

APPENDIX 3-7, section III, C, Calculations, (page 4), contains reclamation and disposal cost estimates for the new facilities being permitted through this Task ID #2463 application. The cost for demolition and on site disposal for the three concrete volumes associated with this proposal (water truck pad, stacking tube foundation, and center conveyor support foundation) is estimated to be \$3,771.46.

Steel reclamation and disposal costs are estimated at \$3,733.89. All steel will be hauled off site for disposal.

Supervisory costs are estimated at \$1,996.20 (36 hours @ \$55.45/MN).

Total reclamation and disposal costs for these additional facilities are estimated to be \$9,501.55.

The Savage Coal Terminal operation has a reclamation bond in place with the Utah DOGM in the amount of \$2,525,000 in 2007 dollars. The amount of bond necessary to reclaim the Coal Terminal facilities prior to receipt of the conveyor 1a / stacking tube addition and water truck pad was estimated at \$2,155,000. As noted above, the reclamation of these additional facilities will increase that reclamation cost by \$9,501.55. Thus, the total reclamation cost for the Coal Terminal will now be \$ 2,164,500, which is \$360,000 less than the amount of bond that is posted for this site.

The bond amount that is in place as of April 18, 2006, is therefore adequate to reclaim these new facilities as well as the remainder of this site.

Findings:

The bond amount that is in place is adequate to reclaim the Coal Terminal facilities, with the addition of these new proposed facilities. The minimum regulatory requirements of this section of the R645 Coal Mining Rules have been met.

RECOMMENDATIONS:

It is recommended that a conditional approval be given to construct the concrete foundations for the coal stacking tube, mid-conveyor support, and water truck pad. Final approval cannot be given until Utah DEQ/Division of Air Quality gives approval to the amended Air Quality Approval Order.