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February 11, 2002

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Peter H. Hess, Reclamation Specialist III/Engineer, Team Lead

RE: Midterm Review, Andalex Resources, Inc., Wildcat Loadout, C/007/033-MT01-1

SUMMARY:

As part of the Division's midterm permit review process, sections of the Wildcat mining and reclamation plan were reviewed for compliance with the R645 Coal Mining Rules. A field visit / partial inspection was made on November 8, 2001, with Mike Glasson representing the permittee, and Wayne Western, Daron Haddock, Jim Smith and Peter Hess representing the Division.

The inspection of the Wildcat site and the review of certain sections of the MRP indicated that three items needed to be addressed:

Findings:

R645-301-731.211, -221, -222.1, 1) Total iron needs to be added to Table IV-10 (Water Quality Parameter List) in the Wildcat MRP. 2) Table IV-10 is unclear in that analyses for metals and ions should be for dissolved rather than total concentrations (except for total iron and total manganese). Analyses should be performed for total and dissolved iron, and for total and dissolved manganese.

R645-301-742.200, 1) The berm at the east end of the south part of ASCA #1 needs to be rebuilt to reestablish the integrity of the sediment control in this area. 2) It appears that some runoff from the south part of ASCA #1 is not treated but reports to sediment pond "E". If the water that leaves this ASCA does not report to the pond, the straw bales at the outlet of the culvert that drains the ASCA need to be maintained. If this runoff reports

to sediment pond "E", the plan should be modified to clearly show the sediment pond is the treatment for this area. 3) At ASCA #1 north of the tracks, straw bales or silt fence need to be placed at the drain points through the berm, specifically along the railroad right-of-way. 4) Part of ASCA #3 and all of ASCA #4 are using vegetation as sediment control, but this is not indicated on Plate 2. If vegetation is to be one of the sediment control methods to be used in these areas, the effectiveness of vegetation as sediment control needs to be evaluated and the plan needs to be updated to show sediment control by vegetation in these areas. 5) The permittee should consider changing the treatment for the smaller area of ASCA #5, which is outside the berm, from straw bales to vegetation only. This would require showing that the established vegetation is as effective as the bales, via hydrologic / engineering analysis.

R645-301-121.200, -512.100, -512.200, All maps in the MRP, but especially Plate 2, should be checked for completeness and accuracy and corrected as needed.

Each regulation, with its requirements will be addressed in conjunction with the permittee's response.

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:

Surface-Water Monitoring

During the review of water monitoring information from the third and fourth quarter of 2000, and the first quarter of 2001, it was noted that several minor problems existed with the surface and ground water monitoring regimes. The currently approved surface water-monitoring plan includes a required parameter to analyze for total manganese, but an analysis for total iron is not indicated as being required. The analysis for total iron is a parameter required by the Coal Mining Rules. Table IV-10 is unclear, in that the analyses for metals and ions (cation/anion balance) is not specifically stated as being determined using the concentrations of **dissolved**

metals. The required surface water monitoring parameter list needed clarification, such that **both total and dissolved concentrations for both iron and manganese** are performed for each submitted water sample.

On January 15, 2002, the permittee submitted a response to the Division's November 23, 2001 midterm review deficiency document. That submittal contained a revised TABLE IV-4, Surface Water Baseline and Operational Water Quality Parameter List which includes the following changes:

1) The analysis for **total** iron has been added for both baseline and operational parameters.

2) The analysis for **dissolved** manganese has been added for both baseline and operational parameters.

3) The revised TABLE IV-10 specifically requires that **"IONS AND METALS ANALYSES ARE DISSOLVED, EXCEPT AS NOTED".**

The revisions made to TABLE IV-10 clarify and adequately addressed the deficiencies aired in the Division's November 23, 2001 technical analysis.

Siltation Structures

The permittee submitted a revised Plate 2, Wildcat Loadout Surface Facilities Topography (Watershed & Drainage) with the January 15 submittal which depicts the sites surface drainage diversions as well as the sites six alternate sediment control areas. This map was revised by the Blackhawk Engineering Company and certified by Mr. Dan Guy, Utah registered professional engineer. The revised Plate 2 utilizes a very intense method of cross-hatching to delineate the area of each of five numbered ASCA's. This new cross-hatching obliterates the surface contours in several of the ASCA's as well as some of the drainage control structures depicted on the currently approved Plate 2. Also, although the various topsoil piles are discussed in the MRP as ASCA's, they are not enumerated on Plate 2, nor are the sediment control measures for each. Page 146 of the approved plan (Section K-9, paragraph 2) indicates that all topsoil piles will be surrounded by earth berms, except for a discharge notch which utilizes straw bales to filter out any topsoil sediment eroded off by the event. All topsoil piles have become well vegetated over the length of time which they have existed in their present locations. Plate 2 does not depict where the topsoil piles are located; hence, no control measures are shown for any of same. One must reference Plate 1 to determine where the topsoil storage piles, which have been classified by the permittee as ASCA's, are located on the topography, watershed, and drainage map, (i.e., Plate 2).

Technical Directive 003A, Sediment Control Measures for Disturbed Coal Mine Lands, Table 1, Permitting Standards and R645-301-742.231 require a "design" for areas utilizing

alternate sediment control methods. Table 1 also indicates that the following are required in addition to a design for each ASCA. These are:

1) **DOGM approval.**
2) **Must meet effluent standards** by incorporating necessary safeguards against additional contributions of suspended solids to stream flow or runoff outside the permit area. Success of the design will be measured by the inspection process. The inspection process requires **certified "as-built" drawings** in order to confirm that the DOGM approved design has been implemented in the field.
3) **Must be shown on an MRP map.**
4) **Must be discussed in the MRP.**
5) **Must be maintained.**
6) **Must have adequate storage.**
7) **Sediment Removal** is required, as part of the maintenance cycle.
8) **Must treat runoff.**

The submitted revised Plate 2 is the permittee's attempt to meet the requirements of the deficiency aired in the Division's November 23, 2001 midterm review deficiency response, in reference to **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, which required that all maps in the mining and reclamation plan, but especially **Plate 2 should be checked for completeness and accuracy and corrected as needed.**

It appears that the submitted revised Plate 2 is the permittee's attempt to meet the certified "as-built" drawing requirement mentioned above. However, the intense cross-hatching used by the draftsman on the revised plate makes the surface contours difficult to read, and berms that were barely visible on the currently approved version of Plate 2 are now difficult, if not impossible, to see.

Chapter 4, page 92 of the Wildcat mining and reclamation plan makes specific reference to "six small areas on the site that do not drain to the sediment ponds." These areas are all equipped with alternate sediment control consisting of straw bales, berms and/or vegetation. The areas are designated BTCA Areas and are shown on Plate 2. Complete descriptions of each of the areas is provided under Section K.9 of this chapter.

Section K, part 9, under Other Sediment Control – ASCA, discusses the fact that the sites numerous topsoil piles "are equipped with berms and have been revegetated. The areas around these topsoil piles have been graded and revegetated to prevent erosion." Regular monthly inspections at the site have confirmed that these piles do have protective berms in place, although some of the piles have vegetation that dies off during the dry summers in the area. The topsoil piles are not depicted as ASCA's on Plate 2. **This should be corrected.**

In addition, Chapter IV, Part F, Section 3, (page 79 of the approved MRP), Removal and Storage of Topsoil and Subsoil, includes verbiage that indicates that the topsoil storage areas depicted on Plate 2 "are to be considered small area exemptions." Thus, text exists in the mining and reclamation plan that describes the six ASCA areas depicted on Plate 2 both as ASCA's and as SAE's (small area exemptions). This cannot be, as the requirements for SAE's as described in TABLE 1—PERMITTING STANDARDS of Tech Directive 003A are different from those required for ASCA's.

TABLE IV-15 ASCA lists ASCA Area 6 as having an area of 0.54 acres. It is assumed that the areas of the four topsoil piles depicted on Plate 1 (A, B, E, and F) make up this acreage, but if one scales topsoil pile E, and utilizes a 550-foot length, and a minimum width of 250 feet, the area of pile E calculates to be 3.15 acres by itself. Thus, the total acreage for ASCA 6 is incorrect.

ASCA #1

This ASCA is separated into two sections by the Utah Railway right-of-way, and is adjacent to the County road close to the upper NW access gate. The acreage here consists of 1.71 acres as confirmed from Plate 2 and TABLE IV-15, ASCA. The railroad right-of-way itself **is not included** within the Wildcat permit area. A berm contains runoff in the eastern section of ASCA #1.

The intended sediment control method on the portion on the east side of the tracks is a berm that directs runoff to a 12-inch culvert, where the currently approved plan (Plate 2) indicates straw bales are to provide sediment control as the water leaves the bermed area. During the inspection, it was determined that the straw bales did not exist at the exit of the culvert. The revised Plate 2 submitted on January 15, 2002 does not show the straw bales mentioned. The flow from the east section of ASCA #1 reports to a half-round that in turn reports to a ditch that is collinear with the permit boundary. This ditch flows south and eventually runs into a 12-inch half round paralleling an ancillary road. This drainage ends up in sediment pond "E". This area is generally flat and water simply evaporates or infiltrates. Adjacent to the upper NW gate entrance, the berm for ASCA #1 needed enhancement, as determined during the November 8, 2001 site inspection. The permittee addressed this by re-enhancing this berm prior to the December 20th inspection.

The portion of ASCA #1 on the northern side of the Utah Railway right-of-way is fairly flat, and the designed sediment control is total containment via a berm. There is no other method of treatment. The berm was observed to have breeched in several locations during the November 8th inspection. The permittee also restored this berm prior to the December 20th inspection. Notes on Plate 2 located within the mining and reclamation plan indicate that straw bales will be used at possible drain points of ASCA's. Although it was suggested to the permittee that bales or silt fence be placed where the berm was breeched, the permittee has chosen to restore the approved design.

ASCA #2

This is a small, (0.44 acres, TABLE IV-15, and Plate 2) well-vegetated area that lies directly north of sediment pond "D" and east of sediment pond "E". In addition to the vegetation, straw bales are effective in providing sediment control. New bales have recently been installed along the crest of the west embankment adjacent to ND-1. As the bales are part of the design, their location(s) should be depicted on Plate 2 in order to meet the certified "as-built" drawing requirement. TABLE IV-15 indicates that the only treatment method utilized in ASCA 2 is straw bales. As vegetation is prevalent in this area, it should also be added as a treatment method both on Plate 2, and on TABLE IV-15.

ASCA #3

This area is considered to be a disturbed area because of wind-blown coal-fines. Hence, it is large (7.54 acres per Plate 2, but shown as 1.08 acres on TABLE IV-15 ASCA). Other than the construction of sediment pond "B" and the fence, there has not been any other activity to disturb the native vegetation. Hence, the area is well vegetated. As noted, a discrepancy exists in the disturbed area acreage for this ASCA when you compare the Plate 2 reported acreage with the TABLE IV-15 ASCA (Page 147) reported acreage, (i.e., 7.54 vs. 1.08). TABLE IV-15 was last revised in November '94. Straw bales run parallel with the fence that bisects the ASCA. These, in addition to those that have been placed in the drainage below sediment pond B provide the sediment control for part of this ASCA. Between the fence and the permit boundary, vegetation is the sediment control. The plan (Chapter 4, page 147, TABLE IV-15, ASCA) indicates straw bales/vegetation are the treatment for the area. Plate 2 indicates that the treatment for the area is straw bales only for the sediment control method for the entire area. As the bales are part of the design, their location(s) should be depicted on Plate 2 in order to meet the certified "as-built" drawing requirement. The permittee must revise Plate 2 to show that the area also utilizes vegetation, such that this does agree with TABLE IV-15 ASCA.

ASCA #4

ASCA #4 consists of 2.45 acres (Plate 2) (TABLE IV-15 ASCA says 2.69 acres) and lays SW of ASCA#3, but ENE of sediment pond "A". TABLE IV-15 ASCA indicates that straw bales and vegetation are the sediment control method, but no bales were seen. Plate 2 indicates that bales are the sole means of treatment. As in ASCA #3 there are wind-blown fines. The vegetation has not been disturbed and is providing sediment control. ASCA #4 contains topsoil storage pile "A", as determined by checking Plate 1.

ASCA #5

This size of this ASCA is not known because the acreage indicated on TABLE IV-15 ASCA does not correlate with the acreage depicted on Plate 2. ASCA 5 lies on the SW side of the permit area and treats the runoff from a small area adjacent to topsoil piles "B" and "E".

Treatment is indicated on Plate 2 to be via straw bales, although TABLE IV-15 ASCA indicates that vegetation is also utilized. Plate 2 should be corrected to reflect the usage of bales and vegetation as the utilized treatment methods. The methods should also be depicted either on Plate 2, or on a drawing of a larger scale that can effectively show where the treatment methods are implemented. All ASCA certified "as-built" drawings should be capable of being used as an inspection tool for that particular ASCA.

Bales effectively treat flow from ASCA 5 before it leaves the permit area. The large number of bales needed to treat the smaller area outside the bermed soil piles is disproportionate to the size of the area. These bales were recently enhanced with a secondary row of bales. The area is well vegetated, and it was suggested to the permittee that consideration be given to changing the treatment for this small area from straw bales to vegetation only. The permittee has elected to not submit the required hydrologic evaluation that would permit same, upon Division approval, to no longer maintain the straw bales in this area. Therefore, the inspection of the currently approved treatment method will continue.

SUMMARY:

Plate 2 is inaccurate for the following reasons:

1) Topsoil piles A, B, E, and F are not depicted as ASCA's, even though Plate 2 is labeled as a topography, water shed, and drainage map, (i.e., a surface drainage/treatments map).
2) The acreages and treatment methods listed at the bottom of Plate 2 do not correspond with those shown on TABLE IV-15 ASCA.
3) The methods of sediment control/effluent treatment are not depicted on Plate 2, although five ASCA areas are highlighted by intense cross-hatching. The scale of Plate 2 is one inch = 100 feet. In order to meet the certified "as-built" drawing requirement specified by Technical Directive 003A for ASCA's, the permittee should either depict the treatment methods and their respective locations for each ASCA on Plate 2, or submit new drawings for each ASCA on a larger scale which would allow a clear depiction of the treatments utilized as well as the location of the various treatment method. These would require P.E. certification in order to meet the certified "as-built" requirement.

Findings:

The requirements of **R645-301-731.211, -731.221,and –731.222.1** have been adequately addressed.

The information provided by the submitted Plate 2 is either inaccurate, missing or indistinguishable. The requirements of **R645-301-742.200** have not been adequately addressed.

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:

Mining Facilities Maps

Plate 2, as approved was found to be inaccurate or unclear, including, but not limited to:

- the road through ASCA #1 (north of the railroad tracks) is not shown.
- the disturbed area boundary and berm at the east end of ASCA #1 are not accurately shown. This is now barely visible.
- the drainage of water from the south part of ASCA #1 to sediment pond E is now clearly shown.
- the topsoil pile in ASCA #4 is not shown on Plate 2. This has not been corrected.
- the fences and roads south of or within ASCA's #3 and #4 are accurately shown on Plate 2.
- the sediment control method in ASCA's #3 and #4 is not clear.

Some, but not all, of these features are shown correctly on Plate 1, but Plate 2 has several problems, such as:

1) The treatment methods used are not depicted within the boundaries of the ASCA, for each of the five areas depicted.
2) The topsoil piles, which have been established as ASCA's are not depicted as such on Plate 2.
3) Notes at the bottom of Plate 2 do not correlate with the ASCA acreages shown on TABLE IV-15 ASCA in the MRP.
4) No treatment methods are shown on Plate 2 for the topsoil pile areas, which are classified as ASCA's. In order that Plate 2 can meet the certified "as-built" drawing requirement such that the maps can be used as an inspection tool, the treatments and their respective locations must be shown, and the map(s) must be P.E. certified.

Plate 13, Wildcat Topsoil Storage Pile Facilities, needs to be updated, as it presently depicts six topsoil piles and their associated soil volumes. Only four piles exist at the Wildcat site.

Findings:

R645-301-121.200, -512.100, -512.200, <u>All maps in the MRP</u>, but especially Plate 2, and Plate 13 should be checked for completeness and accuracy and corrected as needed.

<u>RECOMMENDATIONS:</u>

This submittal is deficient and needs to be returned to the permittee.

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