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**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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February 2, 2000

TO: Internal File

THRU: Pam Grubaugh-Littig, Permit Supervisor *pgl*

FROM: Wayne H. Western, Reclamation Specialist III *WHW*

RE: Midterm Review with Emphasis on Reclamation Bond Calculations, Andalex Resources Centennial Mine, ACT/007/019-MT99

**TECHNICAL ANALYSIS:**

**BONDING AND INSURANCE REQUIREMENTS**

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

**Analysis:**

**Determination of bond amount**

The Division was not able to complete the bond calculations because the Permittee did not give us enough information on earthwork costs. The Permittee divided the reclamation costs into three categories earthwork, demolition, and vegetation.

Earthwork calculations did not have enough information on dozer costs. The Permittee calculated dozer cost with assumptions about the haul distance and grade but did not give adequate backup. Information about earthwork costs is given in the *OSM Reclamation Handbook*. In addition the Permittee did not include productivity data for the front end loaders and trucks. Note: the Division will help the Permittee calculate productivity rates upon requests.

The Division reviewed the Permittee's demolition costs. The Permittee estimated the demolition cost to be \$215,276.66, while the Division calculated the cost to be \$281,140. The main reasons the Division's demolition costs are high are: 1) higher concrete demolition costs, 2) addition of debris disposal costs and 3) portal sealing costs. The Division used a unit cost of \$50.00 per cubic yard for concrete demolition and on site disposal. The concrete unit cost is based on current AML costs. Disposal costs for debris are not included in the *Means* demolition costs. The debris disposal unit costs were those used for the West Ridge mine. The Division and

MSHA require that all portals be sealed and backfilled for reclamation. The Permittee did not include the cost to seal ports. The Division included the portal sealing cost, which is based on AML costs. See attached sheets for details.

The Permittee did not include the cost of planting shrubs and tree in the vegetation cost estimate, or revegetation costs. The Division usually includes a 25% revegetation cost in the bond estimate for areas where vegetation failed to be established after the first planting.

The Division and the Permittee did not use the same indirect costs. The indirect costs used by the Division are: 1) maintenance and monitoring, 2) contingency, 3) engineering redesign, 4) startup costs including mobilization and demobilization and 5) contract management.

**Findings:**

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-830.140**, The Permittee must give the Division detailed information about the earthwork costs. The estimates must include cut and fill calculations, haul distances and grade, and productivity calculation for each machine for each phase of reclamation. The Permittee must also include the costs of planting trees and scrubs. Note: the Division will provide assistance to the Permittee with earthwork if requested.