Received 8-21-01

STATE OF MISSOURI
Bob Holden, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

MEMORANDUM

DATE: August 13, 2001

TO: Tony Petruska
EPA, Region VII

THROUGH: Dave Mosby
Hazardous Waste Program

40273664
Superfund

FROM: Larry Hopkins
Land Reclamation Program

SUBJECT: The Doe Run Company's Herculaneum Smelter Interim Slag Pile Runoff Control Plan Review Comments

The Land Reclamation Program (LRP) has reviewed the submittal by The Doe Run Company (DRC) in regard to the *Interim Slag Pile Runoff Control Plan* for the Herculaneum Smelter. The LRP has the following comments:

1. Run-on Control measures- The company proposes to do only maintenance to the Northern drainage swell to ensure positive drainage from east to west with a survey to verify the positive drainage of the swale. The submittal does not evaluate run-on of water from high water/flood events to preclude contact with the slag pile. The LRP recommends the submittal be revised to:

    A. Include a designed perimeter berm around the pile to prohibit water from coming in contact with the slag pile. Part of the design should address what design storm (year/hour precipitation event) would be employed to determine the interim height of the berm.
    B. Stabilize the berm by use of best management practices (i.e. mulching, vegetating, etc.)
    C. The statement is made under section 5.0, Conclusions, that ensuring proper drainage to the west will also ensure that the drainage swale is capable of handling the flow. Proper drainage alone will not ensure that the swale is capable of handling a flow. The swale needs to be evaluated and engineered designed and constructed to a storm event that will ensure that the structure is sufficient in design to preclude run-on to the slag pile.

2. Run-off Control Plan- The plan does not consider any of the attributes (i.e., hay bales, silt fences, etc,) as interim measures for runoff from the slag pile as defined in Section IV. of the Statement of Work (SOW), which is part of the Administrative Order on Consent (AOC). It appears that the conclusion of the company is that since there are no indications of particulate slag erosion on the pile or direct stormwater runoff from the slag pile there is no reason for improvements of the existing condition at the site. The wording in the SOW stating "measures to control run-off and erosion of particulate slag from the pile" and the submittal stating there is no runoff from the pile, is most likely technically correct. If the company's assertion is correct that the direct rainfall is not contributing to surface run-off by infiltration through the pile and surfacing at low points (toe of the pile) prior to entering the creek or river and from runoff from the steep side slopes of the pile; then the LRP would agree that no action as to surface runoff from the pile would be needed. However, doing a basic calculation (realizing that all water will not infiltrate the slag pile) using the annual average precipitation for Herculaneum, Missouri, of approximately thirty-eight (38) inches of rainfall, the twenty-seven (27) acre slag pile could receive as much as twenty-eight (28) million gallons of direct rainfall per year that could infiltrate the pile. If only ten percent actually infiltrated the pile there would still be over two million gallons of infiltrated water. Where does this water go? Where does it surface? The SOW also states that the company should focus on assessing the rate, extent and magnitude of nearby contamination. The water that infiltrates the pile and has the possibility of leaving (overland flow) the pile contaminated with heavy metals (not necessarily particulate matter/slag but dissolved metals in the water) would fall into this category. Without evaluating this attribute, the regulatory agencies can not make a determination of any type of treatment that may be required to reduce heavy metal loads to the creek and river prior to leaving the site. The LRP recommends that the plan be revised to:

   A. Include an evaluation of the water that has infiltrated and is leaving the slag pile.
   B. Include a designed water catchment in conjunction with the protective run-on berm around the pile discussed in 1.A. above. This would allow the sampling for heavy metals of any water leaving the pile.
   C. Include a designed water catchment on the West End of the northern swale for the same sampling reason as B. Also design and construct a rocked drop structure from the catchment basin to the confluence of Joachim Creek.

3. Security Measures- The plan proposes means to minimize access by vehicular traffic. It is proposed to extend portions of existing fence, replace existing steel cables with metal gates, and replace some sections of cable fencing with chain link. The plan does not address access by persons on foot (i.e. the low water crossing across Joachim Creek on the Northwest corner of the site) or by boat along either the creek or Mississippi River. To ensure that all access is minimized the plan should be revised to include a chainlink/cyclone fence around the entire perimeter of the slag area with locked gates at the three main access points identified in the plan.

LH/tw