

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
901 NORTH 5th STREET
KANSAS CITY, KANSAS 66101

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ENVIRONMENTAL PROTECTION
AGENCY-REGION VII
REGIONAL HEARING CLERK

IN THE MATTER OF:)
)
The Doe Run Transportation and Haul Routes,)
Southeastern Missouri)
)
THE DOE RUN RESOURCES CORPORATION)
)
Respondent.)
)
)
Proceeding under Section 7003 of the)
Resource Conservation and Recovery Act,)
42 U.S.C. § 6900, et seq., as amended.)
_____)

Docket No. RCRA-07-2007-0008

ADMINISTRATIVE ORDER ON CONSENT

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I. INTRODUCTION AND JURISDICTION

1. This Administrative Order on Consent (“AOC”) is entered into voluntarily by the United States Environmental Protection Agency (“EPA”) and Respondent The Doe Run Resources Corporation (“Respondent” or “Doe Run”). This AOC provides for the performance of work described below. The mutual objectives of EPA and Respondent are to identify and remedy any endangerment to health or the environment resulting from Respondent’s activities relating to the handling and transportation of Concentrate, Ore and lead-bearing materials, and to insure that the Work ordered and agreed to be designed and implemented to protect human health and/or the environment.
2. This AOC pertains to the Doe Run owned and/or operated smelters, mines, mills, and concentrators located in southeastern Missouri, including but not limited to the Buick mine and mill, Brushy Creek mine and mill, Fletcher mine and mill, Sweetwater mine and mill, #35 Mine, and #29 Mine; the Glover Smelter located at Highway 49 North in Annapolis, Iron County, Missouri; and the Herculaneum Smelter located at 881 Main Street in Herculaneum, Jefferson County, Missouri. This AOC also pertains to affected areas, including the Southeast Missouri Regional Port Authority (“SEMO Port”) located in Scott City, Scott County, Missouri; public roads used to haul concentrate, ore, or other lead-bearing materials between the mines, mills, smelters and the SEMO Port potentially affected by ongoing releases of lead as a result of transportation operations; and all areas in the vicinity of these facilities potentially affected by ongoing releases of lead as a result of transportation operations. These facilities and affected areas are hereinafter collectively referred to as “the Site”. This AOC provides for the performance of measures designed to prevent and respond to releases of lead bearing materials from the Site due to vehicles transporting those materials to, from, and between the facilities, onto publicly accessible streets, roads, and residential yards, including any Additional Work that may be required by Section XXIV (“Additional Work”) of this AOC, by Respondent. Nothing in this AOC shall be construed to require increases or decreases in the numbers of commercial carrier trucks utilized by Respondent.
3. EPA has determined that Respondent has contributed or is contributing to the past or present handling, storage, treatment, transportation or disposal of solid waste, or constituents of such waste, that may present an imminent and substantial endangerment to health or the environment.
4. Respondent shall finance and perform the Work in accordance with this AOC, plans, standards, specifications, and schedules set forth in this AOC or developed by Respondent and approved by EPA pursuant to this AOC.
5. EPA has notified the State of Missouri of this action pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

6. Respondent's participation in this AOC shall not constitute or be construed as an admission of liability. Respondent neither admits nor denies the factual allegations and legal conclusions set forth in this AOC.
7. EPA and Respondent acknowledge that this AOC has been negotiated by the parties in good faith and that this AOC is fair, reasonable, and in the public interest.
8. This AOC is issued under the authority vested in the Administrator of the United States Environmental Protection Agency ("EPA") by Section 7003(a) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973(a), and delegated to the Regional Administrators by EPA Delegation No. 8-22-A, and further delegated to the Region VII Air, RCRA, and Toxics Division Director by R7-8-022-A.
9. Respondent agrees to undertake and complete all actions required by the terms and conditions of this AOC. In any action by EPA or the United States to enforce the terms of this AOC, Respondent consents to and agrees not to contest the authority or jurisdiction of Region VII's Air, RCRA, and Toxics Division Director to issue or enforce this AOC, and agrees not to contest the validity of this AOC or its terms or conditions.

II. PARTIES BOUND

10. This AOC applies to and is binding upon Doe Run and Doe Run's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including, but not limited to, contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of any portion of the Site owned or operated by Respondent. Any change in the ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this AOC.
11. Respondent shall provide a copy of this AOC to any subsequent owners or successors before a controlling interest in ownership rights, stock, assets, of any portion of the Site owned or operated by Doe Run is transferred. Respondent shall be responsible for and liable for completing all of the activities required pursuant to this AOC, regardless of whether there has been a transfer of ownership or control of the Site or whether said activities are to be performed by employees, agents, contractors, subcontractors, laboratories, or consultants of Respondent. Respondent shall provide a copy of this AOC within seven (7) days of the Effective Date of this AOC, or the date that such services are retained, to all contractors, subcontractors, laboratories, and consultants that are retained to conduct or monitor any portion of the Work performed pursuant to this AOC. Respondent shall ensure that its contractors, subcontractors, laboratories, and consultants comply with this AOC.

12. Not later than 60 days prior to any voluntary transfer by Respondent of any interest in any portion of the Site owned or operated by Respondent, Respondent shall notify EPA of the proposed transfer. In the case of a voluntary transfer through a bankruptcy, Respondent shall notify EPA within 24 hours of the decision to transfer property. Respondent shall notify EPA of any involuntary transfers immediately upon Respondent's initial receipt of notice of any involuntary transfer. Not later than 3 days after any transfer, Respondent shall submit copies of the transfer documents to EPA.

III. DEFINITIONS

13. Unless otherwise expressly provided herein, terms used in this AOC that are defined in the RCRA statute shall have the meaning assigned to them in that statute. Whenever the terms listed below are used in this AOC the following definitions apply:

“AOC” shall mean this Administrative Order on Consent, any amendments thereto, and any documents incorporated by reference into this AOC.

“CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

“Concentrate” or “lead concentrate” shall mean a lead production intermediary product, derived from the physical concentration of lead sulfide ore that is comprised of approximately 70 to 80 percent (700,000 to 800,000 parts per million) lead sulfide, otherwise known as galena, which is produced at concentrator or mill facilities. Other metal concentrates, including, but not limited to, copper and zinc concentrates, are also produced.

“Day” shall mean a calendar day unless expressly stated to be a working day.

“Working Day” shall mean a day other than a Saturday, Sunday, or federal holiday. In computing any period of time under this AOC, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the end of the next working day.

“Doe Run facilities” shall mean Doe Run owned and/or operated mines, mills, concentrators, smelters, and other facilities located in southeastern Missouri, where concentrate, ore, or lead-bearing materials are transferred on or off vehicles, including, but not limited to, the Buick mine and mill, Brushy Creek mine and mill, Fletcher mine and mill, Sweetwater mine and mill, #35 Mine, and #29 Mine; the Glover Smelter located at Highway 49 North in Annapolis, Iron County, Missouri; the Herculaneum Smelter located at 881 Main Street in Herculaneum, Jefferson County, Missouri. For purposes of describing obligations at various facilities pursuant to this AOC, the term “Doe Run facilities” shall also

include Doe Run's concentrate handling and transportation activities at the SEMO Port located in Scott City, Scott County, Missouri.

"Effective Date" shall be the date on which EPA signs this AOC and provides a copy to Respondent, following the public comment period specified in Section XXVII.

"Lead-bearing material" shall mean all granular or semi-granular product or waste material which contains more than 400 milligrams per kilogram (mg/kg) of lead.

"Lead concentration" shall mean the proportion of lead in a given material, and is usually measured in parts per million (ppm) or milligrams per kilogram (mg/kg). A measurement in ppm is equal to a measurement in mg/kg.

"Lead loading" shall mean the amount of lead collected from a given area, and is usually measured in milligrams per square foot (mg/ft²).

"MDNR" shall mean the Missouri Department of Natural Resources.

"Ore" shall mean the geologic formation rock which is mined and processed in mills, concentrators, and/or smelters to produce lead and other heavy metals.

"Paragraph" shall mean a portion of this AOC identified by an Arabic numeral.

"RCRA" shall mean the Resource Conservation and Recovery Act (also known as the Solid Waste Disposal Act), as amended, 42 U.S.C. § 6901, *et seq.*

"Respondent" shall mean The Doe Run Resources Corporation.

"Section" shall mean a portion of this AOC identified by a roman numeral, and it may include one or more paragraphs.

"Site" shall mean the following facilities and affected areas: (1) Doe Run owned and/or operated smelters, mines, mills, and concentrators located in southeastern Missouri, including but not limited to the Buick mine and mill, Brushy Creek mine and mill, Fletcher mine and mill, Sweetwater mine and mill, #35 Mine, and #29 Mine; the Glover Smelter located at Highway 49 North in Annapolis, Iron County, Missouri; and the Herculaneum Smelter located at 881 Main Street in Herculaneum, Jefferson County, Missouri; (2) Doe Run's concentrate handling and transportation activities at the Southeast Missouri Regional Port Authority ("SEMO Port") located in Scott City, Scott County, Missouri; (3) public roads used to haul concentrate, ore, or other lead-bearing materials between the mines, mills, smelters and the SEMO Port, potentially affected by ongoing releases of

lead as a result of transportation operations; and (4) all areas in the vicinity of these facilities potentially affected by ongoing releases of lead as a result of transportation operations.

“State” shall mean the State of Missouri.

“Work” shall mean all the activities and requirements specified in this AOC.

IV. EPA’S FINDINGS OF FACT

Background

14. Respondent, The Doe Run Resources Corporation, owns and/or operates mining, milling, and concentrating facilities located in southeastern Missouri, including, but not limited to, the Buick mine and mill, Brushy Creek mine and mill, Fletcher mine and mill, Sweetwater mine and mill, #35 Mine and #29 Mine.
15. Respondent owns and operates a primary lead smelter in Herculaneum, Missouri. The smelter is approximately 52 acres in size and is located at 881 Main Street, Herculaneum, Jefferson County, Missouri. It has been operating for over 100 years and is the largest smelter of its kind in the United States.
16. Respondent utilizes a port facility, known as the SEMO Port Authority, in Scott City, Missouri, and contracts with SEMO Port for transferring its concentrate from commercial carrier trucks to commercial carrier barges for shipment down the Mississippi River.
17. Respondent is a New York Corporation in good standing and doing business in Missouri.
18. Respondent is engaged in the production of lead and other metals from what is commonly known as the New Lead Belt, or the Viburnum Trend, which began producing lead in southeastern Missouri in the mid-1960s and continues production to this day. Ore from the mines is crushed, milled, and processed in order to form lead and other metal concentrates. Lead concentrate commonly contains lead at concentrations greater than 70 percent (700,000 parts per million). This lead concentrate is transported by commercial carrier trucks over public roadways approximately 110 miles to the Herculaneum smelter for smelting and refining or approximately 120 miles to the SEMO Port to be loaded onto barges.

19. Respondent, or its predecessors, owned and/or operated some of the mining, milling and concentrating facilities in the New Lead Belt since production began there. As of August 1998, all of the current ore and concentrate mined and hauled in the New Lead Belt is from Respondent's operations.

Previous Herculaneum Transportation Enforcement and Investigations

20. For the last five or six years, the primary mode of transporting Ore, Concentrate, and/or lead bearing materials between the Doe Run facilities has been by commercial carrier trucks using public roads and streets. The primary haul route through the City of Herculaneum used by the commercial carrier trucks traveling to and from the smelter goes through residential areas and includes portions of Station Street, Brown Street, and Joachim Avenue. Use of that route was interrupted when the Joachim Street Bridge was closed at the direction of the Missouri Highway Department. The Joachim Street Bridge is scheduled for total replacement and reopening by April 2007. A secondary haul route is also used, which includes portions of Main Street and Joachim Avenue. Numerous residences are located along the hauling routes.
21. The 2002 Missouri SIP for lead requires Respondent to implement a Work Practice Manual to address fugitive lead emissions from the Herculaneum smelter. The Work Practice Manual approved under the 2002 SIP states that "Temporary sources of dust on paved surfaces outside the plant due to spillage of materials will be addressed so as to limit the reentrainment of those materials. Clean up to consist of those materials being loaded into transfer vehicles.... Final cleanup will incorporate the use of floor sweep compound which will should [sic] adhere to the smaller particles, making them easier to remove." Despite this requirement, dust high in lead was found on the public streets outside the smelter.
22. In December 2001, EPA and Respondent entered into an Administrative Order on Consent, Docket No. CERCLA-7-2002-0038 ("2001 AOC") for the Herculaneum Lead Smelter Site to respond to high levels of lead in the Herculaneum streets used as haul routes, high levels of lead in residential yards along the haul routes, and high levels of lead in residential interior dust. The 2001 AOC requires Doe Run to, among other things, expedite residential soil cleanups for yards with very high levels of lead and where children reside or previously resided, conduct interior dust cleanups, and develop and implement a Smelter Transportation and Materials Handling Plan to minimize, using best management practices, the release of lead to the community as a result of Doe Run's transportation and materials handling activities. "The Doe Run Herculaneum Smelter Transportation Plan and Materials Handling Plan" ("Transportation Plan") was approved by EPA in June 2002.

23. The Transportation Plan was updated and approved by EPA in July 2003, and sets forth, among other things, traffic zones and traffic flow within the smelter to reduce track-out of lead contamination, operation of an automated undercarriage truck wash for commercial carrier trucks to use prior to leaving the smelter, operation of dry street sweepers within Herculaneum, and a spill response policy.
24. Pursuant to the 2001 AOC, Doe Run continues to, among other things, implement the EPA-approved Transportation Plan, including operation of the automated undercarriage truck wash and street sweeping.
25. From March 2003 through June 2005, MDNR expressed concerns with the EPA-approved Transportation Plan as it related to a MDNR September 5, 2001 Cease and Desist Order and a MDNR April 2002 Settlement Agreement. MDNR noted specific failures of Doe Run's transportation practices, such as truck tailgates leaking concentrate onto Herculaneum streets; specific deficiencies of the Plan as it related to MDNR's Settlement Agreement requirements; and MDNR's view that any plan should "be holistic in scope, addressing operations from the mine to mill to smelter, and beyond", provide for leak-proof trucks, and provide for periodic re-paving of the haul roads in Herculaneum.

Recontamination of Herculaneum Streets

26. In September 2004, EPA met with Doe Run to discuss EPA's concerns with recontamination of residential yards within the vicinity of the Herculaneum smelter. EPA stated that Doe Run must implement additional measures to prevent recontamination of residential yards, home interiors and streets, including additional measures to prevent releases of lead from trucks hauling Doe Run's concentrate.
27. In 2004, the Joachim Avenue bridge was closed to truck traffic, meaning that truck traffic is using the Main Street haul route as the primary haul route to and from the smelter. The Main Street haul route passes through occupied residential neighborhoods outside the scope of MDNR's Voluntary Property Purchase area. The Joachim Avenue bridge is scheduled to be replaced and reopened by April 2007.
28. Since the beginning of operation of the truck wash at the Herculaneum smelter in October 2003, EPA has observed gray, metallic materials on the exit road of the truck wash. EPA is again observing gray, metallic dust on Herculaneum streets. In November 2006, Doe Run implemented use of a high efficiency regenerative air street sweeper.
29. Street sampling results from samples collected by EPA on June 6, 2006, from the exit road of the vehicle wash station at the Herculaneum facility revealed a lead concentration of 72,100 mg/kg and a lead loading of 7.7 mg/ft². Street sampling on the same date from the outbound traffic lane from the smelter at Main Street and Curved Street revealed a lead concentration of 83,200 mg/kg and a lead loading of 5.5 mg/ft². Recent sampling

results collected by Doe Run at the following locations indicate lead loadings (mg/ft²) as follows:

Date Collected	Station	Main & Curved	Wash Exit	
01/26/06	1.6	5.1	7.9	Concentrate screw failure and winter weather
02/28/06	2.3	10.0	11.7	Winter weather effect
04/27/06	1.3	2.5	7.4	
06/06/06	1.4	2.5	5.0	
07/07/06	0.08	2.3	3.0	

30. Respondent's Concentrate and lead bearing materials on and along the publicly traveled streets used to haul those materials in Herculanum is available for direct human exposure and may migrate and be tracked into nearby residents' yard and homes.
31. On December 29, 2005, MDNR expressed its concern to Doe Run about a number of issues related to the Herculanum smelter, including upward trends in soil recontamination data, elevated levels of lead in residential dust, continued elevated lead levels in road dust, observations of company operations, and transportation and materials handling. MDNR reminded Doe Run that it still had not addressed all of MDNR's concerns with transportation issues.
32. MDNR reiterated its position that Doe Run must address transportation and materials handling "on a company-wide and system-wide basis to prevent releases that may cause new contaminated sites, or which re-contaminate sites where cleanups have already been conducted." MDNR pointed out a number of events and observations that supported the need for Doe Run to provide for comprehensive, company, and system wide transportation and materials handling planning and procedures, including preventing instances of lead contamination of subsequent loads of sand, gravel, and soil; fugitive releases onto public roads from transportation of lead ore in open trucks; releases of concentrate onto public roads and streets; high levels of lead in dust on roads outside milling facilities and the Herculanum smelter; releases of concentrate into the harbor and on land at the SEMO Port; inadequate cleanup of ore and concentrate spills; and releases at truck drivers' homes and transport company facilities. Few, if any, additional measures have been taken by December 29, 2005 by Respondent. Since that time, Doe Run has undertaken the actions described in Paragraphs 33 and 34, including but not limited to a Best Management Practice Team, to address some of MDNR's concerns.
33. The Best Management Practices Team of Doe Run and its consultant AMEC was established by management in November 2004, and met in December 2004, to commence review of the company's practices and procedures for the pre-Remedial Investigation Transportation and Handling of Lead Concentrate. On February 17 and March 8, 2006, Doe Run met with MDNR and EPA, respectively, to present its findings on "Best Practices Transportation." The purpose of Doe Run's evaluation was to "[e]xplore

industry practices to load, transport, store, and unload bulk lead bearing materials to minimize releases; and [u]se sound fiscal and environmental decisions to generate best practices for movement of lead bearing materials...”. As a result, Doe Run stated that it was implementing, among other things, increased truck washing at mill sites, additional staff to assure truck washing and inspections, standard operating procedures for concentrate loading and shipping, a conveyor barge loading system and wash station at the SEMO Port, random audits, and a team to review and upgrade procedures. Doe Run committed to quarterly updates of its progress and on June 28, 2006, contacted EPA and MDNR to schedule a progress report meeting.

34. Respondent has already implemented and will continue to take actions, including the following activities:
- a. The top twelve inches of soil has been removed from approximately 440 residential yards and other properties, and replaced with soil containing less than 250 ppm lead; this activity is on-going.
 - b. Lead dust on and adjacent to haul roads has been, and continues to be, vacuumed up.
 - c. Contaminated roadside soil along haul routes has been removed.
 - d. Contaminated dust in houses has been removed.
 - e. High efficiency particulate air (“HEPA”)-filtered vacuum cleaners have been issued to residents by Doe Run and EPA.
 - f. Respondent has implemented or is in the process of implementing controls on most of its operations, and revising other operations to lower emissions.
 - g. Respondent has bought 205 properties in the most heavily contaminated zone, with the goal, among other goals, of reducing and eliminating exposure at residential properties. Offers to purchase have been extended to 22 property owners who have declined to sell in the most heavily contaminated zone (termed the “buyout zone”).
 - h. Respondent built and commenced operation of a truck wash at the Herculaneum smelter in October 2003. All trucks exiting the unloading area are washed prior to exiting onto public roads.
 - i. Respondent purchased and began operation of two Tymco regenerative air street sweepers in November 2006 which have a much higher efficiency for cleaning streets than the previously used mechanical street sweepers.

Transportation Routes Outside Herculaneum

35. The trucks carrying the ore, concentrate, or lead-bearing materials between the Doe Run facilities and the SEMO Port travel on public roads within southeastern Missouri. The public haul roads include, but are not limited to, Interstates 55 and 67, State Highways 32, 21, 49, and 72, and County Roads KK, Y, J, N, and B.
36. On February 6 through 9, 2006, EPA personnel conducted a Multimedia Compliance Evaluation Investigation at the Doe Run Buick Mine and Mill facility. EPA investigators observed trucks entering the facility carrying Ore, unloading, and then exiting the facility, and trucks carrying Concentrate leaving the facility.
37. During the investigation, EPA observed that ore trucks were driving through a truck wash which consisted of spray nozzles attached to hoses and concrete barriers. Some drivers drove through the truck wash slowly, while other drivers drove through quickly. The truck wash directed water at the outside of the truck at the wheel level and did not wash the undercarriage or any part of the truck above the wheels. No Doe Run employees were present to inspect or monitor the ore truck wash.
38. During the investigation, EPA observed that trucks loaded with Concentrate were driving through a truck wash near the Concentrate loading area which consisted of six, 2 ½ inch fire hoses, four stationed on the north side of the truck wash and two on the south side. The hose nozzles were directed at the wheels of the trucks, and not the undercarriage or treads of the wheels. A Doe Run employee used a separate fire hose to wash the sides and back of the truck as it drove through the truck wash. As the trucks exited the truck wash, they drove through an area receiving runoff and dust from the concentrate loading area and mill building.
39. During the investigation, EPA observed gray material, which appeared to be lead concentrate, on and along the sides of the road leading into and out of the facility, out to State Highway KK. On February 6 and 7, 2006, a Doe Run employee was using a shovel to scoop up some of the gray material along the road.
40. On February 21 and 22, 2006, EPA performed road and road shoulder sampling on and along publicly traveled roads outside Doe Run facilities, including Sweetwater, Fletcher, West Fork, Brushy Creek, Buick, Magmont, and Glover. Street dust samples revealed lead loadings as high as 3.89 mg/ft², 4.97 mg/ft², and 20.8 mg/ft² outside Brushy Creek, Buick and Fletcher respectively, with corresponding lead concentrations of 48,400 ppm, 26,700 ppm, and 46,800 ppm. Road shoulder samples, with the exception of Magmont, ranged from 11,900 ppm lead to 25,200 ppm lead.
41. Respondent's Concentrate, Ore, and lead bearing materials on and along the publicly traveled roads used to haul those materials in southeastern Missouri is available for

human exposure and may migrate and be tracked from the roads into nearby resident's yards and homes.

Spillage and Load Cross-Contamination

42. Commercial carrier truck beds, as well as the trucks, going out of service for Doe Run are now required to be washed prior to leaving service. However, in the past, commercial carrier trucks might pick up loads of sand, fertilizer, and agricultural lime immediately after hauling loads of Respondent's Concentrate, Ore, and lead bearing materials, without cleaning the trucks' beds between loads. In doing this, the subsequent load of sand, fertilizer, or agricultural may become contaminated with lead.
43. While overseeing a soil removal action being performed by Doe Run at the Viburnum Trend Haul Roads Site, Middlebrook Railhead Operable Unit, in October 2004, EPA collected samples of what appeared to be lead concentrate on the outside of several dump trucks being used to haul soil from the site to the soil repository. Analysis of this material revealed lead concentrations of 503,000 mg/kg, 868,000 mg/kg, and 91,000 mg/kg on three separate trucks used to haul soil on public highways. The material was thickly coated on the outside, the bed of the truck, on the tires, and on the mud flaps. In contrast, the highest sample of lead-contaminated soil hauled away from the Middlebrook operable unit was approximately 77,000 ppm.
44. In August 2005, EPA sampled sand delivered to a residence for an above-ground pool and play area in July 2005 by a commercial carrier truck. The sand contained dark gray materials and streaks. The residents reported that their grandchildren had black hands and/or black spots on their clothes after playing in the sand. Samples of the dark gray substance yielded lead concentrations of 430,000 ppm, 93,200 ppm and 21,200 ppm. Information gathered by EPA suggests that the sand was hauled in a truck which previously hauled concentrate and/or other lead bearing materials.
45. On August 27, 2005, A&K Trucking reported a release of lead sulfide along Highway 32 due to an overturned truck. In response to a Chemical Release Questionnaire sent by EPA, A&K Trucking reported that the spill was cleaned up, including all contaminated dirt. In response to a question from EPA regarding hazard evaluation and prevention of similar release events, A&K reported that they warned their drivers that losing control of the truck load is not uncommon; and spill response is required when a spill occurs. The material in the truck incident was actually sediment from dredging of the SEMO Port.

Respondent's Lead Presents a Human Health Threat

46. Analysis of the potential hazard to humans from ingestion of lead depends on accurate information on a number of key parameters, including lead concentration in environmental media, intake rates of each medium, and the rate and extent of lead

absorption by the body from an ingested medium, or “bioavailability”. Knowledge of lead bioavailability is important because the amount of lead that actually enters the body from an ingested medium depends on the physical-chemical properties of the lead and of the medium.

47. Bioavailability is typically measured as the fraction or percentage of lead that is absorbed by the body following an exposure of some specified amount, duration, and route, usually oral. Bioavailability of lead may be expressed as absolute bioavailability or relative bioavailability. Absolute bioavailability (ABA) is the ratio of the amount of lead absorbed compared to the amount ingested. Relative bioavailability (RBA) is the ratio of the ABA of lead present in some test material compared to the ABA of lead in a reference material, usually lead acetate, which is expected to completely dissolve when ingested.
48. When reliable site-specific data are lacking, the EPA IEUBK Model indicates a default RBA value of 60% for lead in soil or dust compared to soluble lead in water, for both children and adults, in evaluating potential risks to human health from ingestion of the soil or dust and computing risk-based cleanup levels. If site-specific data reveals that the RBA for lead in soil or dust is higher than 60%, this indicates that absorption of, and hazards from, lead in that soil or dust is higher, and site-specific cleanup levels may need to be adjusted downward. If site-specific data show that the RBA for lead in soil or dust is lower than 60%, the opposite is true, and site-specific cleanup levels may be adjusted upward.
49. In May 2002, Doe Run released results of its “Haul Road Risk Assessment” for Herculaneum. The Risk Assessment was prepared by Doe Run to evaluate the human health risks from exposure to newly produced lead ore concentrate in street dust as a result of walking along the haul roads used by the trucks hauling concentrate to the Herculaneum smelter. The Risk Assessment provided data that indicated the RBA of newly produced lead ore concentrate was 1% (Drexler 2001). Based upon this data, the Risk Assessment concluded that street dust lead concentrations of 95,000 ppm did not pose a significant health risk for adult or child pedestrians walking along the haul routes in Herculaneum.
50. Beginning in September 2004, EPA conducted a bioavailability analysis of lead from a composite of interior house dust samples collected from several Herculaneum residents’ vacuum bags, and a composite of soil samples collected from several Herculaneum residential yards. The composite soil and dust samples were assumed to primarily represent the impact of lead associated with facility air and fugitive emissions. In addition, at this same time EPA conducted a bioaccessibility study of lead in several other media, including slag, concentrate, and roadside soils. The results of EPA’s studies showed that the RBA of the composite soil sample was higher than the default RBA value, while the RBA of the composite dust sample was lower than the default RBA value. The bioaccessibility results of the four roadside soil samples ranged from 27 to

77% where only one of the four was higher than the default RBA value. Two samples of newly produced concentrate had a bioaccessibility of 3%, lower than the default RBA and approximately consistent with the prior Drexler (2001) study. EPA conducted a second bioavailability study to further examine whether lead concentrate becomes more bioavailable in a soil environment by mixing remediation fill dirt with Herculanum concentrate. The bioavailability studies concluded that the RBAs of the soil samples were greater than the default RBA value.

51. In conjunction with the 2005 bioavailability analysis, EPA conducted a lead characterization study, or “speciation”, on Herculanum community and smelter facility media in order to determine the sources of lead in residential contaminated soils and interior house dusts surrounding the smelter. Samples were collected from residential yards, residents’ vacuum bags (which were also used for the 2005 bioavailability analysis), and roadsides, and compared with samples from inside the smelter facility, slag piles, and haul routes.
52. Speciation results from smelter operation samples, including concentrate, slag, and baghouse dust, revealed a predominance of galena (PbS), cerussite (PbCO₃), anglesite (PbSO₄), anglesite+ (Pb_{1-x}SO₄-OH), native lead (Pb), and lead oxide (PbO).
53. Roadside and residential interior dust sample lead masses were dominated by galena, cerussite, and anglesite. Residential soil sample lead masses were dominated by galena, cerussite, manganese hydroxide, and phosphates. The residential soils contain source-traceable lead forms similar to those observed in interior dust samples, however, the “soil interacting” forms, manganese oxide, iron oxide, and phosphate, are more prevalent as is typical in developed soil environments. These compounds are the result of soluble lead sorbing onto manganese, iron, and/or phosphorus minerals in soils.
54. The speciation study report concludes that the roadside, residential interior dust, and residential soil samples all contain source-traceable lead forms from activities associated with smelter operations, including smelter-stack emissions, fugitive emissions from hauling and storage, and waste and concentrate spillage.
55. The speciation study report also concludes that neither paint nor gasoline is a significant lead contributor in Herculanum, although the conclusion regarding paint cannot be generalized beyond the properties from which the samples were collected because houses with suspected lead paint problems were excluded from the study. The report explains that speciation analyses cannot rule out leaded gasoline as a possible lead source, since the forms of lead emitted from leaded fuels are generally very soluble and would have released their lead to be sorbed onto the “soil interacting” forms. However, a number of factors suggest that this is unlikely to be a significant lead source: (1) numerous studies have shown that soil-lead concentrations from gasoline diminish rapidly to background levels within a few meters distance from a major road; (2) some studies have further

shown that unless traffic volumes are large, greater than 5000 vehicles per day, lead concentrations above background are not found; (3) traceable forms of lead that are found in residential soils are related to the smelter facility; and (4) residential lead concentrations are significantly greater than similar-size communities that have no mining/milling/smelting activities.

56. The ATSDR has concluded that exposure to lead can have adverse health effects on multiple human organ systems. Exposure to lead can affect adults, but children less than six years old, and unborn children whose mothers are exposed to lead, are especially vulnerable to the effects of lead poisoning. In children, the ATSDR has concluded that lead can cause adverse health effects on the central nervous system. Medical literature has reported an association between lead exposure and reduced intelligence quotient scores. Humans may be exposed to lead through ingestion of contaminated soils and dust or by inhalation of lead particles in the air. Lead has many toxic effects on human health and is a cumulative toxicant. A significant amount of lead that enters the body is stored in the bone for many years and can be considered an irreversible health effect.

V. EPA'S CONCLUSIONS OF LAW AND DETERMINATIONS

57. Based on the Findings of Fact set forth above, and an administrative record supporting this AOC, EPA has determined that:
- a. Respondent is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).
 - b. Lead concentrate, ore, and other lead-bearing materials on the public roads, road-sides and residential yards surrounding these facilities and between these facilities is discarded material, and thus a "solid waste" as defined in Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).
 - c. Imminent and Substantial Endangerment. The past and present handling and transportation of Concentrate, Ore, and other lead-bearing materials at the Site may present an imminent and substantial endangerment to human health and/or the environment within the meaning of Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).
 - d. Respondent has contributed or is contributing to the handling and transportation by allowing concentrate, ore, and lead bearing materials to be released onto roads and road-sides along the haul routes, and tracked out of and between the facilities by vehicle traffic.

- e. The actions required by this AOC may be necessary to protect human health because Respondent's handling and transportation of the concentrate, ore, and lead-bearing materials is continuing to release lead onto public roads and road-sides, making the lead accessible to nearby residents.

VI. ORDER ON CONSENT AND WORK TO BE PERFORMED

58. Based upon the administrative record for the Site, EPA's Findings of Fact (Section IV) and Conclusions of Law and Determinations (Section V) set forth above, and in consideration of the promises set forth herein, the following is hereby agreed to and ordered.
59. Respondent shall comply with all the provisions of the AOC, including all attachments and referenced documents.
60. Project Coordinators. Project Coordinators for Respondent and EPA are as follows:

For Respondent: Aaron W. Miller
Environmental Director of Missouri Operations
The Doe Run Company
881 Main Street
Herculaneum, MO 63048
(636) 933-3180

For EPA: Jim Aycock
RCRA Enforcement and State Programs
U.S. EPA, Region 7
901 N. 5th Street
Kansas City, KS 66101
(913) 551-7887

Respondent shall direct all submissions required by this AOC to EPA's Project Coordinator. Copies of all submissions required by this AOC shall be sent to Mr. Tom Judge, Missouri Department of Natural Resources, Hazardous Waste Program, P.O. Box 176, Jefferson City, Missouri 65102-0176. Each Project Coordinator shall be responsible for overseeing the implementation of this AOC. EPA and Respondent have the right to change their respective Project Coordinators. The other party must be notified in writing at least ten (10) days prior to the change. EPA retains the right to disapprove of any Project Coordinator named by Respondent. If EPA disapproves of a selected Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name and qualifications within two (2) working days following EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this AOC shall constitute receipt by Respondent.

61. Contractors. Respondent shall perform the Work itself, or retain one or more contractors to perform the Work. Should Respondent elect to conduct the Work itself, it shall notify EPA of its qualifications to perform the Work within fourteen (14) days of the Effective Date of this AOC. Should Respondent retain a contractor to conduct the Work, Respondent shall notify EPA of the name and qualifications of each contractor within fourteen (14) days of the Effective Date of this AOC. Respondent shall also notify EPA of the name and qualifications of any other contractor or subcontractor retained to conduct any portion of the Work under this AOC at least two (2) days prior to commencement of such portion of the Work. EPA retains the right to disapprove of any party Respondent selects to conduct the Work. If EPA disapproves of Respondent's selection, Respondent shall propose a different party to perform the Work and shall notify EPA of the name and qualifications of that party within ten (10) working days of EPA's disapproval.
62. Respondent shall implement measures, described below, to limit the release of Concentrate, Ore, and lead-bearing materials from vehicles transporting those materials to, from, and between Doe Run facilities, onto publicly accessible streets, roads and residential yards to amounts that will not accumulate to levels that can pose a threat to human health or the environment.
63. In addition to the actions described below, Respondent shall continue to implement the actions required by Administrative Order on Consent, Docket No. CERCLA-07-2002-0038, and the Transportation Plan and Materials Handling Plan ("TMHP") approved pursuant to that Administrative Order on Consent. If there is a conflict between Administrative Order on Consent, Docket No. CERCLA-07-2002-0038, the TMHP, and this AOC, this AOC shall take precedence.
64. Identification of Mines, Mills and Smelters. As of the Effective Date of this AOC, identified below are all Doe Run owned and/or operated primary smelters, mines, mills, and concentrators located in southeastern Missouri which are handling, storing, treating, transporting, or disposing of lead-bearing or other metal-bearing materials.
 - a. Buick Mine/Mill – HC 1, Box 1390, Highway KK, Boss, MO 65440. Mines lead, zinc, and copper sulfide ores and produces concentrates of the same in the mill.
 - b. Brushy Creek Mine/Mill – HC 1, Box 1352, Highway KK, Boss, MO 65440. Mines lead, zinc, and copper sulfide ores and produces concentrates of the same in the mill.
 - c. Fletcher Mine/Mill – HC 1, Box 274, Highway TT, Centerville, MO 63633. Mines lead, zinc, and copper sulfide ores and produces concentrates of the same in the mill.

- d. Sweetwater Mine/Mill – Rt. 1, Box 416, Highway B South, Ellington, MO 63638. Mines lead, zinc, and copper sulfide ores and produces concentrates of lead and zinc in the mill.
- e. Glover Smelter – Rt. 1, Box 60, Highway 49 North, Annapolis, MO 63620. Smelts and refines lead and lead alloys. Facility currently utilized for storage of lead and copper concentrates.
- f. Herculaneum Smelter – 881 Main Street, Herculaneum, MO 63048. Smelts and refines lead and lead alloys.
- g. #35 Mine (Casteel) – HC 82, Box 526, Highway 32, Bixby, MO 65439. Mine produces lead, zinc, and copper sulfide ores and ships to mills for processing.
- h. #29 Mine – 10774 Wells Road, Highway C, Steelville, MO 65565. Mine produces lead, zinc, and copper sulfide ores and ships to mills for processing.

65. Vehicle Wash Stations.

- a. Within one year of the Effective Date of this AOC, Respondent shall install and begin to operate enclosed vehicle wash stations at all Doe Run facilities where Concentrate, Ore, or lead-bearing materials are transferred on or off vehicles, and those vehicles enter/exit those facilities above ground. The vehicle wash stations shall be designed and built to be fully and safely operational during all seasons of the year, including freezing temperatures. All vehicle wash stations shall be located at or near the exit of the facility property and have backup wash systems in the event that the primary wash systems are inoperative. Nothing in this AOC shall be construed to require construction of additional vehicle wash stations (except where Respondent begins operation of an additional smelter, mine, mill or concentrator).
- b. All vehicle wash stations shall be designed to wash the vehicles' undercarriage, sides, backs and tailgates, tires, and wheels. In the alternative, the vehicle wash stations shall be designed to wash the vehicles undercarriage, and Respondent shall install manually-operated pressure washers at the vehicle wash stations capable of washing each side, back, wheel well, and wheel of the vehicle. The operator of the manually-operated pressure washer will rewash tailgates, wheel wells, tires and wheels of each truck, and will visually inspect each truck and rewash any areas of visible contamination. The manually-operated pressure washers shall be rated at a minimum pressure of 2200 psi. At the existing vehicle wash station at the Herculaneum smelter, Respondent shall implement the actions in this sub-paragraph within thirty (30) days of the Effective Date of this AOC.

- c. Every vehicle leaving a Doe Run facility (1) after loading or unloading Concentrate, Ore, or lead-bearing materials; (2) after entering or crossing areas within a Doe Run facility utilized by vehicles which have not yet been washed in accordance with this AOC after loading or unloading Concentrate, Ore, or lead-bearing materials; or (3) after entering or crossing areas within a Doe Run facility where Concentrate, Ore, or lead-bearing materials are otherwise handled or stored; must first be washed in accordance with Paragraph 65 of this AOC and the Vehicle Wash SOP to be developed in accordance with this AOC, and then dried utilizing an air pressure blower superior or equivalent to the existing Herculaneum system.
- d. Wash water and other lead-containing material generated at the vehicle wash stations shall be collected, treated, and discharged/disposed in accordance with all applicable state and federal requirements and permits.
- e. Within thirty (30) days of the Effective Date of this AOC, Respondent shall submit to EPA for approval a Standard Operating Procedure for the vehicle wash stations ("Vehicle Wash SOP"). The Vehicle Wash SOP shall detail at a minimum, the procedures, time of wash, manual spraying procedures, and backup procedures during system failures. Respondent shall implement the Vehicle Wash SOP upon EPA approval. Respondent shall adjust the Vehicle Wash SOP as procedures are modified in accordance with other provisions of this AOC. Respondent shall notify EPA of any changes to the Vehicle Wash SOP within ten (10) business days. To the extent that adjustments are not inconsistent with EPA's approval of the Vehicle Wash SOP or this AOC, Respondent need not acquire EPA approval for those adjustments. Respondent agrees that any changes to the Vehicle Wash SOP which result in an increasing trend in the wipe sampling process mean will be disbanded.
- f. Vehicle Wash Clearance Goal.
 - i. Commencing thirty (30) days after EPA approval of the Vehicle Wash SOP pursuant to Paragraph 65.e. or approval of a wipe sampling QAPP pursuant to Paragraph 65.f.vi., whichever is later, Respondent shall perform wipe sampling of 1,000 consecutive trucks which carried Concentrate after they exit the Herculaneum vehicle wash station. Samples shall be taken and analyzed for lead pursuant to Paragraph 65.f.vi. Within ten (10) business days of receipt of the data from the 1,000 wipe samples, Respondent shall calculate the mean and an upper control limit. The upper control limit shall be set at three Sigma from the centerline of the initial 1,000 sample distribution ("Clearance Goal").
 - ii. Commencing thirty (30) days after start-up of each new vehicle wash station required by Paragraph 65.a., Respondent shall perform wipe sampling of 30 consecutive Concentrate haul trucks after they exit each vehicle wash station.

Samples shall be taken and analyzed for lead pursuant to Paragraph 65.f.vi. These first 30 samples from each vehicle wash station shall be used to initiate the 30-sample rolling average calculation for each respective vehicle wash station.

- iii. Following each initial sampling period at each vehicle wash station, Respondent shall, on a random number basis, wipe sample 10% of Concentrate haul trucks exiting each vehicle wash station per month. A minimum of 15% of the total monthly 10% requirement shall be taken each week at each facility.
- iv. Analytical data for the samples for each day at each vehicle wash station shall be evaluated, plotted, and the revised 30-sample rolling average calculated and compared to the Clearance Goal within two (2) business days.
- v. If more than one consecutive rolling average calculation at any vehicle wash station exceeds the Clearance Goal, Respondent shall:
 - (A) Within thirty (30) days conduct a root cause analysis, develop Corrective Actions, and submit a copy of the analysis to EPA. Corrective Actions shall be implemented on a schedule approved by EPA.
 - (B) Power wash each truck after it exits the vehicle wash station in accordance with Paragraph 65.b. and e.
 - (C) Wipe sample each consecutive Concentrate haul truck in accordance with Paragraph 65.f.vi.
 - (D) If after implementation of Corrective Actions, the 30-sample rolling average returns to at or below the sample mean from Paragraph 65.f.i., Respondent shall incorporate the Corrective Actions into the Vehicle Wash SOP and may return to the wash procedures and wipe sampling frequency set forth in Paragraphs 65.b. 65.e., and 65.f.iii. If after implementation of Corrective Actions, the 30-truck rolling average does not return to at or below the sample mean from Paragraph 65.f.i., Respondent shall notify EPA within 24 hours, repeat the analysis in subparagraph (A) and continue implementation of subparagraphs (B) and (C).
- vi. Wipe samples will be collected from a randomly selected tire sidewall at the tread. Analysis will utilize quick turnaround, X-Ray Fluorescence (“XRF”) technology or ICP-AES analysis. Samples will be collected in accordance with the specific XRF standard operating procedures for the brand and model

number of XRF instrument selected for use. Ten percent (10%) of the wipe samples will be sent to an independent laboratory for correlation analysis. Respondent shall submit for EPA review and approval a Quality Assurance Project Plan (“QAPP”) for the wipe sampling in accordance with this subparagraph and Section VIII (Quality Assurance) of this AOC.

- vii. All wipe sampling data collected pursuant to Paragraph 65.f. shall be provided to EPA in the monthly monitoring report required in Paragraph 70. In addition, Respondent shall provide wipe samples to EPA upon request and/or to provide analyses of those samples.
- viii. Respondent shall schedule meetings with EPA two months after two new wash stations are built and operating, and twelve months following that meeting to present analytical data and statistical analysis, discuss the Vehicle Wash SOP, and request any recommendations from EPA on improvements to the vehicle wash systems. If Respondent cannot implement any particular recommendation or the recommendation is inconsistent with the commitments provided for in this AOC, Dispute Resolution may be invoked to resolve the matter.
- g. Respondent’s West Fork Flubor® process demonstration facility (“West Fork demonstration facility”) shall be excluded from the requirements of Paragraph 65.a., b., c., and f. as long as lead concentrate delivery to the West Fork demonstration facility is limited to 16 tons per 24 hour day. Every vehicle leaving the West Fork demonstration facility after unloading concentrate shall first have its sides, back, tailgate, tires, wheels, and wheel wells washed using a manually-operated pressure washer rated at a minimum pressure of 2200 psi.

66. Roadway and Street Washing.

- a. Beginning with start-up of each vehicle wash station at each Doe Run facility, Respondent shall thoroughly pressure wash the first seventy (70) feet of roadway leading from the exit side of the vehicle wash stations twice during each day and at the end of each day. At the existing vehicle wash station at the Herculaneum smelter, Respondent shall implement the actions in this sub-paragraph within five (5) days of the Effective Date of this AOC. During periods when freezing temperatures may form snow, ice or hazardous conditions, street washing operations may be suspended.

- b. Within thirty (30) days of the Effective Date of this AOC, Respondent shall pressure wash the entire section of Main Street in Herculaneum, Missouri, from U.S. Highway 61 and 67, also known as Commercial Boulevard, to the entrance of the Herculaneum smelter. Alternatively, Respondent may apply asphaltic sealant to the entire section of Main Street in Herculaneum, Missouri, from U.S. Highway 61 and 67, also known as Commercial Boulevard, to the entrance of the Herculaneum smelter.
- c. Within thirty (30) days of the Effective Date of this AOC, the section of Main Street from Station Street to Broadway in Herculaneum, Missouri, shall be pressure washed a minimum of once a week as long as Concentrate, Ore, or lead-bearing materials are being delivered to and from the Herculaneum smelter via vehicle transport utilizing this street. This requirement shall apply as long as this street remains open to public traffic and is being utilized for delivery of Concentrate, Ore, or lead-bearing materials to the Herculaneum smelter. This requirement may be discontinued when vehicle wash stations are fully operational at all Doe Run facilities in accordance with Paragraph 65 above.
- d. All pressure washers used for roadway and street washing shall be rated at a minimum pressure of 2200 psi.
- e. All wash water and other lead-containing material generated as a result of street and roadway washing shall be collected, treated, and discharged/disposed in accordance with all applicable state and federal requirements and permits.
- f. Use of the Regenerative Air Street Sweeper may be substituted for roadway and street washing requirements in subparagraphs a., b., and c., however, if the Regenerative Air Street Sweeper does not provide equivalent, or superior, reduction of lead concentration and loadings as compared to street washing, EPA will notify Respondent and Respondent shall return to implementation of the roadway and street washing requirements in subparagraphs a., b., and c. Alternative cleaning technology that provides equivalent, or superior, street cleaning results may be substituted for roadway and street washing requirements in subparagraphs a., b., and c., upon approval by EPA. If the Regenerative Air Street Sweeper or an EPA-approved alternative cleaning technology is unavailable at any time, Respondent shall return to implementation of these street washing requirements.
- g. On days when the ambient air temperature in Herculaneum is below freezing during daylight hours, Respondent shall clean the streets specified in Paragraph 66 using a HEPA filtered high efficiency vacuum, e.g. a "Super Sucker" vacuum, or an alternative cleaning technology approved pursuant to subparagraph f.

- h. Washing of the streets in Herculaneum or application of asphaltic sealant will replace the requirement to use the Ultra-Vac on the road edges as currently stated in the EPA-approved TMHP, for that portion of the street and for that six-month time period.
- i. Respondent shall operate its street sweepers in Herculaneum in accordance with the Administrative Order on Consent, Docket No. CERCLA-07-2002-0038, and the TMHP approved pursuant to that Administrative Order on Consent, and with the manufacturer's recommendations. As part of the monthly monitoring report required in Paragraph 70, Respondent shall provide EPA with information on usage locations, usage times, and the hours and days of usage.

67. Enclosure of Materials During Transit.

- a. Within thirty (30) days of the Effective Date of this AOC, 100% of contract carrier trucks used to transport Concentrate, Ore, or lead-bearing materials generated at and transported to and from Doe Run facilities on public roadways and streets shall be equipped with high density polyethylene bedliners (except Ore trucks), seals on tailgates and grain doors, tail gate locks and tail gate security bolts with wing nuts.
- b. Within thirty (30) days of the Effective Date of this AOC, Respondent shall implement truck inspection procedures for all trucks hauling Concentrate, Ore, or lead-bearing materials to and from all Doe Run facilities. Inspection procedures shall address truck bed and bedliner integrity; leakage from tailgates, including seals, grain doors, bolts and wing nuts; tarp position and condition; and any material spillage on the outside of the truck, including the sides, tailgate, tires, wheels and mudflaps. Trucks shall be inspected prior to being loaded with Concentrate, Ore, or lead-bearing materials and shall be inspected for leakage at the receiving facility prior to being unloaded. All trucks found to be deficient in one or more areas of the inspection shall immediately be washed, including the truck bed, wipe sampled, and removed from Doe Run service until the truck's deficiencies are remedied. Documentation of each truck inspection shall be maintained by Doe Run. An inspection form shall be submitted for approval by EPA within ten (10) days of the Effective Date of this AOC.
- c. Trucks transporting Concentrate, Ore, or lead-bearing materials to and from Doe Run facilities shall be tarped while in transit on public streets and roadways, when they are loaded and when they are empty, unless removed from dedicated service as provided in subparagraph d.
- d. Upon the Effective Date of this AOC, contract carrier trucks used for transporting Concentrate, Ore, or lead-bearing materials to and from Doe Run facilities may not transport any other materials unless and until the trucks are thoroughly cleaned, including the truck bed interior. All surfaces, including undercarriage and truck bed

interiors of vehicles shall be thoroughly washed to remove all residual lead-bearing materials prior to hauling materials other than Concentrate, Ore, or lead bearing material.

- e. Within thirty (30) days of the Effective Date of this AOC, contracts between Doe Run and the commercial carriers transporting Concentrate, Ore, or lead-bearing materials for Doe Run shall stipulate that no other material may be transported by trucks otherwise dedicated to hauling materials for Doe Run unless washed in accordance with this AOC. The contracts shall also stipulate that any confirmed breach of this provision shall result in the permanent discharge of the truck driver from Doe Run's transportation activities.
- f. All wash water and other lead-contaminated material generated as a result of washing pursuant to subparagraphs b. and d. shall be collected treated, and discharged/ disposed in accordance with all applicable state and federal requirements.

68. Spill Response.

- a. Within thirty (30) days of the Effective Date of this AOC, Respondent shall submit to EPA for approval a Spill Response Plan prepared by the commercial carrier. At a minimum, the plan must provide procedures and response times for the clean-up of all spills of Concentrate, Ore, or lead-bearing material from transportation vehicles engaged in transporting these materials between Doe Run facilities. The Plan shall include, but not be limited to, provisions for collecting bulk spillage, pavement washing, soil excavation and restoration, reporting, waste disposal procedures, wash water collection, and disposal procedures, confirmation sampling, and worker training.
- b. Within fourteen (14) days of receipt of EPA's approval of the Spill Response Plan, Respondent shall by contract direct the commercial carrier to implement the Plan.

69. Residential Property and Street Sampling.

- a. Beginning May 2007, and annually thereafter, Respondent shall sample the yard surface soil and interior dust of all occupied residential properties along the Concentrate, Ore, or lead-bearing material haul route(s) being utilized at the time of sampling in the Herculaneum city limits east of U.S. Highway 61 and 67, for which Respondent or EPA secured access pursuant to Section XI. This sampling shall be conducted as long as Concentrate, Ore, or lead-bearing materials are being transported to and from the Herculaneum smelter by vehicle transportation.
- b. Beginning May 2007, and annually thereafter, Respondent shall sample the yard surface soil and interior dust of each occupied home within the Herculaneum

Voluntary Property Purchase area (“VPPA”), as defined by the 2002 Missouri Department of Natural Resources Settlement Agreement with Doe Run, for which Respondent or EPA secured access pursuant to Section XI. Sampling of each of the occupied homes in the VPPA pursuant to this subparagraph shall occur unless already being sampled pursuant to subparagraph a. above. The sampling required by this subparagraph shall be required until the area is in attainment with the National Ambient Air Quality Standard for lead, and the EPA-approved statistical trend analysis indicates surface soil lead concentrations are no longer trending upwards.

- c. Beginning May 2007, and annually thereafter, Respondent shall sample the yard surface soil of each home identified in the list provided to Respondent for which EPA has secured access, unless already being sampled pursuant to subparagraphs a. or b. above. At EPA’s direction, residences may be substituted, added to, or subtracted from the list due to availability of access, demolition of the house, or children moving into this area.
- d. Within three (3) months of the Effective Date of this AOC, and every six (6) months thereafter, Respondent shall perform road and street sampling along Concentrate, Ore, or lead-bearing material haul routes leading from all Doe Run facilities. A minimum of six (6), evenly spaced samples shall be collected from the outbound lanes of each of the haul routes being used within the city limits of Herculaneum. A minimum of six (6), evenly spaced samples shall be collected from the outbound lane of the first mile of public roads used as haul roads, leading from each of the other Doe Run facilities. The first of each of these minimum of six (6) samples from each facility shall be taken on the public street or road immediately outside each Doe Run facility. Sample locations shall be approved by the Project Manager, and samples shall be collected and analyzed for both lead concentration and lead loading.
- e. Within forty-five (45) days after the completion and opening of the Joachim Avenue bridge over Joachim Creek, Respondent shall conduct roadside surface soil sampling along Joachim/Main Street from Broadway to U.S. Highway 61 and 67. A minimum of nine (9) composite surface soil samples, evenly spaced along the stretch of road, shall be collected within five (5) feet of the road.
- f. All surface soil sampling, interior dust sampling, and road sampling undertaken pursuant to Paragraph 69 shall be conducted in accordance with Paragraph 82.

70. Monthly Monitoring Reporting.

- a. Within forty-five (45) days of the Effective Date of this AOC and by the 10th day of every calendar month thereafter, Respondent shall submit a monthly monitoring report for activities occurring during the previous month which includes, but is not limited to, analytical data collected pursuant to this AOC, along with corresponding

times, dates, locations, vehicle tag numbers and companies; details of equipment failures at the vehicle wash stations and loading and unloading stations; schedules for repairs of broken equipment; details on any failures to clean haul route roadways and streets; details of any spill or leak incidents and the resulting cleanup; progress on construction of the vehicle wash stations; details on operation of the street sweeper; progress in decreasing the number of contract carrier trucks used for transporting concentrate, ore, or lead-bearing materials; and details on any changes to the mode of transportation of concentrate, ore, or lead-bearing materials by Respondent.

- b. Copies of the monthly monitoring report shall be submitted in accordance with Paragraph 60.
- 71. Respondent shall undertake and complete all of the Work in compliance with the terms of this AOC, pursuant to RCRA § 7003, 42 U.S.C. § 6973, and the National Contingency Plan, 40 C.F.R. Part 300. All of the Work performed under this AOC shall be under the direction and supervision of Respondent's Project Coordinator and shall be in accordance with the terms of this AOC.
- 72. The Work undertaken pursuant to this AOC shall be conducted in compliance with all applicable federal and state requirements, EPA guidance, policies and procedures, and with this AOC, and is subject to EPA approval.
- 73. Health and Safety Plan. Respondent shall develop a Health and Safety Plan for review by EPA. It shall be implemented during the Work performed under this AOC. The Health and Safety Plan shall comply with applicable Occupational Safety and Health Administration (OSHA) regulations. EPA will review and comment on, but will not approve, the Health and Safety Plan.

VII. EPA APPROVAL OF DELIVERABLES

- 74. Deliverables required by this AOC shall be submitted to EPA for approval or modification pursuant to Paragraph 75. All deliverables must be received at EPA by the due date specified in this AOC or by schedules developed pursuant to this AOC.
- 75. After review of any deliverable that is required pursuant to this AOC, EPA will: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA will not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within twenty-one (21) days, except where EPA determines that to do so would cause serious disruption to the Work or where EPA has disapproved within the previous six months related submission(s) due to material defects and EPA determines that the deficiencies in

the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

76. In the event of approval, approval upon conditions, or modification by EPA, pursuant to this Section, Respondent shall proceed to take any action required by the deliverable, as approved or modified by EPA subject only to Respondent's right to invoke the Dispute Resolution procedures set forth in Section XVI (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 75(c) and EPA determines the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XVII (Penalties).
77. Resubmission of Deliverable. Upon receipt of a notice of disapproval, in whole or in part, pursuant to this Section, Respondent shall, within twenty-one (21) days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVII (Penalties), shall accrue during the 21-day opportunity to cure period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in this Section.
78. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 75(d), Respondent shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties for the deficient portion of the deliverable under Section XVII (Penalties).
79. In the event that a resubmitted deliverable, or portion thereof, is disapproved by EPA, EPA may again require Respondent to correct the deficiencies, in accordance with the preceding Paragraphs. Subject to Paragraph 75, EPA also retains the right to modify the plan, report or other item. Respondent shall implement any action as required in a deliverable which has been modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XVI (Dispute Resolution).
80. If upon resubmission, a deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such deliverable timely and adequately unless Respondent invokes the dispute resolution procedures set forth in Section XVI (Dispute Resolution) and EPA's action to disapprove or modify a deliverable is overturned pursuant to that Section. The provisions of Section XVI (Dispute Resolution) and Section XVII (Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVII (Penalties).

81. All deliverables required to be submitted to EPA under this AOC, shall, upon approval or modification by EPA, be incorporated into and be enforceable under this AOC. In the event EPA approves or modifies a portion of a deliverable required to be submitted to EPA under this AOC, the approved or modified portion shall be enforceable under this AOC.

VIII. QUALITY ASSURANCE

82. EPA approved the "Quality Assurance Project Plan for a Site Characterization at the Herculaneum Lead Smelter," dated September 10, 2001 ("September 2001 QAPP"). EPA also approved an "Addendum to the Quality Assurance Project Plan (QAPP) for the Herculaneum Lead Smelter Site," dated March 19, 2002 ("March 2002 Addendum to the 2001 QAPP"), related to interior sampling. EPA also approved an "Addendum to the Quality Assurance Project Plan for Site Characterization for the Herculaneum Lead Smelter Superfund Site," dated August 30, 2006 ("August 30, 2006 Addendum to the 2001 QAPP"). EPA also approved the "Quality Assurance Project Plan for Lead Deposition at Herculaneum, Missouri," dated August 2002 ("August 2002 QAPP"). Respondent shall follow the September 2001 QAPP, as amended by the March 2002 Addendum to the 2001 QAPP, for all interior dust sampling and analytical activities undertaken pursuant to this AOC. The surface soil sampling protocol under the September 2001 QAPP as clarified by the August 30, 2006 Addendum to the 2001 QAPP is the subject of an October 19, 2006 Request for Correction submitted by Doe Run pursuant to EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency ("EPA Guidelines"). Any corrections deemed appropriate upon a final determination on the RFC after all appeals are taken will be incorporated in the September 2001 QAPP as clarified by the August 30, 2006 Addendum to the 2001 QAPP and Doe Run shall follow those protocols for all soil sampling and analytical activities pursuant to this AOC thereafter. Prior to a final determination on the RFC, Respondent shall follow the September 2001 QAPP as clarified by the August 30, 2006 Addendum to the 2001 QAPP for all surface soil sampling and analytical activities undertaken pursuant to this AOC. In addition, Doe Run shall have the right to collect additional soil samples from the entire top one inch of surface soil, as Doe Run interprets the August 2002 QAPP to require. Respondent shall follow the Draft "Standard Operating Procedure for Road Sampling at the Herculaneum Lead Smelter Site," dated July 28, 2003, for all road and street sampling and analytical activities undertaken pursuant to this AOC. In addition, within fifteen (15) days of the Effective Date of this AOC, Respondent shall submit to EPA for review and approval a QAPP for vehicle wipe sampling and analysis, and shall follow such QAPP upon approval by EPA. Doe Run reserves its rights to dispute EPA's characterization and interpretation of the above documents and the use of any data collected pursuant to this AOC.

83. All sampling and analyses performed pursuant to this AOC shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (“QA/QC”), data validation, and chain of custody procedures in accordance with appropriate EPA guidance, including “EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations” (EPA QA/R5. EPA/240/B-01/003 (March 2001)) and “Guidance for Quality Assurance Plans” (EPA QA/G5. EPA/240/R-02/009 (December 2002)), as well as any other such applicable guidance identified by EPA. The QAPP shall describe the sampling procedures that will be used, the proposed sampling locations, and shall ensure that samples collected are analyzed using EPA-approved protocols. In addition, the QAPP shall describe the number and type of samples to be collected, the method(s) of collection and analysis, and the criteria for determining sampling locations.
84. Upon request by EPA, Respondent shall allow EPA or its authorized representatives to take split or duplicate samples of any samples collected by Respondent while performing Work pursuant to this AOC. EPA shall have the right to take any additional samples that it deems necessary.
85. Respondent shall ensure that all laboratories it uses for analyses participate in a QA/QC program equivalent to the program that EPA follows. Respondent shall, upon EPA’s request, make arrangements for EPA to conduct a performance and QA/QC audit of the laboratories chosen by Respondent, whether before, during, or after sample analyses. Upon EPA’s request, Respondent shall have its laboratories perform analyses of samples provided by EPA to demonstrate laboratory QA/QC and performance. If the audit reveals deficiencies in a laboratory’s performance or QA/QC, Respondent shall submit a plan to address the deficiencies and EPA may require resampling and additional analysis.

IX. ADMINISTRATIVE DOCUMENTATION

86. EPA retains the responsibility for the issuance of any decision documents related to the Site. EPA will provide Respondent with copies of all decision documents for the Site.
87. Submission of Documentation. EPA will determine the contents of the administrative record file. EPA will maintain an administrative record file. The administrative record supporting this AOC and the Work to be performed shall be available for public review at the EPA, Region VII office, 901 N. 5th Street, Kansas City, Kansas; Herculaneum City Hall, 1 Parkwood Court, Herculaneum, Missouri; and Viburnum City Hall, #1 Missouri Avenue, Viburnum, Missouri.

X. DOCUMENT CERTIFICATION

88. Any report or other document submitted by Respondent pursuant to this AOC which makes recommendations as to whether or not further actions are necessary, or makes any

representation concerning Respondent's compliance or noncompliance with any requirement of this AOC shall be certified by a responsible corporate officer of Respondent. A responsible corporate officer means: a president, secretary, treasurer, or vice-president in charge of a principal business function, or any other person who performs similar policy or decision-making functions.

89. The certification required by Paragraph 88 above, shall be in the following form:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____
Name: _____
Title: _____
Date: _____

XI. SAMPLING, ACCESS AND DATA AVAILABILITY

90. All results of sampling, testing, modeling, or other data generated (including raw data if requested) by Respondent, or on Respondent's behalf, pursuant to this AOC shall be validated by Respondent and submitted to EPA with the next required monthly monitoring report required by Paragraph 70. EPA will make available to Respondent data generated by EPA for the purposes of oversight of the Work unless it is exempt from disclosure by any federal or state law or regulation.
91. Respondent shall orally notify EPA at least twenty (20) days prior to conducting field sampling. At EPA's request, Respondent shall allow split or duplicate samples to be taken by EPA or EPA's representative.
92. Site Access. Pursuant to Section 3007(a) of RCRA, 42 U.S.C. § 6927(a), Respondent shall provide access to any portion of the Site owned, operated, or utilized by Respondent at reasonable times to EPA, EPA's contractors and oversight officials. Within thirty (30) days of the Effective Date of this AOC, contracts between Respondent and the commercial carriers transporting Concentrate, Ore, or lead-bearing materials shall stipulate that access for wipe sampling of the trucks while at Doe Run's facilities shall be provided to Respondent, EPA, EPA's contractors and oversight officials. Respondent

shall also provide access at reasonable times to EPA, EPA's contractors and oversight officials to all records and documentation in its possession or control, including those records and documents in the possession or control of Respondent's contractors and employees, related to the conditions at the Site and the actions conducted pursuant to this AOC. Respondent shall use its best efforts to gain access to areas owned by or in the possession of someone other than Respondent, as necessary to implement this AOC, as described in Paragraph 94. Such access shall be provided to EPA, its contractors and oversight officials. These individuals shall be permitted to move freely about the Site and appropriate off-site areas in order to conduct actions, including, but not limited to, sampling, that EPA determines to be necessary. EPA, its contractors and oversight officials shall notify Respondent of their presence on the Site by presenting their credentials, and shall comply with all health and safety plans and regulations.

93. Pursuant to this Section, any denial of access at reasonable times to any portion of the Site property owned, operated or utilized by Respondent, including access for wipe sampling of trucks while at Doe Run facilities, where a request for access was made for the purposes of enforcing the requirements of RCRA or this AOC shall be construed as a violation of the terms of this AOC subject to the penalty provisions outlined in Section XVII of this AOC.
94. Access Agreements. Except as provided in Paragraph 69.c., where action under this AOC is to be performed in areas owned by, or in possession of, someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within forty-five (45) days of the Effective Date of this AOC, or as otherwise specified, in writing, by the EPA Project Coordinator. Any such access agreement shall provide for access by EPA and its representatives to move freely in order to conduct actions that EPA determines to be necessary. The access agreement shall specify that Respondent is not EPA's representative with respect to any liabilities associated with activities to be performed. Respondent shall provide EPA's Project Coordinator with copies of any access agreements. Respondent shall immediately notify EPA if after using Respondent's best efforts it is unable to obtain such agreements within the time required. Best efforts as used in this Paragraph shall include, at a minimum, a certified letter from Respondent to the present owner of such property requesting access agreements to permit Respondent, EPA, and EPA's authorized representatives to enter such property, and the offer of payment of reasonable sums of money in consideration of granting access. Respondent shall, within ten (10) days of its receipt of a denial of access, submit in writing, a description of its efforts to obtain access. EPA may, at its discretion, assist Respondent in obtaining access. In the event EPA obtains access, Respondent shall undertake the Work on such property. In the event EPA chooses not to obtain access, no stipulated penalties will accrue pursuant to Section XVII for failure to conduct Work on such property.

95. Confidential Business Information. Respondent may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this AOC under 40 CFR § 2.203 in the manner described at 40 CFR § 2.203(b) and substantiated with the information described at 40 CFR 2.204(e)(4). Information EPA determines is confidential will be given the protection specified in 40 CFR Part 2. If no such claim or substantiation accompanies the information when it is submitted to EPA, it may be made available to the public by EPA or the state without further notice to Respondent. Respondent may not assert confidentiality claims with respect to any data related to Site conditions, sampling, monitoring or the Work performed pursuant to this AOC.
96. Privileged Documents. Documents, reports or other information prepared pursuant to the requirements of this AOC shall not be entitled to attorney-client or other privilege. However, Respondent may assert that other documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege in lieu of providing documents, Respondent shall provide EPA with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the author's name and title; (4) the name and title of each addressee and recipient; (5) a description of the contents; and (6) the privilege asserted by Respondent.
97. All data, information, and records created or maintained relating to any solid or hazardous waste found at the Site shall be made available to EPA upon request unless Respondent asserts a claim that such documents are legally privileged from disclosure. Respondent shall have the burden of demonstrating to EPA by clear and convincing evidence that such privilege exists.
98. No claim of confidentiality shall be made with respect to any information required to be collected or prepared pursuant to this AOC, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.
99. Nothing in this AOC shall be construed to limit EPA's right of access, entry, inspection, and information gathering pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

XII. COMPLIANCE WITH OTHER LAWS

100. Respondent shall perform all actions required pursuant to this AOC in accordance with all applicable local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations in a timely manner so as not to delay the Work required by this AOC.

XIII. EMERGENCY RESPONSE

101. In the event of any action or occurrence during the performance of the Work that constitutes an emergency situation or may present an immediate threat to human health and the environment, Respondent shall immediately take all appropriate action to minimize such emergency or threat in accordance with all applicable provisions of this AOC, and shall immediately notify the EPA's Project Coordinator. Respondent shall take such immediate and appropriate actions in consultation with EPA's Project Coordinator. Respondent shall then submit to EPA written notification of such emergency or threat at the Site within three (3) calendar days of such discovery.
102. These reporting requirements are in addition to, not in lieu of, reporting under CERCLA Section 103(c) and Section 304 of the Emergency Planning and Community Right-to-know Act of 1986, 42 U.S.C. Sections 11001 et seq.

XIV. RECORD RETENTION

103. Respondent shall preserve all documents and information, including raw data, relating to the Work performed under this AOC, or relating to any solid waste or hazardous waste found at the Site, for 10 years following completion of the Work required by this AOC.
104. Respondent shall acquire and retain copies of all documents that relate to the Site that are in the possession of its employees, agents, accountants, contractors, or attorneys.
105. Respondent shall make available to EPA all employees and persons, including contractors, who engage in activities under this AOC and ensure their cooperation with EPA with respect to this AOC.
106. After the 10 year retention period and 90 days before any document or information is destroyed, Respondent shall notify EPA that such documents and information are available to EPA for inspection, and upon request, shall provide the originals or copies (at no extra cost) of such documents and information to EPA. Notification shall be in writing and shall reference the effective date, caption, and docket number of this AOC and shall be addressed to the Director, Air, RCRA, and Toxics Division. In addition, Respondent shall provide documents and information retained under this Section at any time before expiration of the 10 year retention period at the written request of EPA.
107. All documents pertaining to the work performed under this AOC shall be stored by Respondent in a centralized location at the Site, or an alternative location mutually approved by Respondent and EPA, to promote easy access by EPA or its representatives.

XV. REIMBURSEMENT OF OVERSIGHT COSTS

108. EPA reserves the right to bring an action against Respondent under any applicable law for recovery of all future response costs, including oversight costs that have not been reimbursed by Respondent. Subject to the rights of Respondent in Paragraph 134, EPA reserves the right to bring an action against Respondent for past costs incurred by EPA with respect to the Site that have not been reimbursed by Respondent and any costs incurred by EPA in connection with any other response activities conducted at this Site. Oversight costs shall mean direct costs associated with time and travel costs of EPA personnel; contractor costs; compliance monitoring, including the collection and analysis of split samples; inspection of Work required by this AOC; discussions regarding dispute resolution that may arise as a result of this AOC; and review of plans, reports and other documents submitted pursuant to this AOC; that EPA incurs after the Effective Date of this AOC in monitoring and supervising Respondent's performance of the Work to determine whether such performance is consistent with the requirements of this AOC. Respondent shall pay oversight costs incurred after the Effective Date of this AOC, not to exceed one hundred thousand dollars (\$100,000) the first year and seventy-five thousand dollars (\$75,000) per year thereafter.
109. Respondent agrees to pay EPA for oversight costs associated with the implementation and execution of this AOC, in the following manner:
- a. Upon EPA's written request, Respondent shall pay such costs. On a periodic basis, EPA will send Respondents a bill requiring payment that includes an itemized cost summary.
 - b. Payments for all EPA oversight costs shall be made by money order, certified check, company check, wire transfer, or cashier's check payable to the Treasurer of the United States within thirty (30) days of Respondent's receipt of EPA's request, and shall be submitted to the following address:

U.S. EPA, Region 7
P.O. Box 371099M
Pittsburgh, PA 15251
 - c. The Docket No. of this AOC should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, certified check, company check, wire transfer, or cashier's check to EPA's Project Coordinator.
 - d. If EPA does not receive payment within thirty (30) days of Respondent's receipt of EPA's request for oversight costs, interest shall accrue at the Current Value of Funds Rate established by the Secretary of the Treasury. An additional penalty of six

percent (6 %) per annum on any unpaid principal shall be assessed for any oversight cost payment which is overdue for ninety (90) days or more pursuant to 31 U.S.C. § 3717.

- e. Respondent may dispute all or part of a bill for oversight costs submitted pursuant to this AOC pursuant to Section XVI (Dispute Resolution). If any dispute over costs is resolved before payment is due, the amount will be adjusted as necessary. If the dispute is not resolved before payment is due, Respondent shall pay the full amount of the uncontested costs to EPA as specified in Paragraph 106.b. on or before the due date. Within the same time period, Respondent shall pay the full amount of the contested costs into an interest-bearing escrow account and transmit a copy of the check(s) to the persons listed in Paragraphs 106.b. and c. above. Respondent shall ensure that the prevailing party or parties in the dispute shall receive the amount upon which they prevailed from the escrow funds plus interest within ten (10) days after the dispute is resolved.

XVI. DISPUTE RESOLUTION

110. Respondent shall raise any disputes concerning the Work or Additional Work required under this AOC to EPA (excluding any decision document(s) issued by EPA), in writing, within fifteen (15) working days after receiving written notice from EPA regarding any aspect of the Work required under this AOC that Respondent disputes. EPA and Respondent shall expeditiously and informally attempt to resolve any disagreements. EPA and Respondent Project Coordinators shall first confer in an effort to resolve the dispute. If the Project Coordinators are unable to informally resolve the dispute within three (3) working days of the first conference, Respondent shall notify EPA, within five (5) working days, in writing of its objections. Written objections shall identify Respondent's objections, state the basis for those objections, and provide all data, analyses and information relied upon by Respondent. EPA and Respondent then have an additional fourteen (14) working days from EPA's receipt of the objections to reach agreement. If an agreement is not reached within the fourteen (14) working days, Respondent may request in writing, within five (5) working days, a determination resolving the dispute by EPA Region 7's Regional Judicial Officer ("RJO"). The request should provide all information that Respondent believes is relevant to the dispute. If such request is submitted within five (5) working days, the RJO shall issue a determination in writing. EPA's final decision shall be incorporated into and become an enforceable part of this AOC and shall no longer be subject to dispute pursuant to this AOC. Respondent shall proceed in accordance with the RJO's decision regarding the matter in dispute, regardless of whether Respondent agrees with the decision. If Respondent does not agree to perform or does not actually perform the Work in accordance with EPA's decision, EPA reserves the right in its sole discretion to conduct the Work itself, seek reimbursement from Respondent, seek enforcement of this AOC, seek stipulated penalties, and/or any other appropriate relief. Any disputes arising under this AOC are

not subject to judicial review until such time as EPA seeks to enforce this AOC, including an action for penalties on an action to compel Respondent's compliance with the terms and conditions of the AOC.

111. If EPA and Respondent reach agreement on the dispute at any stage, the agreement shall be set forth in writing and shall, upon signature of both parties, be incorporated into and become an enforceable part of this AOC.
112. The existence of a dispute and EPA's consideration of matters placed in dispute shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this AOC during the pendency of the dispute resolution process except as agreed by EPA in writing. The invocation of dispute resolution does not stay the accrual of stipulated penalties under this AOC.

XVII. PENALTIES

113. Any time Respondent fails to comply with any requirement of this AOC, Respondent shall be liable for stipulated penalties in the amounts set forth in this Section, provided, however, that EPA may elect to bring an action for civil penalties for violations of this AOC in lieu of seeking stipulated penalties, and unless a Force Majeure event has occurred as defined in Section XVIII (Force Majeure) and EPA has approved the extension of a deadline as required by Section XVIII (Force Majeure). Compliance with this AOC by Respondent shall include completion of an activity or any matter under this AOC in accordance with this AOC, and within the specified time schedules approved under this AOC.
114. Stipulated Penalty Amounts.
 - a. A stipulated penalty of \$1,000 per violation per day shall accrue for any noncompliance identified below:
 - i. Failure to submit any deliverables required by this AOC in a timely or adequate manner, other than submission of the monthly monitoring report.
 - ii. Failure to perform surface soil, interior dust, road/street, or wipe sampling as required by this AOC in a timely or adequate manner.
 - iii. Failure to conduct roadway and street washing as required by this AOC in a timely or adequate manner.
 - iv. Failure to implement truck inspection procedures in accordance with Paragraph 67.b. in a timely and adequate manner.

- b. A stipulated penalty of \$2,000 per violation per day shall accrue for any noncompliance identified below:
 - i. Failure to construct vehicle wash stations in accordance with Paragraphs 65.a. and b. in a timely and adequate manner.
 - c. A stipulated penalty of \$750 per violation per day shall accrue for any noncompliance identified below:
 - i. Failure to submit a written monthly monitoring report in a timely or adequate manner.
 - ii. Any other violation of the AOC other than those milestones identified in Paragraphs 114.a., 114.b., or 114.c.i.
115. Penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of correction of the violation or completion of the activity. Payment shall be due within thirty (30) days of receipt of a demand letter from EPA. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this AOC, even where those violations concern the same event (e.g., submission of a deliverable that is late and is of unacceptable quality).
116. If payment is not made within thirty (30) days of the date of Respondent's receipt from EPA of a written demand for payment of the penalties or of the date of agreement or decision resolving the dispute, interest shall begin to accrue on any unpaid stipulated penalty balance beginning on the first day after Respondent's receipt of EPA's demand letter, or the date of the agreement or decision resolving the dispute, and will accrue until such penalties and interest have been paid in full. Interest shall accrue at the Current Value of Funds Rate established by the Secretary of the Treasury. An additional penalty of six percent (6 %) per annum on any unpaid principal shall be assessed for any stipulated penalty payment which is overdue for ninety (90) days or more. The applicable rate of interest shall be the rate in effect at the time the interest accrues pursuant to 31 U.S.C. § 3717.
117. Respondent shall make payments by money order, certified check, company check, wire transfer, or cashier's check payable to the Treasurer of the United States within thirty (30) days of Respondent's receipt of EPA's request, and shall be submitted to the following address:

U.S. EPA, Region 7
P.O. Box 371099M
Pittsburgh, PA 15251

118. The Docket No. of this AOC should be clearly typed on the check to ensure proper credit. Respondent shall send simultaneous notices of such payments, including copies of the money order, certified check, company check, wire transfer, or cashier's check to EPA's Project Coordinator.
119. Respondent may dispute an EPA determination that it failed to comply with this AOC by invoking the dispute resolution procedures under Section XVI (Dispute Resolution) unless the matter has already been in or is the subject of dispute resolution. Penalties shall accrue but need not be paid during the dispute resolution period. If Respondent does not prevail upon resolution, all penalties shall be due to EPA within thirty (30) days of resolution of the dispute. If Respondent prevails upon resolution, no penalties shall be paid. In the event that Respondent prevails in part, penalties shall be due on those matters in which Respondent did not prevail.
120. Neither the invocation of dispute resolution nor the payment of penalties shall alter in any way Respondent's obligation to comply with the terms and conditions of this AOC. The stipulated penalties set forth in this Section do not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the terms and conditions of this AOC.
121. No payments under this Section shall be deducted for federal tax purposes.
122. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this AOC.
123. Violation of any provision of this AOC may subject Respondent to civil penalties of at least six thousand five hundred dollars (\$ 6,500.00) per violation per day. The assessment of penalties are provided for in Section 7003(b) of RCRA, 42 U.S.C. § 6973(b), as adjusted pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Debt Collection Improvement Act of 1996, 28 U.S.C. § 2461 note.

XVIII. FORCE MAJEURE

124. Respondent agrees to perform all requirements under this AOC within the time limits established under this AOC, unless the performance is delayed by a force majeure. For purposes of this AOC, a force majeure is defined as any event arising from causes beyond the control of Respondent, or any entity controlled by Respondent or Respondent's contractors, which delays or prevents performance of any obligation under this AOC despite Respondent's best efforts to fulfill the obligation. The requirement that the Respondent exercise "best efforts to fulfill the obligation" includes using best efforts to

anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event: (1) as it is occurring, and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. Force majeure does not include financial inability to complete the Work, increased cost of performance, changes in Respondent's business or economic circumstances, or inability to attain media cleanup standards.

125. If any event occurs or has occurred that may delay the performance of any obligation under this AOC, whether or not caused by a force majeure event, Respondent shall orally notify EPA within 48 hours of when Respondent knew or should have known that the event might cause a delay. Such notice shall: (1) identify the event causing the delay, or anticipated to cause delay, and the anticipated duration of the delay; (2) provide Respondent's rationale for attributing such delay to a force majeure event; (3) state the measures taken or to be taken to prevent or minimize the delay; (4) estimate the timetable for implementation of those measures; and (5) state whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health or the environment. Respondent shall undertake best efforts to avoid and minimize the delay. Failure to comply with the notice provision of this Paragraph and to undertake best efforts to avoid and minimize the delay shall waive any claim of force majeure by Respondent. Respondent shall be deemed to have notice of any circumstances of which its contractors had or should have had notice.
126. If EPA determines that a delay in performance or anticipated delay in fulfilling a requirement of this AOC is or was attributable to a force majeure, then the time period for performance of that requirement will be extended as deemed necessary by EPA. If EPA determines that the delay or anticipated delay has been or will be caused by a force majeure, then EPA will notify Respondent, in writing, of the length of the extension, if any, for performance of such obligations affected by the force majeure. Any such extensions shall not alter Respondent's obligation to perform or complete other tasks required by this AOC which are not directly affected by the force majeure.
127. If EPA disagrees with Respondent's assertion of a force majeure, then Respondent may elect to invoke the dispute resolution provision, and shall follow the procedures set forth in Section XVI (Dispute Resolution). In any such proceeding, Respondent shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that Respondent's best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of this Section. If Respondent satisfies this burden, then EPA will extend the time for performance as EPA determines is necessary.

XIX. RESERVATION OF RIGHTS

128. Notwithstanding any other provisions of this AOC, the United States retains all of its authority to take, direct, or order any and all actions necessary to protect public health or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste or constituents of such wastes, on, at, or from the Site, including but not limited to the right to bring enforcement actions under RCRA, CERCLA, and any other applicable statutes or regulations.
129. EPA reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this AOC, including without limitation the assessment of penalties under Section 7003 of RCRA, 42 U.S.C. § 6973.
130. This AOC shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, claims, and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory, or common law authority of the United States.
131. This AOC is not intended to be nor shall it be construed to be a permit. Respondent acknowledges that EPA's approval of the Work does not constitute a warranty or representation that the Work will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this AOC shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, or federal laws and regulations.
132. Notwithstanding any other provision of this AOC, no action or decision by EPA pursuant to this AOC, including without limitation, decisions of the Regional Administrator, the Director of the Air, RCRA and Toxics Division, or any authorized representative of EPA, shall constitute final agency action giving rise to any right of judicial review prior to EPA's initiation of a judicial action to enforce this AOC, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this AOC.
133. By entry into this AOC, Respondent neither admits or denies any of the Findings of Fact, Conclusions of Law, or terms hereof, and agrees only to perform the commitments of this AOC and not to contest the jurisdiction of EPA to enter into and enforce the performance of this AOC. Respondent specifically does not intend and objects to the use of this AOC or performance by Respondent of the terms hereof as an indication of any fault, liability or damages in any proceeding by any third party.

134. Except as provided in this AOC, Respondent expressly reserves all rights of defense, review and appeal, including but not limited to the judicial review of any final agency action by EPA; defense of any enforcement by EPA of the terms of this AOC following completion of the Dispute Resolution provisions of this AOC; or any defense, review, or claims which Respondent may have against any party or entity including the United States which are not barred by Federal law or this AOC.

XX. OTHER CLAIMS

135. By issuance of this AOC, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA will not be deemed a party to any contract, agreement or other arrangement entered into by Respondent or their officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, contractors, or consultants in carrying out actions pursuant to this AOC.
136. Respondent waives all claims against the United States relating to or arising out of conduct of this AOC, including, but not limited to, contribution and counterclaims.
137. Respondent shall bear its own litigation costs and attorney fees.

XXI. INSURANCE

138. Prior to commencing the on-site Work under this AOC, Respondent shall secure, and shall maintain in force for the duration of this AOC and for two (2) years after the completion of all activities required by this AOC, comprehensive general liability insurance and automobile insurance with limits of \$2 million dollars, combined single limit. Upon request by EPA, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. If Respondent demonstrates by evidence satisfactory to EPA that its contractors and subcontractors maintain insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by the contractors and subcontractors.

XXII. INDEMNIFICATION

139. Respondent agrees to indemnify, save and hold harmless the United States, its officials, agents, contractors, employees, and representatives from any and all claims or causes of action: (a) arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, Respondent's directors, officers, employees, agents, successors, assigns, heirs, trustees, receivers, contractors, or consultants in carrying out actions pursuant to this AOC; and (b) for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any persons for

performance of the Work on or relating to the Site, including claims on account of construction delays. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including litigation costs arising from or on account of claims made against the United States based on any of the acts or omissions referred to in the preceding sentence.

XXIII. MODIFICATION OF THIS AOC

140. If at any time during the implementation of the Work, Respondent identifies a need for a compliance date or schedule modification, Respondent shall submit a memorandum documenting the need for the modification to the EPA Project Coordinator. EPA in its discretion will determine if the modification or revision is warranted and may provide written approval or disapproval. Any approved modified compliance date or schedule modification is incorporated by reference into this AOC.
141. Except for modification of any compliance date or schedule as provided for in Paragraph 140, this AOC may only be modified by the mutual agreement of EPA and Respondent. Any agreed modifications shall: be in writing; be signed by both parties; have as their effective date the date on which they are signed by EPA; and be incorporated into this AOC.
142. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain such formal approval as may be required by this AOC, and to comply with all requirements of this AOC unless it is formally modified. Any deliverables, plans, technical memoranda, reports, specifications, schedules and attachments required by this AOC are, upon approval by EPA, incorporated into and enforceable under this AOC.

XXIV. ADDITIONAL WORK

143. EPA may determine or Respondent may propose that additional work is necessary in addition to or in lieu of the tasks included in Section VI (Order on Consent and Work to be Performed) to meet the objectives set forth in Section I (Introduction and Jurisdiction). Additional Work shall be limited to modifications to the vehicle wash stations, wash equipment, and wash procedures; modifications to street and road washing frequency and locations along the haul route being utilized by Doe Run leading from the Herculaneum smelter within the Herculaneum city limits; modifications to truck inspection procedures; and modifications to sampling locations and frequency along haul routes being utilized by Doe Run leading from the Herculaneum smelter within the Herculaneum city limits and the first mile of public road leading from each of the other Doe Run facilities. EPA will notify Respondent or Respondent will notify EPA, in writing, of that determination and will specify the basis for such determination. Within fifteen (15) days after the receipt of

such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss any additional work. Within thirty (30) days of receipt of the determination, Respondent shall submit for EPA approval a Work Plan for such additional work. Upon approval of a Work Plan for any additional work, Respondent shall implement the Work Plan for any additional work in accordance with the schedule and provisions contained therein. The Work Plan for any additional work shall be incorporated by reference into this AOC.

XXV. TERMINATION AND SATISFACTION

144. The provisions of this AOC shall be deemed terminated and satisfied by Respondent upon written notice from EPA that Respondent has demonstrated that all of the terms of this AOC, including any additional work as may be performed pursuant to Section XXIV (Additional Work) and payment of any stipulated penalties demanded by EPA under Section XVII (Penalties), have been addressed to the satisfaction of EPA. Termination of this AOC shall not terminate Respondent's obligation to comply with: Sections XI (Sampling, Access and Data Availability); XIV (Record Retention); XIX (Reservation of Rights); and XXII (Indemnification) of this AOC.

XXVI. SEVERABILITY

145. If a court issues an order that invalidates any provision of this AOC or finds that Respondent has sufficient cause not to comply with one or more provisions of this AOC, Respondent shall remain bound to comply with all provisions of this AOC not invalidated or determined to be subject to a sufficient cause defense by the court's order.

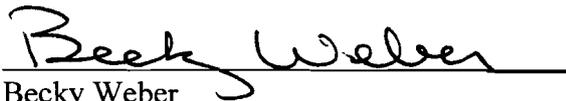
XXVII. PUBLIC COMMENT

146. EPA shall provide public notice and a reasonable opportunity for public comment on the proposed settlement. After consideration of any comments submitted during a public comment period of not less than thirty (30) days (which EPA may extend), EPA may withhold consent or seek to amend all or part of this AOC if EPA determines that comments received disclose facts or considerations which indicate that this AOC is inappropriate, improper, or inadequate.

XXVIII. EFFECTIVE DATE

154. The effective date of this AOC shall be the date on which EPA signs this AOC and provides a copy to Respondent, following the public comment period specified in Section XXVII. The undersigned representative of Respondent certifies that it is fully authorized to enter into the terms and conditions of this AOC and to bind the party it represents to this document. Respondent agrees not to contest the validity or terms of this AOC, or the procedures underlying or relating to it in any action brought by the United States, including EPA, to enforce its terms or seek penalties for its violation. Respondent retains its right to assert claims against any third parties with respect to this site.

IT IS SO ORDERED AND AGREED.



Becky Weber
Director
Air, RCRA and Toxics Division
Region VII
U.S. Environmental Protection Agency

Date: 5/8/07

For The Doe Run Resources Corporation:



Name: *Jerry L. Pyatt*
Title: *Chief Operating Officer*

Date: 5/2/07