

Documentation of Environmental Indicator Determination  
in accordance with EPA Interim Final Guidance 2/5/99

RCRA Corrective Action  
Environmental Indicator (EI) RCRA Info code (CA725)

Current Human Exposures Under Control

Facility Name: Doe Run - Buick  
Facility Address: Highway KK, Boss, MO 65440  
Facility EPA ID #: MOD059200089

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

If data are not available skip to #6 and enter "IN" (more information needed) status code.

The Doe Run Company – Buick Resource Recovery facility (Doe Run - Buick) is a RCRA permitted facility at which lead bearing hazardous waste is recycled through a secondary smelter (processes waste) operation to produce lead for reuse in products. The facility is located on about 665 contiguous acres of which approximately 125 acres in the southeast portion is active. The facility is located near Boss, Missouri, in Iron County about two miles southwest of Bixby, Missouri.

The site lies within the Mark Twain National Forest along the western flank of the St. Francois Mountains in the Missouri Ozarks. The site is bordered on the north, west, and south by forest and on the east by underground mining and milling operations. The area is characterized by sparse population.

The original Buick smelter commenced operation in 1968. The original facility was a primary smelter (processed ore) with a sinter plant, blast furnace, refinery operation, air pollution control facilities, an acid production plant, and a wastewater collection and treatment system. Primary smelting/sintering ceased in 1991.

In 1989, Doe Run – Buick received a Missouri Hazardous Waste Management Permit to store and treat batteries and other lead bearing hazardous waste. The facility began processing as a secondary lead smelter (processes waste) in 1991. The secondary smelting facilities include a battery processing building, two wire reclamation sweat furnaces, a reverberatory furnace, and a rotary melter, in addition to the original smelter facilities.

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RCRA RECORDS

Doe Run - Buick is an active hazardous waste treatment and storage facility. Hazardous waste management activities at the facility include storage of hazardous wastes in containers and containment buildings, miscellaneous treatment and corrective action. Doe Run - Buick is an active secondary lead processing facility that recycles lead-acid batteries and other lead-bearing materials into metal products such as lead ingots in industrial furnaces. Doe Run - Buick processes about 125,000 tons of batteries and 15,000 tons of miscellaneous lead bearing materials per year and produces in excess of 140,000 tons of lead per year.

As regulated by state and federal Law, Doe Run - Buick has investigated their site under the RCRA corrective action process and is currently developing corrective measures for documented contaminant releases. Figure N-1 shows the location of the SWMUs and AOCs identified at the Doe Run Buick Resource Recovery Facility. A revised Resource Conservation and Recovery Act Facility Investigation (RFI) work plan was submitted by Doe Run in November 1991 and approved in August 1992. The RFI was conducted and an RFI report was submitted in March 1994. A supplemental RFI was conducted in 1998 and a report on the supplemental RFI was submitted in August 1999. Conditional approval of the RFI was granted in December 2000 and a Corrective Measures Study (CMS) Plan was submitted to the Department in February 2001. In June and July of 2005, the department and Doe Run - Buick initiated a emissions fallout investigation focusing on homeowners in the immediate downwind directions. The purpose of this investigation was to determine yard excavation areas to remove contamination greater than action levels that impacts receptors. The department has not yet approved the CMS Plan for corrective action.

Additional corrective action submittals include a revised Interim Measures Plan that was submitted in September 1990 and completed in 1994. A RCRA Corrective Action Interim Measures Report was submitted in December 1994 and additional information in response to comments was submitted in December 1996. An assessment of 20 acres of property purchased by Doe Run from Cominco Mine Company was conducted by Barr Engineering and a report titled Former Cominco Property SWMU/AOC Assessment Report was submitted in January 1999.

The Doe Run - Buick site considered in this evaluation includes all contiguous acreage owned by Doe Run - Buick and all off-site areas impacted by smelter fallout for which Doe Run - Buick has environmental cleanup responsibilities.

## **BACKGROUND**

### **Definition of Environmental Indicators (for RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

### **Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

### Duration / Applicability of EI Determinations

EI Determinations status codes should remain in the RCRA Info national database ONLY as long as they remain true (i.e., RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

- Are groundwater, soil, surface water, sediments or air **media** known or reasonably suspected to be "**contaminated**"<sup>1</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria [e.g., Maximum Contaminant Levels (MCLs), the maximum permissible level of a contaminant in water delivered to any user of a public water system under the Safe Drinking Water Act]) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(0.01mg/l), Cd(0.005mg/l), (a)</u> <u>Pb(0.015mg/l), Sb(0.006mg/l)</u>
Air (indoors) <sup>2</sup>	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(11mg/kg), Cd(110mg/kg), (b)</u> <u>Pb(260mg/kg), Sb(85mg/kg)</u>
Surface Soil (e.g., <2 ft)	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(11mg/kg), Cd(110mg/kg), (b)</u> <u>Pb(260mg/kg), Sb(85mg/kg)</u>
Surface Water	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(20ug/l), Cd(10-17ug/lg/l), (c)</u> <u>Pb(12-29ug/l),</u>
Sediment	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(11mg/kg), Cd(110mg/kg), (b)</u> <u>Pb(260mg/kg), Sb(85mg/kg)</u>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	<u>    </u>	<u>    </u>	<u>As(11mg/kg), Cd(110mg/kg), (b)</u> <u>Pb(260mg/kg), Sb(85mg/kg)</u>

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Air (outdoors)     X    

     If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

  X   If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

     If unknown (for any media) - skip to #6 and enter "IN" status code.

- (a) Cleanup Levels for Missouri, Groundwater Target Concentrations (GTARC)
- (b) Cleanup Levels for Missouri, Senario A, Ingestion/Dermal/Inhalation Concentration ( $C_{DI}$ )
- (c) Drinking Water Maximum Concentration Levels (MCL)s

Rationale and Reference(s): A RCRA Facility Investigation report was submitted March 31, 1994 and a supplemental report was submitted September 15, 1999. A Corrective Measures Study Plan was submitted February 1, 2001. Cleanup Levels for Missouri (CALM) dated September 1, 2001 were used for soil and groundwater target concentrations, for screening purposes. For the purpose of the June and July of 2005 investigation to determine yard excavation, EPA's Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK) was used to give a risk-based action level of 400 ppm lead in residential soil for off-site emissions fallout impacted yards. Lead was the only constituent of concern above initial screening levels off-site at residences. Outdoor air is not expected to be contaminated due to Doe Run's compliance with their Title V Permit under the Clean Air Act and fugitive emissions control measures. Further cleanup goals will be decided using EPA and Missouri Risk - Based Corrective Action (MRBCA) standards.

Footnotes:

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential Human Receptors (Under Current Conditions)

<u>"Contaminated" Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	no	no	no	no			no
Air (indoors)	no	yes	no				
Soil (surface, e.g., <2 ft)	yes-no*	yes	no	yes	yes	yes	yes
Surface Water	no	yes			yes	no	no
Sediment	no	yes			yes	no	no
Soil (subsurface e.g., >2 ft)				yes			no
Air (outdoors)	no	no	no	no	no		no

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media - Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (pathways) do not have check spaces ("\_\_\_"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

\_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

X If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

\_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s): Referencing the RCRA Facility Investigation report of March 31, 1994 and supplemental RCRA Facility Investigation report of September 15, 1999, under current conditions trespassers are unlikely and would be of extremely limited duration. Off-site, the National Ambient Air Quality Standards (NAAQS) for lead are not exceeded and the only contaminated media of concern was surface soil



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contaminated by accumulation of particulate emissions in the environment. The surface soil off-site was tested by the department and Doe Run in the summer of 2005. \* As detailed in a letter from Doe Run to the department dated September 20, 2005, all residential yard (surface soil) quadrants contaminated above 400 ppm lead which are clearly attributable to smelter fallout are scheduled to have been excavated before October 1, 2005. Doe Run – Buick is backfilling and re-seeding these yards with soil containing less than 100 ppm lead. The 400 ppm lead soil replacement level was based on IEUBK risk modeling done by USEPA in conjunction with the department's Viburnum Trend Haul Roads Superfund cleanup project (addressing contamination from the hauling of lead mine materials) which was in the same general area as Doe Run - Buick. A number of residences in the area which may have been contaminated in part by smelter fallout and in part by historical lead mine products transportation, have been tested during the Viburnum Trend Haul Roads Superfund cleanup project and have either had soil replacement or are scheduled for soil replacement if soil is above 400 ppm lead. Therefore, off-site residents will no longer be exposed to soil contaminated above risk based levels.

Levels of constituents of concern other than lead are not an off-site issue. Perched groundwater is contaminated, but no receptors are identified because groundwater at shallow depth is not used as a drinking water source and deeper groundwater is not contaminated.

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be “**significant**”<sup>4</sup> (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

       If no (exposures cannot be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

  X   If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to

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"contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s): Direct contact with contaminated soil off-site may have been significant. Activities were conducted in the summer of 2005 to determine the extent of off-site emissions fallout above levels of concern and if off-site receptors were impacted in the context of this EI determination. Following identification of the extent of contaminated homes, all yard quadrants above EPA's health - based criteria were excavated or are scheduled to be excavated under Superfund's remediation project. Off-site soil above risk based levels remain in the area, but it is not considered to be in a residential living area. Remaining off-site contamination is in densely wooded regions. The soil that remains at what is considered off-site residential areas is therefore below risk based levels, and residential exposure has been addressed. It is anticipated that contamination of wooded regions of adjacent properties will be addressed in Doe Run - Buick's CMS. Construction workers and regular employees may be exposed to metals contaminated media above action levels. Trespassers are unlikely and the duration of any exposure would be brief due to site security provided and as restricted by part 1 of the Mo Haz Waste Management Facility Permit. Recreational use of on-site property is not allowed, recreational use of off-site wooded property is expected to result in exposures to soil contaminated above risk based levels, but the duration of the exposure would be brief. Exposures to food contaminated by surface soils above risk based levels is expected to be of brief duration.

<sup>4</sup> If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" exposures (identified in #4) be shown to be within acceptable limits?

X If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be "unacceptable") - continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

\_\_\_\_\_ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s): The consolidated Permit application contains Section J

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Personnel Training Program. As per Section J, all employees receive training to minimize exposure based on their job description. Permanent employees are medically monitored for exposures. Workers and Construction workers should therefore be adequately trained in use of PPE and appropriate procedures such that any exposures would be acceptable and not put them at risk. Any exposure to food in non-residential off-site wooded areas with potentially contaminated soil above risk based levels (such as mushrooms or wild game) is of insignificant duration/extent and is deemed to not pose an unacceptable risk. Any exposure by recreational users (such as hunters or hikers) of private off-site wooded areas to contaminated soil above risk based levels is of brief duration and thus is also deemed to not present an unacceptable risk.

6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Doe Run- Buick Resource Recovery Facility, EPA ID# MOD059200089, located at Boss, MO under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Missouri Department of Natural Resources

Completed by: (Signature) original signed by below Date 11/18/2002  
(Print) Daniel A. Carey  
(Title) Environmental Engineer

Supervisor: (Signature) original signed by below Date 11/18/2002  
(Print) Aaron Schmidt, P.E.  
(Title) Chief, Treatment Unit, Hazardous Waste Program  
(EPA Region or State) Missouri Department of Natural Resources



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Locations where References may be found:

Missouri Department of Natural Resources - Hazardous Waste Program, Doe Run - Buick Recycling Facility.

Contact telephone and e-mail numbers

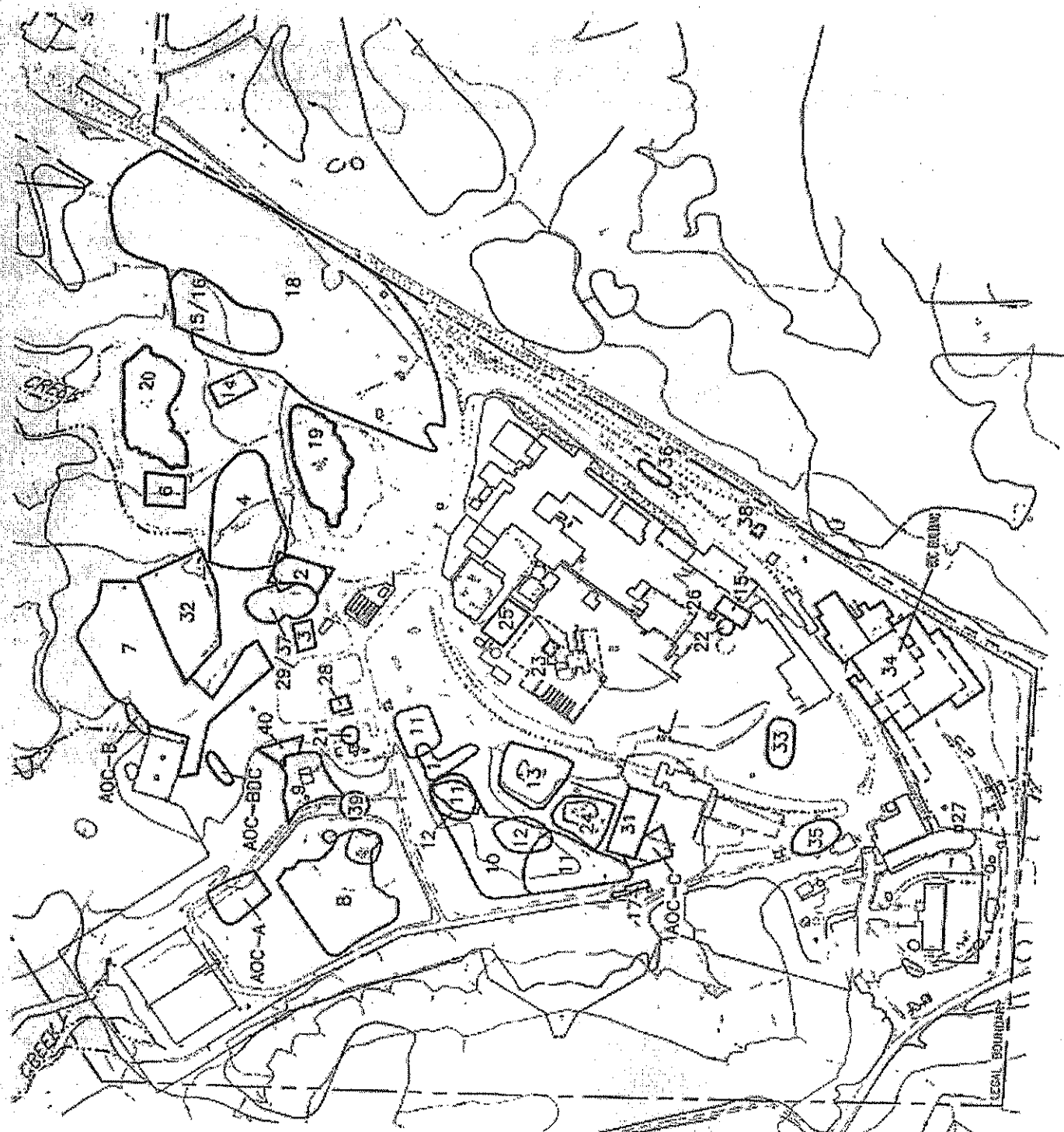
(Name) Daniel A. Carey

(Phone #) (573)751-3553

(E-mail) nrcared@mail.dnr.state.mo.us

***Final Note: The Human Exposures EI is a Qualitative Screening of exposures and the determinations within this document should not be used as the sole basis for restricting the scope of more detailed (e.g., site-specific) assessments of risk.***

ref: ca725epa.doc

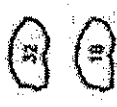


0 100 200 300  
SCALE IN FEET

- Building
- Fence
- Stream
- Tree Line
- Railroad
- Paved Road
- Unpaved Road
- Legal Boundary

Investigation Area Where  
Soil Sampling And Analysis  
Were Completed In The RFI

SWMSU Where  
Soil Sampling And Analysis  
Were Not Required  
In The RFI



AREA	INVESTIGATION	DESCRIPTION
1	Yes	Area Between Street And
2	Yes	Area Between Street And
3	Yes	Area Between Street And
4	Yes	Area Between Street And
5	Yes	Area Between Street And
6	Yes	Area Between Street And
7	Yes	Area Between Street And
8	Yes	Area Between Street And
9	Yes	Area Between Street And
10	Yes	Area Between Street And
11	Yes	Area Between Street And
12	Yes	Area Between Street And
13	Yes	Area Between Street And
14	Yes	Area Between Street And
15	Yes	Area Between Street And
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38	No	Area Between Street And
39	No	Area Between Street And

Figure N-1  
LOCATIONS OF SWMSUs AND AOCs AT  
THE BUICK RESOURCE RECOVERY FACILITY  
The Dee Run Corridor

September 20, 2005

Aaron Schmidt  
Missouri Department of Natural Resources  
Hazardous Waste Program  
P.O. Box 176  
Jefferson City, Missouri 65102

Re: Environmental Protection Agency Environmental Indicator Information

Dear Mr. Schmidt:

In the months of June and July of 2005, The Doe Run Company's Buick Resource Recycling Facility (Buick Facility) worked in conjunction with the Missouri Department of Natural Resources Hazardous Waste Program (HWP) to identify uncontrolled human exposures to hazardous constituents that potentially could be attributed to historical lead smelting operations. Although the initial focus for the investigation was the identification of uncontrolled exposures, the primary goal of the project was to remediate the uncontrolled areas of human exposure. In the following paragraphs, the Buick Facility respectfully submits a description of the activities associated with the identification and corrective action project.

In order to identify potential human exposures, a list of residences and businesses located within three-mile radius of the Buick Facility was constructed. A significant portion of the residences and businesses on the list were scheduled to be addressed under the Viburnum Trend Haul Road Site (VTHRS), therefore eliminating hazardous constituent exposure. The Buick Facility proceeded to evaluate twenty-eight residences not included in the VTHRS. Approximately 10% of the residences were located southwest of the Buick Facility. Approximately 15% of the residences were located east/northeast of the Buick Facility. The remainder of the residences were located in a north/northwest to north/northeast pattern from the Buick Facility.

The evaluation of the twenty-eight residences consisted of lead soil sampling in a four-quadrant area surrounding the residence. Each quadrant represented an active area around the residence where potential human exposure to lead could be present. Sampling results indicated elevated lead levels at five of the twenty-eight residences. Table 1 lists the resident, address and physical location of the five residences.

**Table 1**

<b>Residence</b>	<b>Address</b>	<b>Physical Location</b>
Edna Copeland	HC 82, Lot 535 Bixby, Missouri 65439	Northwest of Buick Facility, County Road #75
Greg Horton	HC 82, Box 300 Bixby, Missouri 65439	North of Buick Facility, County Road #85
Clinton Dotson	999 Cominco Road Bixby, Missouri 65439	Northeast of Buick Facility, Cominco Road
Roy Faulkner	HC 82, Box 505 Bixby, Missouri 65439	North of Buick Facility, County Road #85
Bob Schmidt	HC 82, Box 515 Bixby, Missouri 65439	North of Buick Facility, County Road #85

Upon completion of the evaluation, residents were notified of the results. Following notification, The Doe Run Company obtained approval for soil replacement from residents under a signed access agreement and acknowledgement of remedial activities. The access agreements and work plan acknowledgement read as follows:

Access Agreement

The Doe Run Company is conducting a removal action requested by the Missouri Department of Natural Resources to remove soil in residential yards in Iron County, which may contain elevated lead concentrations. Test results of soil on your residential property in Quadrants \_ indicate that your yard should be included in the removal action.

Attached is a generalized work plan, which tells what will be done and a tentative timetable for completion. The final work plan applicable to your property will be developed prior to start-up of the project to further detail what will be done.

In order to facilitate and document the work, a record will be made of the condition of the property prior to start-up, as the work proceeds, and on completion. This will enable us to ensure that the work is performed according to plan and in a manner satisfactory to you. The record prior to start-up will be pictures and video indicating plants, shrubs, trees and other structural features of your yard and house. The start-up record will be made upon receiving a signed agreement. For us to proceed, we need your approval of the generalized work plan, your permission authorizing us to enter your property and perform the work as attached, and your commitment to participate and cooperate with the clean-up plan. Therefore, please sign the extra copy of this letter as indicated below and deliver that copy to us.

In return, by the signature below, Compass Environmental, Inc. pledges to perform the work as scheduled in the work plan in a workman-like manner, and will be responsible to you for any damages that may occur for failing to do so.

Work Plan

The residential yard replacement action pursuant to a request from the Missouri Department of Natural Resources began in September 2005. The residential yard replacement action should precede over the next few weeks, depending on weather conditions, especially rain.

The Doe Run Company (Doe Run) has contracted with Compass Environmental, Inc., an environmental firm located in Indianapolis, IN, to do this work. The work on the properties

listed above will begin during the week of September 12, 2005 and will take 2-4 days per property. The yard replacement will be done in two stages. The first stage will be to remove the soil. The second stage will be to replace the soil. Seeding and strawing will be done at the end of the work. Doe Run will provide the property owner with a hose and sprinkler and will pay the water bill for the first two months after the yard removal action. But it will be the property owner's responsibility to water the yard to insure grass growth. Pictures and videos will be taken of the yard before removal begins. A copy of the pictures and video will be given to the individual homeowners along with this work plan.

The timetable may change by the time the last part of the project is completed. However, homeowners will be notified of our progress. The work in your yard will include:

- Soil in quadrant \_ removed to a depth of approximately 12 inches
- 12 inches of new soil put in place
- Areas where soil is removed seeded and strawed as appropriate

The soils generated from this removal project will be included within the Viburnum Remedial Action Plan for soils from the Viburnum Trend Haul Road Site. The Viburnum Remedial Action Plan describes activities for the treatment and disposal of lead contaminated soils excavated from private properties located in portions of Reynolds, Dent and Iron Counties, Missouri. The Viburnum Remedial Action Plan is being conducted under Unilateral Administrative Order Docket No. CERCLA-07-2005-0083, Viburnum Trend Haul Roads Site. The soils will be transported to the Doe Run Viburnum Mining Facility located in Viburnum, Missouri and placed on the Old Tailings Impoundment. The facility is permitted under the Missouri Metallic Minerals Waste Management Act Permit MM-008. The action specified in the Viburnum Remedial Action Plan is the treatment, if necessary, and disposal of soils excavated from multiple locations as part of the removal action specified in the Unilateral Order. The soil will be used as a final cover for the Impoundment.

Upon completion of soil removal, a second evaluation will be conducted to confirm removal of contaminated soils. Several samples will be taken of the subgrade before replacement soil is deposited at the residence. If sample results indicate elevated levels after a removal of 12 inches of soil, a barrier will placed on the subgrade before replacement soils are deposited.

Replacement soils for these residences have been identified and tested for lead content to ensure the residence is not re-contaminated. The replacement soils used in this project are located at The Doe Run Company property adjacent to the West Fork Mine/Mill Operation. Sample results indicate lead values of less than 100 part per million in the replacement soils.

In conclusion, a final report will be completed, consisting of the previously documented activities (lead contamination evaluation), data collected before, during and after soil replacement and final closure activities of contaminated soils. The project completion goal is October 1, 2005. Should you have any questions or comments on the enclosed information, please contact me by e-mail at [slamb@doerun.com](mailto:slamb@doerun.com) or by phone at (573)626-3406. Thank you.

Sincerely,

Scott Lamb  
Environmental & Health Manager  
Buick Resource Recycling Facility

