

**Oronogo-Duenweg Mining Belt Superfund Site
Newton County Mine Tailings Superfund Site
Jasper and Newton Counties, Missouri**

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ATSDR Exposure Investigations (EI) Generic Information Collection (GenIC)

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Exposure Investigation (EI)

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B. Collections of Information Employing Statistical Methods

There is no statistical recruitment methodology used for this investigation. Section B.1 of the submission (below) describes how the data will be collected.

B.1. Respondent Universe and Sampling Methods

The Oronogo-Duenweg Mining Belt (primarily in Jasper County) and Newton County Mine Tailings Site are contaminated with lead and other metals from historic lead mining, milling, and smelting [EPA 2004, 2010]. The U.S. Environmental Protection Agency (EPA) has been characterizing and cleaning up areas related to these sites since 1995.

The target respondents are children (< 72 months), pregnant women, and women of childbearing age (15-44 years) living in historic, lead mining impacted areas in Jasper or Newton Counties around the Oronogo-Duenweg Mining Belt and the Newton County Mine Tailings sites. This EI will test up to 225 children (less than [<] 72 months) and 75 pregnant women or women of childbearing age (15-44 years) to determine blood lead levels (BLLs) in the community. The EI will also include environmental sampling, both inside and outside of households, conducted by state and federal partners, that will be used to determine lead levels in the environment.

Since the Agency for Toxic Substances and Disease Registry (ATSDR) does not use the exposure investigation (EI) results to generalize or estimate the total exposed population, there will be no statistically representative sampling methods used to sample and recruit participants. The proposed sample sizes were based on community demographics, budgetary constraints, and vulnerable populations. ATSDR will take a hierarchical approach to recruitment by first prioritizing areas where lead contamination is highest. If necessary, ATSDR will expand recruitment to include areas within the site boundaries where environmental sampling is planned or where contamination is possible based on proximity to historic mining sites of interest. Recruitment will stop when ATSDR participation goals are met (See more information under B.3 and in Attachment 7, the EI Protocol).

B.2. Procedures for the Collection of Information

ATSDR will examine BLLs, review environmental sampling data, and examine the relationship between BLLs and environmental sources of lead. ATSDR will test a maximum of 300 participants for blood lead levels. Participants for the EI will be recruited from the areas within the Oronogo-Duenweg Mining Belt and Newton County Mine Tailings Superfund sites' boundaries (See EI Protocol). The EI will seek participants who reside in areas where soil lead

contamination is highest or suspected to be present. ATSDR will use site investigations and historic site sampling data provided by EPA Region 7 to identify these areas.

The EI has the following objectives and associated methods:

1. Evaluate BLLs for Jasper and Newton counties' residents who are < 72 months, women who are pregnant, or women of childbearing age (15-44 years) that participate in the investigation.
 - Minor siblings > 72 months may also have their BLLs evaluated for participating families at the parent/guardian's request.
 - Recommend case management for child participants with BLLs \geq 3.5 $\mu\text{g}/\text{dL}$ and adult participants with BLLs \geq 5 $\mu\text{g}/\text{dL}$ [CDC 2021b].
 - Recommend follow-up evaluation and retesting with a Primary Care Provider (PCP), obstetrician-gynecologist (OB/GYN), pediatrician, or health department.
 - Recommend screening for developmental and behavioral issues in children. Refer children with developmental and behavioral issues, as needed.
 - Provide information on nutrition that may help to decrease the absorption of lead into the body [CDC 2002].
2. Review environmental sampling data collected by state and federal partners from participating residents' indoor and outdoor environments.
3. Administer a questionnaire to document demographic, behavioral, occupational, and educational information of participants. Parent/guardians will complete the survey for child participants.
4. Evaluate lead levels in environmental samples and the association between environmental lead levels and BLLs.
5. Recommend ways to lower environmental exposures to lead.
6. Provide the opportunity for all participants and parents/guardians of child participants to discuss their blood lead findings with an ATSDR medical officer.

Prior to the interviews, the EI team is trained on the site-specific questions to be asked (e.g., the purpose of each question, how to capture answers, place for comments, etc.). The list of questions and individual's answers are stored in a secure database or locked filing cabinet. Each participant is given information regarding the name of the EI, a telephone number to answer questions, and the address of the ATSDR website where they can find more information about the EI (Appendix C1).

After all blood and environmental samples are collected, each participant will receive a copy of their personal results (Sample results letters are provided in Appendices H1 & H2). Language from cleared ATSDR factsheets on reducing exposure to lead will be used to tailor the results letters to the participant's measured lead concentrations and answers on the questionnaire. (ATSDR factsheets on reducing lead exposure are provided in attachments 5A-5E). Individual results will be protected to the full extent provided by law and will not be shared publicly in any published reports.

B.3. Methods to Maximize Response Rates and Deal with Non-response

Recruitment priority will be given to area residents where lead contamination is highest or suspected; however, participation will not be limited when contamination presence or absence is unknown. EPA environmental sampling data and site investigation information will be used to identify areas where lead contamination is known or suspected to be present [EPA 2021c, 2021d, 2021e].

ATSDR will take a hierarchical approach to recruitment by first prioritizing areas where lead contamination is highest. If necessary, ATSDR will expand recruitment to include areas within the site boundaries where environmental sampling is planned or where contamination is possible based on proximity to historic mining sites of interest.

1. ATSDR will create a mailing list for the residents in Jasper and Newton Counties where lead contamination is known to be present or where environmental investigations are pending. Contact information will be provided for participants to make appointments for testing.
2. Fact sheets, fliers, and postcards providing information on testing will be prepared by ATSDR and provided to local public health authorities (LPHAs), distributed to eligible participants, and printed in local news publications and online outlets.
3. Digital recruitment material will be developed, and targeted social media advertising will be purchased. Click and impression advertisements will be purchased through Facebook and Instagram. Advertisements will target women with children, women who are pregnant, women of childbearing age, men with children, and grandparents.
4. ATSDR will develop a webpage to display information about the EI, eligibility criteria, and enrollment information.
5. ATSDR will focus on daycares, preschools, and elementary schools in the area to request partnership to recruit from client families.
6. ATSDR will recruit through established or newly created in-person connections with the community. Recruitment will occur through local events or public information sessions aimed at community groups, religious organizations, or other influential community members including elected officials.

7. ATSDR will work with LPHAs and local media outlets to broadcast recruitment information via radio or local news channels.
8. ATSDR will work with LPHAs, Missouri Department of Health and Senior Services (MDHSS), and the Mid-America Pediatric Environmental Health Specialty Unit (PEHSU) to provide recruitment information and material to area primary care providers (PCPs), pediatricians, clinicians, and other area healthcare providers.
9. A \$20 token of appreciation in the form of a cash gift card will be provided to each eligible participant. Participants will receive the gift card at the time of blood draw.
10. Recruitment efforts will stop once the participation goal of 225 children <72 months and 75 pregnant women or women of childbearing age (15-44 years) has been met.

B.4. Test of Procedures or Methods to be Undertaken

The EI team will administer the questionnaire provided in Appendix E1. The Consent/Parental Permission form and all other EI documents used to communicate with participants have been evaluated for reading level using Flesh-Kincaid Grade Level tool in Microsoft Word. The goal was a reading level goal is 8th grade or below. Appendix D includes copies of the ATSDR forms. Appendices I8 & I9 include the MDHSS and EPA consent forms. ATSDR, MDHSS, and EPA personnel will be available to answer any questions participants may have about the EI. Participants will be provided with a copy of the forms for their records.

B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

ATSDR is responsible for collection and analysis of blood samples and the exposure questionnaire. Collection and analysis for dust wipe and public water samples will be performed by the Missouri state public health laboratory. The laboratory analysis for soil and private drinking water samples will be performed by EPA Region 7's Science and Technology Center or contracted laboratories.

Statistical methods are not used to determine participation in EIs. ATSDR, in partnership with the Missouri Department of Health and Human Services, will compare the EI's distribution of blood lead levels to national, state, and county averages. The EI will explore the impact of participant demographic, behavioral, and occupational information on blood lead level distribution. ATSDR statisticians in the Office of Community Health and Hazard Assessment will analyze all data to determine the correlation between lead measured in the blood and that in the environment.

References

Attachment 2. Blood Lead in JNC EI: Supporting Statement B

[CDC 2021b] Centers for Disease Control and Prevention. 2021. Blood lead reference value. Atlanta, GA [reviewed 2021 October 27; accessed 2021 November 22]. Available from: <https://www.cdc.gov/nceh/lead/data/blood-lead-reference-value.htm>.

[CDC 2002] Centers for Disease Control and Prevention. 2002. Managing elevated blood lead levels among young children: recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention. Atlanta GA.

[EPA 2021c] U.S. Environmental Protection Agency. 2021. Email correspondence between Erin Evans and Elizabeth Hagenmaier FW: EBL Lead numbers for Jasper and Newton. Received 13 September 2021.

[EPA 2021d] U.S. Environmental Protection Agency. 2021. Email correspondence between Erin Evans and Elizabeth Hagenmaier RE: Copy of HHRA for Jasper County SUPR site (Oronogo-Duenweg Mining Belt). Received 9 June 2021.

[EPA 2021e] U.S. Environmental Protection Agency. 2021. Email correspondence between Erin Evans and Elizabeth Hagenmaier RE: residential lead access. Received 19 November 2021.

[EPA 2010] U.S. Environmental Protection Agency. 2010. Record of decision Newton County mine tailings superfund site Newton County, Missouri mine waste remediation operable units 1 and 2. Kansas City KS.

[EPA 2004] U.S. Environmental Protection Agency. 2004. Record of decision Oronogo-Duenweg mining belt site Jasper County superfund site Jasper County, Missouri mine and mill waste operable unit 1. Kansas City KS.