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SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

October 21, 2024

Mr. Jonathan Byk, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, New Jersey 08837

EPA CONTRACT No: 68HE0319D0004
TD No: TO-0030-0138
DC No: STARTV-05-F-0170
SUBJECT: FINAL REMOVAL ACTION REPORT
MAY 2024 AIR MONITORING
HISTORIC POTTERIES SITE
TRENTON, MERCER COUNTY, NEW JERSEY

Dear Mr. Byk,

Enclosed please find the Final Removal Action Report which summarizes the air monitoring activities conducted by the U.S. Environmental Protection Agency, Region II (EPA) with the support of Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) at the Historic Potteries Site (the Site) located in Trenton, Mercer County, New Jersey. The air monitoring was conducted during Removal Action activities from May 20 through 29, 2024.

If you have any questions or comments, please contact me at (732) 570-4943.

Sincerely,

WESTON SOLUTIONS, INC.

A handwritten signature in black ink, appearing to read "Olga Kuzmitskaia", is written over a faint, circular, embossed or stamped seal.

Olga Kuzmitskaia
START V Site Project Manager

Enclosure
cc: TD File: TO-0030-0138

FINAL REMOVAL ACTION REPORT MAY 2024 AIR MONITORING

HISTORIC POTTERIES SITE Trenton, Mercer County, New Jersey

Site Code: A29V
CERCLIS Code: NJN000203535

Prepared by:

Superfund Technical Assessment & Response Team V
Weston Solutions, Inc.
Federal East Division
Edison, New Jersey 08837

Prepared for:

U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, New Jersey 08837

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October 2024

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1.0 INTRODUCTION

This report summarizes the Historic Potteries Removal Action (RV) air monitoring program conducted between May 20 through 29, 2024, located at the Ulysses S. Grant Intermediate School at 159 North Clinton Avenue, Trenton New Jersey. The U.S. Environmental Protection Agency, Region II (EPA) Superfund and Emergency Management Division (SEMD), tasked Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) to conduct air monitoring for particulates less than 10 microns in diameter (PM10) and air sampling for lead in accordance with the approved Community Air Monitoring Plan (CAMP).

1.1 Site Location and Description

The current Site boundaries encompass part of the East Trenton neighborhood where potteries historically operated within Trenton city limits, in Mercer County, New Jersey. The Site as currently defined encompasses approximately 0.38 square miles of occupied residential properties and communal spaces such as schools and parks in East Trenton, south and north of North Clinton Avenue, north of the Assunpink Creek, east of Lincoln Avenue, and west of Plum Street. This RV focuses specifically on the Grant School located at 159 North Clinton Avenue, Trenton, New Jersey bound by Perry Street to the north, North Clinton Avenue to the east, Monmouth Street to the south, and Southard Street to the west. The Site boundaries may expand as more assessment activities are conducted in all seven areas of Trenton where significant historical pottery operations took place.

Refer to Attachment A, Figure 1: Site Location Map.

1.2 Site History and Background

The Site was discovered during a Removal Site Evaluation (RSE) of the L.H. Mitchell Site, a former small solder manufacturer, where elevated levels of lead were found in soil on residential properties in the surrounding neighborhood. The L.H. Mitchell Company operated for several decades in the late 20th century at 216 Klagg Avenue in the East Trenton neighborhood of Trenton, New Jersey. Between October 2018 and April 2019, EPA conducted assessment sampling at the L.H. Mitchell Site to determine if the former facility's operations had released lead into surrounding residential areas. Soil samples were collected from approximately 40 properties within a six-block radius of the former L.H. Mitchell facility.

EPA collected a total of 408 composite soil samples, including field duplicates, from 69 sampling locations throughout the sampling area. The analytical results indicated lead levels exceeded 400 milligrams per kilogram (mg/kg)¹, the applicable EPA Removal Management Level (RML) at the time, in 291 of the 408 samples. Lead levels exceeded 1,200 mg/kg at 26 of the 33 properties sampled. Overall lead levels above the EPA RML were found at all properties sampled, except for one property located upwind that was sampled to establish background levels.

EPA determined that lead detected at residential properties in the vicinity of the L.H. Mitchell Site

¹On January 17, 2024, EPA released new guidance updating the RML for lead in residential soils: "Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities," which establishes an RML of 200 mg/kg, lowering it from the previous EPA residential RML of 400 mg/kg.

must be from other historic anthropogenic sources including, but not limited to, historic fill, leaded gasoline, lead-based paint, coal combustion, and potentially the pottery industry that was prevalent during the late 19th and early 20th century. Research into the historic potteries industry revealed that Trenton was a major industrial ceramic manufacturing center in the United States beginning in the 1850s. The industry in Trenton grew considerably throughout the remainder of the century and was at its peak between 1880 and 1920. According to historic resources, including the Potteries of Trenton Society (POTS) online database and Sanborn Fire Insurance Maps (Sanborns), at least 78 pottery manufacturing locations existed throughout the City of Trenton. At least 30 locations that manufactured ceramics operated within the East Trenton neighborhood, of which at least five were large-scale operations with more than five kilns. Additional research indicated that lead was a common component of glazes used by historic potteries in the 19th century, such as those in Trenton.

On January 9, 2020, EPA received a referral from the New Jersey Department of Environmental Protection (NJDEP) to conduct an Integrated Assessment (IA) specifically related to the historical presence of pottery facilities and the lead contaminated soil identified in East Trenton. NJDEP also requested an assessment of six other areas of Trenton where significant historical pottery operations took place to determine if the East Trenton neighborhood alone or in combination with the six other areas qualifies for placement on the National Priorities List (NPL) and/or warrants a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) RV.

In response to the referral, EPA initiated an extensive attribution study as part of the IA. The study aimed to determine whether lead in soils discovered in the East Trenton area could be attributed to a release from historic potteries. The attribution study included several specialized laboratory data analyses with assistance from the EPA Office of Research and Development (ORD) as well as the EPA Environmental Response Team (ERT). The attribution study sampling was conducted between October 2020 and July 2022. The soil sampling included both occupied and vacant residential properties in East Trenton that were previously assessed during the L.H. Mitchel Site investigation. Soil samples were also collected from other areas of Trenton where significant potteries historically operated, denoted HP001 through HP007. The current study area for the IA consists of two main former pottery areas: HP001, which includes part of East Trenton and Top Road, and HP002, which encompasses the remaining portion of East Trenton.

As part of the attribution study 1,239 discrete soil samples and 84 composite samples were collected from residential properties, commercial properties, vacant lots, and parks. Analytical lead results for the discrete soil samples ranged from 3.52 to 50,900 mg/kg. Of the 298 samples from residential properties, 104 exceeded the 400 mg/kg lead threshold. For the composite soil samples lead levels ranged from 23.1 to 2,390 mg/kg. Notably, 34 of 84 composite soil samples exceeded 400 mg/kg for lead.

As described in a Technical Memo prepared by ORD and the Historic Potteries RSE, multiple lines of evidence indicate the historic pottery industry significantly contributed to the elevated lead levels found in residential soil in East Trenton. The attribution study data indicate that the elevated lead levels primarily result from two sources: airborne releases during firing of ceramics in upwind kilns and leaching of lead from pottery sherds located in the soils. Although other sources have likely also contributed over time, including lead paint, leaded gasoline, coal combustion, and other localized industry (smelters, foundries, rubber facilities), the potteries appear to be the most significant contributor to the elevated lead levels.

As part of the ongoing IA, soil sampling and analysis of residential properties, parks, and schools within the Top Road and East Trenton neighborhoods was conducted throughout fall and winter of 2023/2024. As the Site is considered for NPL listing, further assessment of occupied residential properties will continue in areas of Trenton where significant historical pottery operations took place. Between October 2023 and January 2024, 1,028 composite samples were collected from 98 occupied residential properties, three parks (Breunig Avenue Park, Sonny Vereen Playground, Grant Avenue Playground), and two public schools (Darlene McKnight Elementary School and Grant School) within the East Trenton study area.

Analytical lead results for the composite soil samples from the 1,028 samples collected ranged from 10 to 7,760 mg/kg, with an average concentration of 580 mg/kg. Of these samples, 719 exceeded the recently updated EPA RML of 200 mg/kg. Every property sampled except for one (HP001-P121, Darlene McKnight Elementary School), had at least one sample with a lead concentration above the 200 mg/kg RML. Furthermore, 161 samples from 70 properties sampled contained lead levels exceeding 1,000 mg/kg.

In January 2024, three heavily used community parks in East Trenton were assessed as part of the IA sampling effort: Sonny Vereen Playground, Breunig Avenue Park, and Grant Avenue Playground. All three parks showed elevated lead concentrations above the 200 mg/kg RML with varying levels of contamination. Additionally, 5-point composite samples were collected at two public school properties in East Trenton; the Darlene McKnight Elementary School located at 175 Girard Avenue, Trenton, New Jersey and the Grant School located at 159 North Clinton Avenue, Trenton, New Jersey.

The Darlene McKnight Elementary School occupies three-quarters of a city block. However, as most of the property is covered with asphalt pavement, the risk of potential exposure to lead-contaminated soil is limited. The assessment focused on a small grassy area along Girard Avenue that contains several raised garden beds. A total of eleven composite soil samples were collected from three quadrants on the property, including the soil from the raised garden beds. Analytical results indicated that all samples were below the EPA RML of 200 mg/kg for lead.

The Grant School property features a large athletic field, primarily consisting of bare soil, which serves as the main play area for students. The school grounds include several other grassy areas that are used as walkways and gathering areas before and after school hours. A total of 82 composite soil samples were collected from sixteen quadrants in the property. At all locations, EPA collected samples at the following five intervals in the upper two feet of soil within each boring: 0-2, 2-6, 6-12, 12-18, and 18-24 inches below the ground surface. Lead levels exceeding the RML were detected in samples from all sixteen quadrants on the property, including the main play area and other areas where heavy foot traffic has created bare soil areas.

Lead was identified in surface soil at the school at concentrations as high as 653 mg/kg, posing a direct contact risk for students and staff. Generally, the greatest concentration of lead was detected within the top 6 inches of soil and appeared to decrease with depth. The vertical distribution pattern of lead in soil indicates airborne deposition, with former local pottery industries suspected as the primary source. The average property-wide lead concentration in surface soil from 0-2 inches is 312 mg/kg. The average soil concentration in the top 2 inches of soil in the high use play areas is 224 mg/kg. Soil in the raised garden beds contained significantly lower levels of lead compared to the other decision units that were sampled, with an average of 92 mg/kg.

2.0 SCOPE OF WORK

The scope of the EPA RV at the Grant School consisted of the installation of temporary interim controls to protect the students and staff from contact with the lead impacted soil through the installation of artificial turf, soil, wood chips, and/or sod over high use play areas. The placement of clean cover materials over areas of lead-contaminated soil provided an effective barrier to mitigate potential lead exposure pathways. By capping the impacted soil, the contaminated soils are physically isolated. This prevents dispersion of contaminated particulates into the air, thereby eliminating inhalation exposure risks. The cover materials also create a stable buffer separating the contaminants from direct human contact, which blocks inadvertent ingestion pathways. The appropriate cover materials were selected in coordination with school administration so that the measures were appropriate for the use-specific requirements of each location.

START V performed air monitoring to document that particulates (PM10) above action levels were not migrating beyond the work zone. Four air monitoring stations were located at the work zone perimeters: one upwind and three downwind.

Air sample locations were co-located with air monitoring locations, and daily air samples were submitted for laboratory analysis as directed by the EPA On-Scene Coordinator (OSC) during ground intrusive activities. Air monitoring and sampling locations were determined on-site by the OSC based on the scope of work (SOW) for the day and prevailing weather conditions and documented using global positioning system (GPS) technology. Air monitoring and sampling were conducted, weather permitting, throughout the duration of activities associated with excavation of contaminated soils.

Refer to Attachment C: Photographic Documentation Log.

3.0 ON-SITE PERSONNEL

Name	Affiliation	Duties On-site
Jonathan Byk	EPA	OSC
Andrew Confortini	EPA	OSC
Thomas Caracappa	START V	Air Monitoring, Air Sampling, Site Documentation
Olga Kuzmitskaia	START V	Site Project Manager, Site Health and Safety, Air Monitoring, Air Sampling
Michael Lang	START V	Air Monitoring, Air Sampling

4.0 SITE ACTIVITIES AND OBSERVATIONS

From May 20 through 29, 2024, START V conducted particulate monitoring (PM10) and lead air sampling during all intrusive on-site activities. All particulate monitoring and air sampling activities were conducted in accordance with the Site-Specific CAMP. The determination to collect air samples for laboratory analysis was made by the OSC based on the SOW for the day and prevailing weather conditions. Particulate monitoring was conducted using DustTrak® particulate monitors equipped with PM10 detectors. Air sampling was conducted using GilAir pumps. Four air monitoring stations were established daily and were located based on the day's activities and the prevailing wind direction.

Refer to Attachment A, Figure 2: May 20, 2024 Wind Direction Map, Figure 3: May 22, 2024 Wind Direction Map, Figure 4: May 23, 2024 Wind Direction Map, Figure 5: May 28, 2024 Wind Direction Map, Figure 6: May 29, 2024 Wind Direction Map; and Attachment F: Site-Specific Community Air Monitoring Plan.

4.1 Air Monitoring Methodology

Air monitoring activities were conducted in accordance with the procedures outlined within the EPA guidance document entitled, “Superfund Program Representative Sampling Guidance, Volume 2: Air (Short-Term Monitoring), Interim Final. 1995. EPA 540/R-95/140. (OSWER Directive 9360.4-09, PB 96-963206).” Appropriate activities as outlined within this document include the monitoring necessary to ensure appropriate health and safety levels for protection of on-site personnel and to ensure that the surrounding community is not exposed to Site-related constituents at concentrations above the Site-Specific Action Level.

Perimeter air monitoring consisted of continuous real-time air quality monitoring and data collection at the locations selected by the EPA OSC. The monitors were calibrated by the equipment manufacturer prior to being used at the Site. When the monitors were turned on daily, the instruments were self-calibrating. Once turned on, the monitors recorded dust concentrations on a 15-minute time-weighted average (TWA).

Four air monitoring stations were located around the Site perimeter, one upwind station, and up to three downwind stations. Each monitoring station was mounted on a tripod at a height of approximately 5 feet (i.e., within the breathing zone). DustTrak® particulate monitors equipped with PM10 detectors were used to monitor dust particulate levels throughout the duration of the RV, specifically during the excavation of contaminated soil. The monitors were operating each workday to measure PM10 concentrations in real time. Results obtained from daily particulate monitoring were compared against the particulate Site-Specific Action Level of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) based on the EPA National Ambient Air Quality Standards (NAAQS) for PM10 particulates.

The monitoring stations were linked via a wireless network-based communications system, which provided instantaneous real-time air quality readings through a computer server. The air monitoring data generated was used to determine if dust levels had exceeded the Site-Specific Action Level and to ensure the effectiveness of engineering controls (i.e., dust suppression). Although air monitoring data from each monitoring station was automatically being stored real-time in the computer server, the air monitoring data was downloaded from each DustTrak unit to a field computer or electronic data storage device at the end of each workday.

Meteorological monitoring was conducted using a meteorological system to measure wind speed, wind direction, and temperature. The meteorological sensors were positioned to provide representative readings relative to the Site. Readings were evaluated at least three times per day by START V to determine the upwind and downwind boundaries of the Site. Supplemental meteorological data was obtained from Weather Underground (<http://www.wunderground.com/>) and recorded daily in the Site logbook.

4.2 Air Sampling Methodology

In accordance with the Site-Specific CAMP and Site-Specific Uniform Federal Policy (UFP) Quality Assurance Project Plan (QAPP), START V conducted perimeter air sampling for lead using low flow air sampling Gilian GilAir® programmable pumps. DustTrak® particulate monitors and air sampling pump were co-located. Air samples were collected from perimeter air monitoring locations upon initiation of intrusive activities.

Air samples were collected in accordance with the EPA's ERT Standard Operating Procedures (SOP) Number (No.) 2008 – General Air Sampling Guidelines. Air sampling media (0.8 micrometer [µm], mixed cellulose ester [MCE] filters) connected to the GilAir pumps via Teflon® tubing was used to collect the samples. Sampling pumps were calibrated to collect the target volume (greater than 500 liters) at flow rates between 1.0 and 4.0 liters per minute (L/min) for a period of eight hours or the duration of the Site activities. For quality assurance/quality control (QA/QC) purposes, one field blank per day and one lot blank for every new lot of cassettes utilized was provided to the laboratory. The samples were submitted to the assigned laboratory for lead analysis after collection and analyzed in accordance with the National Institute of Occupational Safety and Health (NIOSH) Method 7300 for lead.

5.0 LABORATORY RECEIVING SAMPLES

The following laboratory was utilized during the May 2024 sampling event:

Laboratory	Sample Matrix	Analysis
EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, New Jersey 08077 RFP# 865	Air	Lead

6.0 SAMPLE COLLECTION AND DISPATCH

From May 20 through 29, 2024, START V collected a total of 26 air samples (including five field blank samples and one lot blank sample) from Ulysses S. Grant Intermediate School located in the vicinity of the Site. Refer to Attachment D: Chains of Custody Records.

On May 20, 2024, six air samples collected on May 20, 2024, including one field blank and one lot blank, were shipped to EMSL, located in Cinnaminson, New Jersey under Chain of Custody (COC) Record No. 2-052024-0030-0138-01 for lead analysis via NIOSH Method 7303M.

On May 22, 2024, five air samples collected on May 22, 2024, including one field blank, were shipped to EMSL under COC Record No. 2-052224-0030-0138-01 for lead analysis via NIOSH Method 7303M.

On May 23, 2024, five air samples collected on May 23, 2024, including one field blank, were shipped to EMSL under COC Record No. 2-052324-0030-0138-01 for lead analysis via NIOSH Method 7303M.

On May 28, 2024, five air samples collected on May 28, 2024, including one field blank, were

shipped to EMSL under COC Record No. 2-052328-0030-0138-01 for lead analysis via NIOSH Method 7303M.

On May 29, 2024, five air samples collected on May 29, 2024, including one field blank, were shipped to EMSL under COC Record No. 2-052329-0030-0138-01 for lead analysis via NIOSH Method 7303M.

7.0 AIR MONITORING AND SAMPLING RESULTS SUMMARY

From May 20 through 29, 2024, START V conducted air monitoring and air sampling at the Ulysses S. Grant Intermediate School located in the vicinity of the Site. Meteorological monitoring and PM10 monitoring were performed to document that particulates above action levels were not migrating beyond the work zone. A summary of the meteorological monitoring and a summary of the PM10 Perimeter Air Monitoring are presented in Table 7-1 and Table 7-2 respectively.

Table 7-1: Meteorological Monitoring Summary

Date	Weather
5/20/2024	Partly cloudy, 54-75°F. SSE wind at 2-3 miles per hour (mph).
5/22/2024	Sunny, 55-78°F. SW winds at 3 mph.
5/23/2024	Cloudy, intermittent rain, 50-73°F. SW wind at 5 mph, changed to N wind at 4 mph by 12pm. Due to intermittent rain, stations were not running from 9am to 2pm.
5/28/2024	Partly cloudy, 51-72°F. W wind at 9-14 mph.
5/29/2024	Sunny, 56-76°F. WNW wind at 4-6 mph.

Table 7-2: PM10 Perimeter Air Monitoring Summary

Date	Air Monitoring Station/Location	Upwind/Downwind	PM10 15-Minute Daily Average (µg/m³) Action Level <150 µg/m³
5/20/2024	Station ASL01 - South	Upwind	23
	Station ASL02 - West	Downwind	16
	Station ASL03 - Northwest	Downwind	25
	Station ASL04 - Northeast	Downwind	11
5/22/2024	Station ASL01 - South	Downwind	19
	Station ASL02 - West	Upwind	31
	Station ASL05 - North	Downwind	21
	Station ASL06 - East	Downwind	25
5/23/2024	Station ASL01 - South	Downwind	24
	Station ASL02 - West	Downwind	23
	Station ASL05 - North	Upwind	18
	Station ASL06 - East	Downwind	24
5/28/2024	Station ASL01 - South	Upwind	6
	Station ASL02 - West	Downwind	2
	Station ASL05 - North	Downwind	3
	Station ASL06 - East	Downwind	13
5/29/2024	Station ASL01 - South	Downwind	8
	Station ASL02 - West	Upwind	12
	Station ASL05 - North	Downwind	3
	Station ASL06 - East	Downwind	16

To determine if lead concentrations in the air during intrusive activities were below the Occupational Safety and Health Administration (OSHA) level of 30 $\mu\text{g}/\text{m}^3$, a total of 26 air samples (including five field blank samples and one lot blank sample) were collected from six sampling locations. Based on the final analytical results of the air samples, lead was not detected in any of the air samples, including the field blank and the lot blank samples.

Refer to Attachment B, Table 1: Final Air Analytical Results Summary – Lead; and Attachment E: Final Laboratory Analytical Data.

Report prepared by:

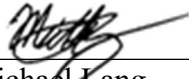


Olga Kuzmitskaia
START V Site Project Manager

10/21/2024

Date

Report reviewed by:



Michael Lang
START V Deputy Program Manager

10/21/2024

Date

Attachment A

Figure 1: Site Location Map

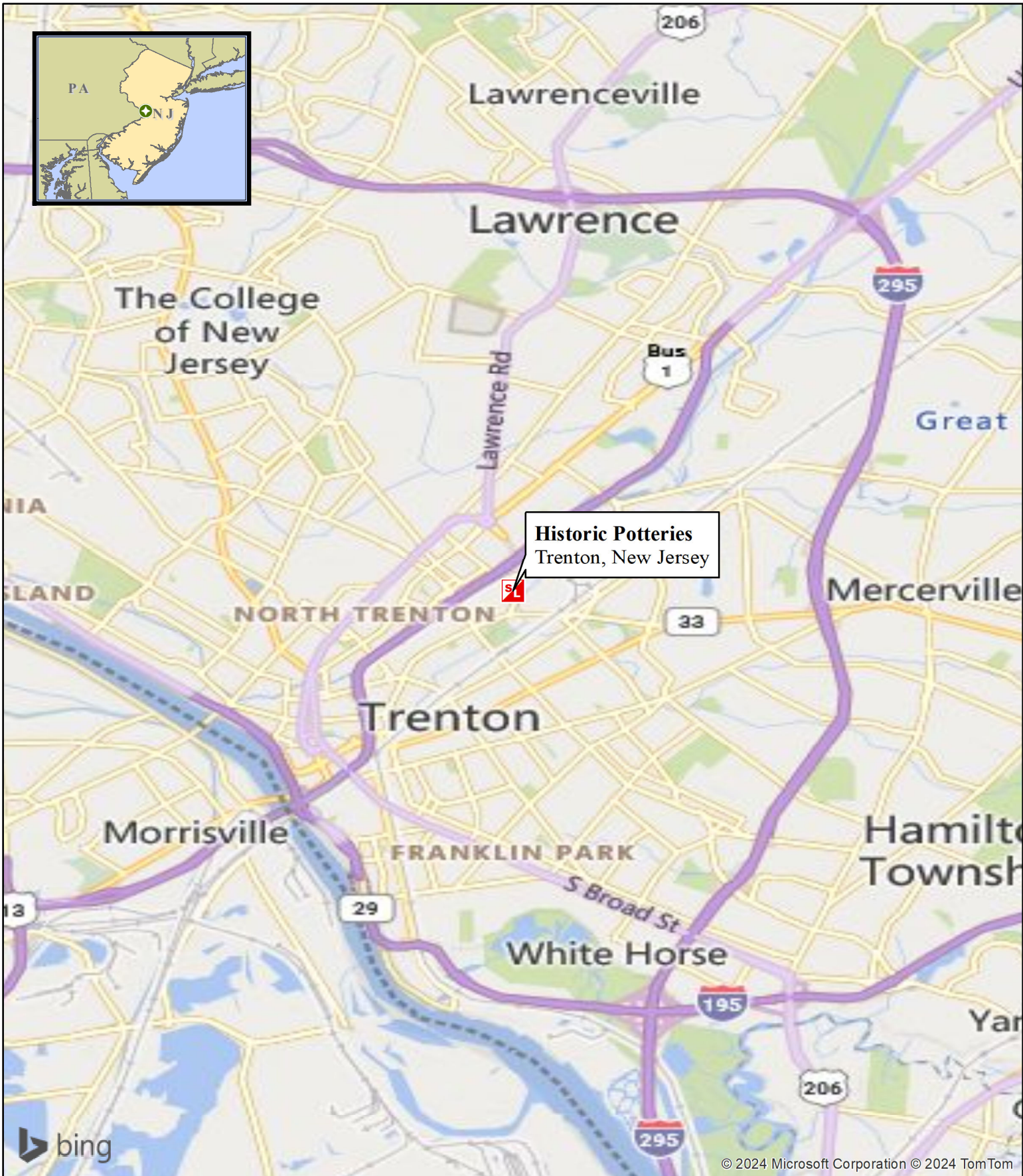
Figure 2: May 20, 2024 Wind Direction Map

Figure 3: May 22, 2024 Wind Direction Map

Figure 4: May 23, 2024 Wind Direction Map

Figure 5: May 28, 2024 Wind Direction Map

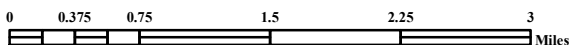
Figure 6: May 29, 2024 Wind Direction Map



Legend



Site Location



Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.; On-Site Environmental, Inc.;
Sovereign Consulting, Inc.; and TechLaw Consultants, Inc.

Figure 1: Site Location Map

Historic Potteries
Trenton, New Jersey

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138

DATE MODIFIED: 3/21/2024



SCALE
1:600

LEGEND

- Tax Parcel Boundary
- Air Sampling Location

- Notes:**
- Air sampling date: 5/20/2024
 - Wind direction: SSE
 - Upwind location: ASL01
 - Downwind locations: ASL02, ASL03, ASL04

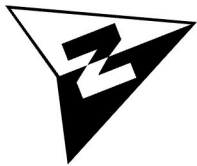


Figure 2: May 20, 2024
Wind Direction Map

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138





SCALE
1:600

LEGEND

- Tax Parcel Boundary
- Air Sampling Location

- Notes:**
- Air sampling date: 5/22/2024
 - Wind direction: SW
 - Upwind location: ASL02
 - Downwind locations: ASL01, ASL05, ASL06

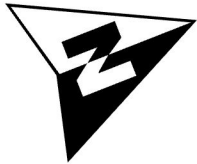


Figure 3: May 22, 2024
Wind Direction Map

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138





SCALE
1:600

LEGEND

- Tax Parcel Boundary
- Air Sampling Location

- Notes:**
- Air sampling date: 5/23/2024
 - Wind direction: N
 - Upwind location: ASL05
 - Downwind locations: ASL01, ASL02, ASL06

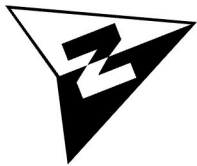


Figure 4: May 23, 2024
Wind Direction Map

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138





SCALE
1:600

LEGEND

- Tax Parcel Boundary
- Air Sampling Location

- Notes:**
- Air sampling date: 5/28/2024
 - Wind direction: W
 - Upwind location: ASL02
 - Downwind locations: ASL01, ASL05, ASL06

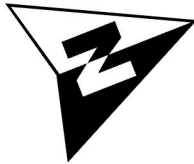


Figure 5: May 28, 2024
Wind Direction Map

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138





SCALE
1:600

LEGEND

- Tax Parcel Boundary
- Air Sampling Location

- Notes:**
- Air sampling date: 5/29/2024
 - Wind direction: WNW
 - Upwind location: ASL02
 - Downwind locations: ASL01, ASL05, ASL06

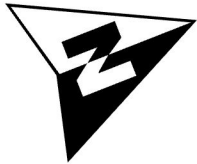


Figure 6: May 29, 2024
Wind Direction Map

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST:	M. LANG
EPA OSC:	J. BYK
START V SPM:	O. KUZMITSKAIA
CHARGE #:	40200.051.930.5138



Attachment B

Table 1: Final Air Analytical Results Summary – Lead

Table 1: Final Air Analytical Results Summary - Lead
Historic Potteries Site
Trenton, Mercer County, New Jersey
May 20 through 29, 2024

START V Sample Number	OSHA Action Level	HP002-P019-ASL01-240520-01	HP002-P019-ASL02-240520-01	HP002-P019-ASL03-240520-01	HP002-P019-ASL04-240520-01	FB-240520-01	LB-240520-01
Sample Location		HP002-P019-ASL01	HP002-P019-ASL02	HP002-P019-ASL03	HP002-P019-ASL04	Not Applicable	Not Applicable
Sample Stop Date		5/20/2024	5/20/2024	5/20/2024	5/20/2024	5/20/2024	5/20/2024
Sample Matrix		Air	Air	Air	Air	Air	Air
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Blank	Lot Blank
Lead							
Lead (ug/m ³)*	30.0	0.80 U	0.81 U	0.81 U	0.82 U	1.0 U	1.0 U

START V Sample Number	OSHA Action Level	HP002-P019-ASL01-240522-01	HP002-P019-ASL02-240522-01	HP002-P019-ASL05-240522-01	HP002-P019-ASL06-240522-01	FB-240522-01	HP002-P019-ASL01-240523-01
Sample Location		HP002-P019-ASL01	HP002-P019-ASL02	HP002-P019-ASL05	HP002-P019-ASL06	Not Applicable	HP002-P019-ASL01
Sample Stop Date		5/22/2024	5/22/2024	5/22/2024	5/22/2024	5/22/2024	5/23/2024
Sample Matrix		Air	Air	Air	Air	Air	Air
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Blank	Field Sample
Lead							
Lead (ug/m ³)*	30.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U

START V Sample Number	OSHA Action Level	HP002-P019-ASL02-240523-01	HP002-P019-ASL05-240523-01	HP002-P019-ASL06-240523-01	FB-240523-01	HP002-P019-ASL01-240528-01	HP002-P019-ASL02-240528-01
Sample Location		HP002-P019-ASL02	HP002-P019-ASL05	HP002-P019-ASL06	Not Applicable	HP002-P019-ASL01	HP002-P019-ASL02
Sample Stop Date		5/23/2024	5/23/2024	5/23/2024	5/23/2024	5/28/2024	5/28/2024
Sample Matrix		Air	Air	Air	Air	Air	Air
Sample Type		Field Sample	Field Sample	Field Sample	Field Blank	Field Sample	Field Sample
Lead							
Lead (ug/m ³)*	30.0	2.4 U	2.5 U	2.7 U	1.0 U	0.76 U	0.78 U

START V Sample Number	OSHA Action Level	HP002-P019-ASL05-240528-01	HP002-P019-ASL06-240528-01	FB-240528-01	HP002-P019-ASL01-240529-01	HP002-P019-ASL02-240529-01	HP002-P019-ASL05-240529-01
Sample Location		HP002-P019-ASL05	HP002-P019-ASL06	Not Applicable	HP002-P019-ASL01	HP002-P019-ASL02	HP002-P019-ASL05
Sample Stop Date		5/28/2024	5/28/2024	5/28/2024	5/29/2024	5/29/2024	5/29/2024
Sample Matrix		Air	Air	Air	Air	Air	Air
Sample Type		Field Sample	Field Sample	Field Blank	Field Sample	Field Sample	Field Sample
Lead							
Lead (ug/m ³)*	30.0	0.78 U	0.80 U	1.0 U	0.83 U	0.85 U	0.85 U

START V Sample Number	OSHA Action Level	HP002-P019-ASL06-240529-01	FB-240529-01
Sample Location		HP002-P019-ASL06	Not Applicable
Sample Stop Date		5/29/2024	5/29/2024
Sample Matrix		Air	Air
Sample Type		Field Sample	Field Blank
Lead			
Lead (ug/m ³)*	30.0	0.84 U	1.0 U

Notes:

START V - Superfund Technical Assessment & Response Team V

U - Not detected

ug/m³ - micrograms per cubic meter

* - Field blank and lot blank results are expressed in micrograms per filter

OSHA - Occupational Safety and Health Administration

Attachment C

Photographic Documentation Log

Photographic Documentation Log
Historic Potteries Site
Trenton, Mercer County, New Jersey
May 20 through 29, 2024



Photograph 1: From May 20 through 29, 2024, the U.S. Environmental Protection Agency, Region II (EPA), with the support of Weston Solutions, Inc. Superfund Technical Assessment & Response Team V (START V), conducted particulate monitoring and lead air sampling as part of the Removal Action at the Ulysses S. Grant Intermediate School located in the vicinity of the Site. DustTrak® particulate monitors located around the Site perimeter were operating each workday to measure particulate matter smaller than 10 microns in diameter (PM10) concentrations in real time. Air sample locations were co-located with air monitoring locations, and air samples were submitted for laboratory analysis as directed by the EPA On-Scene Coordinator (OSC) during ground intrusive activities. The photo above is a view of START V setting up the air monitoring station.



Photograph 2: The photo above is a view of the full air monitoring station set up.

Attachment D

Chains of Custody Records

AC17585

USEPA

DateShipped: 5/20/2024

CarrierName: Hand-Delivered

AirbillNo: NA

CHAIN OF CUSTODY RECORD

Case #: 865

Contact Name: Olga Kuzmitskaia

Contact Phone: 732-570-4943

No: 2-052024-0030-0138-01

Cooler #: 1

Lab: EMSL Analytical, Inc.

Lab Phone: 856-303-2532

Lab #	Sample #	Analyses	Matrix	Sample Date	Numb Cont	Container	Preservative	Volume	Vol Units	Lab QC	Start_Date	Start_Time	Stop_Date	Stop_Time
1	FB-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	0	Liters	N	5/20/2024 10:05:00 PM	6:04:00 PM	5/20/2024 10:04:00 PM	6:04:00 PM
2	HP002-P019-ASL01-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	1254.654	Liters	N	5/20/2024 4:00:00 PM	7:56:00 AM	5/20/2024 4:00:00 PM	4:32:00 PM
3	HP002-P019-ASL02-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	1240.8731	Liters	N	5/20/2024 4:00:00 PM	7:49:00 AM	5/20/2024 4:00:00 PM	4:23:00 PM
4	HP002-P019-ASL03-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	1240.2306	Liters	N	5/20/2024 4:00:00 PM	7:42:00 AM	5/20/2024 4:00:00 PM	4:16:00 PM
5	HP002-P019-ASL04-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	1218.56725	Liters	N	5/20/2024 4:00:00 PM	7:30:00 AM	5/20/2024 4:00:00 PM	4:05:00 PM
6	LB-240520-01	Lead - NIOSH 7303M	Air	5/20/2024	1	MCE Cassette	None	0	Liters	N	5/20/2024 10:07:00 PM	6:07:00 PM	5/20/2024 10:07:00 PM	6:07:00 PM
VC														

Special Instructions: RFP # 865. Please email results to olga.kuzmitskaia@westonsolutions.com and michael.lang@westonsolutions.com. 21 day validated TAT

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analysis	Weston Solutions Inc <i>Michael Lang</i>	5/20/24 7:40:00 1900	<i>Donnelly</i>	5/21/24 9:40am	

AC17855

USEPA

DateShipped: 5/22/2024

CarrierName: FedEx

AirbillNo: 776512015287

CHAIN OF CUSTODY RECORD

Case #:

Contact Name: Olga Kuzmitskaia

Contact Phone: 732-570-4943

No: 2-052224-0030-0138-01

Cooler #: 1

Lab: EMSL Analytical, Inc.

Lab Phone: 856-303-2532

Lab #	Sample #	Location	Analyses	Matrix	Sample Type	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC
1	FB-240522-01	NA	Lead - NIOSH 7303M	Air	Field Blank	5/22/2024	07:04	1	MCE Cassette	None	N
2	HP002-P019-ASL01-240522-01	HP002-P019-ASL01	Lead - NIOSH 7303M	Air	Field Sample	5/22/2024	16:09	1	MCE Cassette	None	N
3	HP002-P019-ASL02-240522-01	HP002-P019-ASL02	Lead - NIOSH 7303M	Air	Field Sample	5/22/2024	16:05	1	MCE Cassette	None	N
4	HP002-P019-ASL05-240522-01	HP002-P019-ASL05	Lead - NIOSH 7303M	Air	Field Sample	5/22/2024	16:01	1	MCE Cassette	None	N
5	HP002-P019-ASL06-240522-01	HP002-P019-ASL06	Lead - NIOSH 7303M	Air	Field Sample	5/22/2024	15:58	1	MCE Cassette	None	N

Special Instructions: RFP # 865. Please email results to olga.kuzmitskaia@westonsolutions.com and michael.lang@westonsolutions.com. 21 day validated TAT

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
			<i>[Signature]</i> FX	5/23/24	9:30 am
			Colleen Palladino	5/23/24	9:30 AM

email client release signature 5/23 CP

AirbillNo:

CHAIN OF CUSTODY RECORD

Case #: 865

Contact Name: Olga Kuzmitskaia

Contact Phone: 732-570-4943

No: 2-052324-0030-0138-01

Cooler #: 1

Lab: EMSL Analytical, Inc.

Lab Phone: 856-303-2532

[illegible]

Special Instructions: RFP # 865. Please email results to olga.kuzmitskaia@westonsolutions.com and michael.lang@westonsolutions.com. 21 day validated TAT

SAMPLES TRANSFERRED FROM	
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All Analyses	Wiston Solutions 	5/23/24 1800	 EMSL	5/24/24 11AM	Acceptable

⑧

AirbillNo: 7765 88303985

Case #: 865

Contact Phone: 732-570-4943

Lab Phone: 856-303-2532

- 1
- 2
- 3
- 4
- 5

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
ATI Samples ATI Analysis	Weston Solutions Inc [Signature]	5/28/24 1800	E. Quinn FX EMSL Colleen Palladino	5/29/24 5/29/24	10:10am 1:35pm

Need TAT 7 days AA or
Need Test ICP

AirbillNo:



Case #: 865

Contact Phone: 732-570-4943

Lab Phone: 856-303-2532

- 1
- 2
- 3
- 4
- 5

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples At Analysis	Weston Solutions Inc 	5/29/24 1800		5/30/24 10 am	

50%

Attachment E

Final Laboratory Analytical Data

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012417585
LIMS Reference ID: AC17585
EMSL Customer ID: RFWE53

Attention: Select Contact - RFWE53
Weston Solutions [RFWE53]
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
(732) 585-4400
elementsupport@emsl.com

Project Name: RFP - #865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/21/2024 09:40
Reported: 06/05/2024 15:29

Analytical Results

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Analyst Initials	Prep /Analytical Method
Sample: FB-240520-01 Lims Reference ID: AC17585-01 Matrix: Cassettes Sampled: 05/20/24 18:04:00									
Metals									
Lead	<1.0		1	1.0	µg/m³	05/23/24 12:24	05/23/24 18:31	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL01-240520-01 Lims Reference ID: AC17585-02 Matrix: Cassettes Sampled: 05/20/24 16:32:00									
Metals									
Lead	<0.80		1	0.80	µg/m³	05/23/24 12:24	05/23/24 18:34	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL02-240520-01 Lims Reference ID: AC17585-03 Matrix: Cassettes Sampled: 05/20/24 16:23:00									
Metals									
Lead	<0.81		1	0.81	µg/m³	05/23/24 12:24	05/23/24 18:37	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL03-240520-01 Lims Reference ID: AC17585-04 Matrix: Cassettes Sampled: 05/20/24 16:16:00									
Metals									
Lead	<0.81		1	0.81	µg/m³	05/23/24 12:24	05/23/24 18:47	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL04-240520-01 Lims Reference ID: AC17585-05 Matrix: Cassettes Sampled: 05/20/24 16:05:00									
Metals									
Lead	<0.82		1	0.82	µg/m³	05/23/24 12:24	05/23/24 18:50	SE	NIOSH 7303M/NIOSH 7303
Sample: LB-240520-01 Lims Reference ID: AC17585-06 Matrix: Cassettes Sampled: 05/20/24 18:07:00									
Metals									
Lead	<1.0		1	1.0	µg/m³	05/23/24 12:24	05/23/24 18:54	SE	NIOSH 7303M/NIOSH 7303

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012417585**LIMS Reference ID:** AC17585**EMSL Customer ID:** RFWE53**Attention:** Select Contact - RFWE53

Weston Solutions [RFWE53]
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
(732) 585-4400
elementsupport@emsl.com

Project Name:

RFP - #865

Customer PO:**EMSL Sales Rep:**

Christopher Brandt

Received:

05/21/2024 09:40

Reported:

06/05/2024 15:29

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Owen McKenna Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.

Attention: Michael Lang
Weston Solutions [RFWE53]
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
(908) 565-2974
michael.lang@westonsolutions.com

Project Name: RFP # 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/23/2024 09:30
Reported: 06/07/2024 15:47

Analytical Results

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Analyst Initials	Prep /Analytical Method
Sample: FB-240522-01									
Lims Reference ID:				AC17855-01		Matrix: Cassettes		Sampled: 05/22/24 07:04:00	
Metals									
Lead	<1.0		1	1.0	ug/filter	05/31/24 09:36	05/31/24 13:16	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL01-240522-01									
Lims Reference ID:				AC17855-02		Matrix: Cassettes		Sampled: 05/22/24 16:09:00	
Metals									
Lead	<1.0		1	1.0	ug/filter	05/31/24 09:36	05/31/24 13:19	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL02-240522-01									
Lims Reference ID:				AC17855-03		Matrix: Cassettes		Sampled: 05/22/24 16:05:00	
Metals									
Lead	<1.0		1	1.0	ug/filter	05/31/24 09:36	05/31/24 13:23	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL05-240522-01									
Lims Reference ID:				AC17855-04		Matrix: Cassettes		Sampled: 05/22/24 16:01:00	
Metals									
Lead	<1.0		1	1.0	ug/filter	05/31/24 09:36	05/31/24 13:32	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL06-240522-01									
Lims Reference ID:				AC17855-05		Matrix: Cassettes		Sampled: 05/22/24 15:58:00	
Metals									
Lead	<1.0		1	1.0	ug/filter	05/31/24 09:36	05/31/24 13:36	SE	NIOSH 7303M/NIOSH 7303

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012417855
LIMS Reference ID: AC17855
EMSL Customer ID: RFWE53

Attention: Michael Lang
Weston Solutions [RFWE53]
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
(908) 565-2974
michael.lang@westonsolutions.com

Project Name: RFP # 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/23/2024 09:30
Reported: 06/07/2024 15:47

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Owen McKenna Laboratory Manager or other approved signatory

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**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012418154
LIMS Reference ID: AC18154
EMSL Customer ID: RFWE53

Attention: Olga Kumitskaia
Weston Solutions [RFWE53]
1090 King George Post Road, Suite 201
Edison, New Jersey 08837
(856) 303-2532
olga.kumitskaia@westonsolutions.com

Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/28/2024 09:00
Reported: 06/14/2024 13:40

Analytical Results

Analyte	Results	RL	Volume(L)	Prep Date & Tech	Prep Method	Analysis Date & Analyst	Analytical Method	Q	DF
Client Sample ID: FB-240523-01							Date Sampled: 05/23/24		
Matrix: Cassettes							LIMS Reference ID: AC18154-01		
Lead	<1.0 ug/filter	1.0 ug/filter		05/31/24 LXX	NIOSH 7303M	05/31/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL01-240523-01/HP002-P019-ASL01							Date Sampled: 05/23/24		
Matrix: Cassettes							LIMS Reference ID: AC18154-02		
Lead	<2.1 µg/m³	2.1 µg/m³	468.55	05/31/24 LXX	NIOSH 7303M	05/31/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL02-240523-01/HP002-P019-ASL02							Date Sampled: 05/23/24		
Matrix: Cassettes							LIMS Reference ID: AC18154-03		
Lead	<2.4 µg/m³	2.4 µg/m³	417.326	05/31/24 LXX	NIOSH 7303M	05/31/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL05-240523-01/HP002-P019-ASL05							Date Sampled: 05/23/24		
Matrix: Cassettes							LIMS Reference ID: AC18154-04		
Lead	<2.5 µg/m³	2.5 µg/m³	402.767	05/31/24 LXX	NIOSH 7303M	05/31/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL06-240523-01/HP002-P019-ASL06							Date Sampled: 05/23/24		
Matrix: Cassettes							LIMS Reference ID: AC18154-05		
Lead	<2.7 µg/m³	2.7 µg/m³	370.649	05/31/24 LXX	NIOSH 7303M	05/31/24 SE	NIOSH 7303	1	
Sample Comments:									

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012418154
LIMS Reference ID: AC18154
EMSL Customer ID: RFWE53

Attention: Olga Kumitskaia
Weston Solutions [RFWE53]
1090 King George Post Road, Suite 201
Edison, New Jersey 08837
(856) 303-2532
olga.kumitskaia@westonsolutions.com

Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/28/2024 09:00
Reported: 06/14/2024 13:40

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Owen McKenna Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. QC sample results are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012418753
LIMS Reference ID: AC18753
EMSL Customer ID: RFWE53

Attention: Olga Kumitskaia
Weston Solutions [RFWE53]
1090 King George Post Road, Suite 201
Edison, New Jersey 08837
(856) 303-2532
olga.kumitskaia@westonsolutions.com

Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/29/2024 13:35
Reported: 06/14/2024 13:41

Analytical Results

Analyte	Results	RL	Volume(L)	Prep Date & Tech	Prep Method	Analysis Date & Analyst	Analytical Method	Q	DF
Client Sample ID: FB-240528-01							Date Sampled: 05/28/24		
Matrix: Cassettes							LIMS Reference ID: AC18753-01		
Lead	<1.0 ug/filter	1.0 ug/filter		06/05/24 LXX	NIOSH 7303M	06/06/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL01-240528-01/HP002-P019-ASL01							Date Sampled: 05/28/24		
Matrix: Cassettes							LIMS Reference ID: AC18753-02		
Lead	<0.76 µg/m³	0.76 µg/m³	1314.166	06/05/24 LXX	NIOSH 7303M	06/06/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL02-240528-01/HP002-P019-ASL02							Date Sampled: 05/28/24		
Matrix: Cassettes							LIMS Reference ID: AC18753-03		
Lead	<0.78 µg/m³	0.78 µg/m³	1275.885	06/05/24 LXX	NIOSH 7303M	06/06/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL05-240528-01/HP002-P019-ASL05							Date Sampled: 05/28/24		
Matrix: Cassettes							LIMS Reference ID: AC18753-04		
Lead	<0.78 µg/m³	0.78 µg/m³	1280.4	06/05/24 LXX	NIOSH 7303M	06/06/24 SE	NIOSH 7303	1	
Sample Comments:									
Client Sample ID: HP002-P019-ASL06-240528-01/HP002-P019-ASL06							Date Sampled: 05/28/24		
Matrix: Cassettes							LIMS Reference ID: AC18753-05		
Lead	<0.80 µg/m³	0.80 µg/m³	1253.54	06/05/24 LXX	NIOSH 7303M	06/06/24 SE	NIOSH 7303	1	
Sample Comments:									

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012418753**LIMS Reference ID:** AC18753**EMSL Customer ID:** RFWE53

Attention: Olga Kumitskaia
Weston Solutions [RFWE53]
1090 King George Post Road, Suite 201
Edison, New Jersey 08837
(856) 303-2532
olga.kumitskaia@westonsolutions.com

Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/29/2024 13:35
Reported: 06/14/2024 13:41

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Owen McKenna Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. QC sample results are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.

**EMSL Analytical, Inc.**

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EMSL-CIN-01

EMSL Order ID: 012418756
LIMS Reference ID: AC18756
EMSL Customer ID: RFWE53

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Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/30/2024 10:00
Reported: 06/13/2024 17:34

Analytical Results

Analyte	Result	Q	DF	RL	Units	Prepared Date/Time	Analyzed Date/Time	Analyst Initials	Prep /Analytical Method
Sample: FB-240529-01 Lims Reference ID: AC18756-01 Matrix: Cassettes Sampled: 05/29/24 15:34:00									
Metals									
Lead	<1.0		1	1.0	ug/filter	06/05/24 16:49	06/06/24 14:53	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL01-240529-01/HP002-P019-ASL01 Lims Reference ID: AC18756-02 Matrix: Cassettes Sampled: 05/29/24 15:23:00									
Metals									
Lead	<0.83		1	0.83	µg/m³	06/05/24 16:49	06/06/24 14:56	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL02-240529-01/HP002-P019-ASL02 Lims Reference ID: AC18756-03 Matrix: Cassettes Sampled: 05/29/24 15:17:00									
Metals									
Lead	<0.85		1	0.85	µg/m³	06/05/24 16:49	06/06/24 14:59	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL05-240529-01/HP002-P019-ASL05 Lims Reference ID: AC18756-04 Matrix: Cassettes Sampled: 05/29/24 15:27:00									
Metals									
Lead	<0.85		1	0.85	µg/m³	06/05/24 16:49	06/06/24 15:03	SE	NIOSH 7303M/NIOSH 7303
Sample: HP002-P019-ASL06-240529-01/HP002-P019-ASL06 Lims Reference ID: AC18756-05 Matrix: Cassettes Sampled: 05/29/24 15:37:00									
Metals									
Lead	<0.84		1	0.84	µg/m³	06/05/24 16:49	06/06/24 15:06	SE	NIOSH 7303M/NIOSH 7303

**EMSL Analytical, Inc.**

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Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012418756
LIMS Reference ID: AC18756
EMSL Customer ID: RFW53

Attention: Olga Kumitskaia
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Project Name: 865

Customer PO:
EMSL Sales Rep: Christopher Brandt
Received: 05/30/2024 10:00
Reported: 06/13/2024 17:34

Notes and Definitions

Item	Definition
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[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

Owen McKenna Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.

Attachment F

Site-Specific Community Air Monitoring Plan



Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837-3703
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www.westonsolutions.com

SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

May 2, 2024

Mr. Jonathan Byk, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, New Jersey 08837

EPA CONTRACT NO: 68HE0319D0004

TD NO: TO-0030-0138

DC NO: STARTV-05-F-0107

**SUBJECT: FINAL SITE-SPECIFIC COMMUNITY AIR
MONITORING PLAN HISTORIC POTTERIES SITE,
TRENTON, MERCER COUNTY, NEW JERSEY**

Dear Mr. Byk,

Enclosed please find the Final Site-Specific Community Air Monitoring Plan (CAMP) for the air monitoring and sampling activities to be conducted in support of the Removal Action at the Historic Potteries Site located in Trenton, Mercer County, New Jersey. Site activities will commence on May 13, 2024 and are expected to continue for approximately two weeks.

If you have any questions or comments, please do not hesitate to contact me at (732) 570-4943.

Sincerely,

Weston Solutions, Inc.

Olga Kuzmitskaia
START V Site Project Manager

Enclosure
cc: TDD File No.: TO-0030-0138

FINAL SITE-SPECIFIC COMMUNITY AIR MONITORING PLAN

HISTORIC POTTERIES SITE Trenton, Mercer County, New Jersey

Site Code: A29V
CERCLIS Code: NJN000203535

Prepared by:

Superfund Technical Assessment & Response Team V
Weston Solutions, Inc.
Federal East Division
Edison, New Jersey 08837

Prepared for:

U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, New Jersey 08837

DC NO: STARTV-05-F-0107
TD NO: TO-0030-0138
EPA Contract No: 68HE0319D0004

May 2024

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Attachment B - NIOSH Analytical Methods

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared to support the Removal Action (RA) at the Historic Potteries Site in Trenton, NJ. Weston Solutions, Inc., Removal Support Team 3 (RST 3), prepared this CAMP at the request of The U.S. Environmental Protection Agency, Region II (EPA).

This CAMP presents air monitoring activities to be performed while implementing RA activities that may produce fugitive dust emissions. This CAMP identifies action levels and associated control measures to be implemented based on the results of air monitoring. Air monitoring for on Site personnel safety will be addressed in the ERRS contractor's Site-specific Health and Safety Plans. The air monitoring activities described in this CAMP will be performed by the START V contractor during implementation of RA activities that may produce fugitive dust.

1.1 Community Air Monitoring Program Objectives

START V has been tasked by EPA with providing field support as part of Removal Action (RA) activities at the Site. EPA has tasked its Emergency and Rapid Response Services contractor (ERRS) with installing temporary soil covers consisting of certified clean fill, mulch, soil/sod, and artificial turf over lead contaminated soil areas. As part of the scope of work (SOW) for the RA, minor excavation of some areas of the site and backfilling with clean materials will be required. During these activities, dust suppression will be performed as needed during Site activities (i.e., soil excavation). Consequently, START V will perform air monitoring using particulate monitors (i.e., DustTrak®) to ensure that site engineering controls for dust suppression are effective in protecting the health of all site personnel (workers, students and faculty) and adjacent residences from fugitive dust which may potentially contain site-related contaminants. As per the EPA OSC, air sample locations will be co-located with air monitoring locations, and air samples will be submitted for laboratory analysis as directed by the EPA On-Scene Coordinator (OSC) during ground intrusive activities. Air monitoring and sampling locations will be determined on-site by the OSC based on the SOW for the day and prevailing weather conditions documented using global positioning system (GPS) technology. Air monitoring and sampling will be conducted throughout the duration of activities associated with excavation of contaminated soils. The following objectives have been set for the Site air monitoring program:

- Establish a Site-Specific Action Level for dust particulate concentration;
- Continuously monitor dust particulate concentrations in air to ensure that off-site migration of contaminants remain below the Site-Specific Action Level;
- Collect confirmation air samples for lead analysis to ensure the effectiveness of the engineering control being utilized on-site for dust suppression; and
- Establish corrective actions to be taken in the event that temporary exceedances of the Site-Specific Action Level are experienced.

This Site-Specific CAMP outlines the air quality monitoring and sampling procedures to be followed in order to protect on-site personnel and the surrounding community from potential airborne contaminant releases during the implementation of the Removal Action.

2.0 PERIMETER AND COMMUNITY AIR MONITORING

2.1 Air Monitoring Procedures

Air monitoring activities will be conducted in accordance with the procedures outlined within the EPA guidance document entitled, “Superfund Program Representative Sampling Guidance, Volume 2: Air (Short-Term Monitoring), Interim Final. 1995. EPA 540/R-95/140. (OSWER Directive 9360.4-09, PB 96-963206).” Appropriate activities as outlined within this document include the monitoring necessary to ensure appropriate health and safety levels for protection of on-site personnel and to ensure that the surrounding community is not exposed to Site-related constituents at concentrations above the Site-Specific Action Level.

Real-time particulate air monitors (e.g., DustTraks or equivalent) equipped with PM10 (particulate matter smaller than 10 microns in diameter) detectors will be used to monitor dust particulate levels throughout the duration of the Removal Action, specifically during the excavation of contaminated soil. The monitors will be operated each workday to measure PM10 concentrations in real time.

Up to four air monitoring stations will be located around the Site perimeter; one upwind station, and up to three downwind stations.

The monitors are calibrated by the equipment manufacturer prior to being used at the Site. When the monitors are turned on daily, the instrument is self-calibrating. Once turned on, the monitors record dust concentrations on a 15-minute time-weighted average (TWA).

Meteorological data will be obtained from Weather Underground (<http://www.wunderground.com/>) and recorded daily in the Site logbook.

Meteorological monitoring will be conducted using a meteorological system to measure wind speed, wind direction, and temperature. The meteorological sensors will be positioned to provide for representative readings relative to the Site. Meteorological readings will be recorded on a data logging device will be recorded in the on-site files and will be available for review. Readings will be evaluated at least three times per day (i.e., once in the early morning, once in the mid-afternoon, and once in the late afternoon) by START V to determine the upwind and downwind boundaries of the Site.

Perimeter air monitoring will consist of continuous real-time air quality monitoring and data collection. Monitoring locations will be selected by the EPA OSC and will include locations in the vicinity of residences adjacent to work activities at the Site. The monitoring stations will be linked via a wireless network-based communications system, which will provide instantaneous real-time air quality readings through a computer server. The air monitoring data generated will help to determine if dust levels have exceeded the Site-Specific Action Level and to ensure the

effectiveness of engineering controls (i.e., dust suppression). Although air monitoring data from each monitoring station is automatically being stored real-time in the computer server, the air monitoring data will be downloaded from each DustTrak unit to a field computer or electronic data storage device at the end of each workday.

Table 2-1: Air Monitoring Specifications

Direct Reading Instrumentation	Monitoring Locations	Monitored Parameters
DustTraks	<ul style="list-style-type: none"> Perimeter monitoring Workspace monitoring 	Total PM ₁₀ Particulates

2.0 Basis for Establishing the Air Monitoring Action Level

The community air monitoring program at the Site consists of a combination of perimeter and community monitoring for particulates (dust). In accordance with EPA National Ambient Air Quality Standards (NAAQS), the particulate Action Level measured by the PM₁₀ concentration was 22.97 milligrams per cubic meter (mg/m³) [22,970 micrograms per cubic meter (μg/m³)]. This was calculated using the following equation, which calculates a corresponding PM₁₀ Action Level for contaminated dust for worker exposure limit based on the Occupational Safety and Health Administration (OSHA) Action Level and contaminant concentration on Site, then dividing the result by a safety factor. One day of background dust monitoring and air sampling will be completed prior to the start of work onsite.

$$\text{PM}_{10} \text{ Action Level (mg/m}^3\text{)} = \frac{(10^6 \text{ mg/kg})(\text{OSHA Action Level mg/m}^3\text{)}}{(\text{Concentration mg/kg})(\text{Safety Factor})}$$

Where:

10⁶ mg/kg = conversion factor

OSHA Action Level for Lead = 0.03 mg/m³ (8-hour TWA) Concentration = highest concentration detected at the Site (653 mg/kg) Safety Factor = degree of confidence of concentration, 1 being very confident and 10 being not confident

$$\begin{aligned} \text{PM}_{10} \text{ Action Level (mg/m}^3\text{)} &= \frac{(10^6 \text{ mg/kg})(0.03 \text{ mg/m}^3\text{)}}{(653 \text{ mg/kg})(2)} \\ &= 22.97 \text{ mg/m}^3 \text{ (22,970 } \mu\text{g/m}^3\text{)} \end{aligned}$$

The calculated Action Level assumes that the Site contaminant (lead) will be present in airborne dust at the highest concentration detected in Site soils (653 mg/kg). Although 22.97 mg/m³ would be an acceptable Site-Specific particulate Action Level for lead, 0.100 mg/m³ (100 µg/m³), 15 minute average over background level, with a maximum of 0.150 mg/m³ (150 µg/m³) 15 minute average will be adopted as the Site-Specific particulate Action Level based on the NAAQS for PM10. See Table 2-2 for the air monitoring Action Levels for particulates at the Site.

Table 2-2: Community Air Monitoring Action Level for Particulates (Direct Reading Instrumentation)

Parameter	Monitoring Locations and Interval	Action Level (Above Upwind)	Response Activity
Dust (PM ₁₀)	Perimeter and community monitoring locations with dust readings every 60 seconds, calculate 15-minute average during Removal Action activities.	< 100 µg/m ³	<ul style="list-style-type: none"> • Continue monitoring.
		≥ 100 µg/m ³	<ul style="list-style-type: none"> • Continue monitoring. • Begin dust suppression measures. • Notify field crew that early warning alert level has been reached.
		≥ 150 µg/m ³	<ul style="list-style-type: none"> • Cease activities; re-evaluate dust suppression measures. • Analyze collected air samples for lead.

2.1 Non-working Hours

No release of contaminants above background level is anticipated during non-working hours, therefore, no monitoring will be conducted during that time period.

2.2 Equipment Maintenance and Calibration

All air monitoring equipment will be maintained in accordance with applicable manufacturer recommendations. All pertinent data will be logged in a health and safety logbook (or equivalent) and maintained on site for the duration of site activities. All direct-reading instrumentation will be calibrated in accordance with the manufacturer's instructions.

2.3 Engineering Controls

Dust suppression measures, utilizing a water mist, will be the primary engineering control used during all site intrusive activities. It will be implemented as necessary to prevent the generation of dust during excavation activities.

Measures for airborne particulate control may include, but are not limited to, the following items:

- Apply water mist to point of dust generation.
- Apply water to exposed soil.
- Cover staged soil piles with polyethylene sheeting or other appropriate material.
- Reduce surface area of exposed material area.
- Containerize and cover material.
- Modify the pre-demolition/demolition or debris handling methods.
- Modify the rate soil excavation activities or specific methods.

Continued exceedances of the particulate control levels may result in work stoppage (as determined by the OSC) until such time that the contractor has demonstrated an ability to consistently conduct the work without exceeding the action levels.

3.0 AIR SAMPLING

3.1 Air Sampling Procedures

In addition to real-time dust monitoring, periodic air sampling will be conducted at each station during ground intrusive activities or at the direction of the OSC. Low flow air sampling pumps (Gilian GilAir® programmable pumps, or equivalent [low flow]) will be used for air sample collection. Air samples will be collected in accordance with the National Institute of Occupational Safety and Health (NIOSH) Method 7300 for lead.

Air samples will be collected using air sampling media [0.8 micrometer (µm), mixed cellulose ester (MCE) filters, or 5.0-µm, polyvinyl chloride (PVC) membrane filters) connected to the GilAir pumps via Teflon® tubing. The sampling pumps will be calibrated to collect the target volume (greater than 500 liters) at flow rates between 1.0 and 4.0 liters per minute (L/min) for a period of eight hours or the duration of the Site activities.

Air samples will be collected from perimeter air monitoring locations upon initiation of intrusive activities (excavation) and periodically as needed depending on changes in Site conditions, expected elevated contaminant concentrations in soils being excavated, and if analytical results of previous air samples indicate there is a need for further sampling. The samples will be submitted to the assigned laboratory for lead analysis after collection. The samples will be analyzed in accordance with NIOSH Method 7300 for lead.

Table 3-1: NIOSH Sampling Procedures

Analyte	Sampling Method	Sampling Media	Recommended Flow Rate (Liters per Minute)*	Total Volume	Site-Specific Action Level
Lead	NIOSH Method 7300	MCE Filters (0.8-µm, cellulose ester membrane, or 5.0-µm, polyvinyl chloride membrane)	1.0 to 4.0 L/min	> 500 Liters	30 µg/m ³

Notes: Actual flow rates will be determined in the field based on prevailing Site conditions. Air sampling activities may be cancelled for the day if high humidity conditions and precipitation events occur.

3.2 Basis for Establishing Air Sampling Action Level

The NIOSH Recommended Exposure Limit (REL) for lead in air is 50 µg/m³ measured over an 8-hour TWA; the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) for lead in air is also no greater than 50 µg/m³ averaged over an 8-hour period; and the OSHA Action Level for lead in air is 30 µg/m³. This Action Level will be adopted as the Site-Specific Action Level. For effective implementation of engineering controls, all air sampling

results will be compared with the Site-Specific Action Level. Preliminary and validated analytical results of air samples will be provided on a standard turnaround time basis, unless otherwise specified by the EPA OSC.

If analytical results of air samples indicate that the Site-Specific Risk-Based Action Levels were exceeded, the cause of the exceedance will be investigated, and appropriate corrective actions will be implemented immediately. An evaluation of other engineering control options, additional off-site air monitoring/sampling and a reduction in daily work hours will be considered. See Table 3-2 for the Action Level established for the Removal Action at the Site.

Table 3-2: Community Air Sampling Action Level

Parameter	Sampling Interval and Locations	Action Level (Above Background)	Response Activity
Lead Dust	Upon excavation and backfilling activities and periodically; at perimeter and community monitoring locations	$< 30 \mu\text{g}/\text{m}^3$	<ul style="list-style-type: none"> Continue monitoring PM₁₀.
		$\geq 30 \mu\text{g}/\text{m}^3$	<ul style="list-style-type: none"> Continue monitoring. Begin dust continuous dust suppression measures throughout all site work activities. Notify field crew that early warning alert level has been reached.
		$\geq 50 \mu\text{g}/\text{m}^3$	<ul style="list-style-type: none"> Cease activities; investigate cause. Re-evaluate dust suppression measures. Consider additional off-site air monitoring/sampling. Evaluate site conditions for other engineering control options.

3.3 Non-working Hours

No release of contaminants above background level is anticipated during non-working hours, therefore, no air sampling will be conducted during that time period.

4.0 REPORTING OF AIR MONITORING AND SAMPLING RESULTS

4.1 Community Notification Procedures

The specific community notification procedures will be at the discretion of the EPA OSC. The exact notification procedures will be developed based on the most feasible means of getting information to the surrounding community in an effective, useful, and timely manner.

4.2 On-Site Reporting Procedures

The Site Health and Safety representative will maintain a sample log and report airborne levels on a daily basis to the EPA OSC. Elevated results (above Site-Specific Action Level) will be reported

immediately to the EPA OSC so that appropriate engineering controls can be implemented to reduce airborne levels.

4.3 Reporting Procedures for Site Employees

Where personal sampling for on-site workers is performed, the Contractor will be responsible for informing employees and subcontractors of their monitoring results to comply with OSHA regulations and good occupational health practices. Within five working days after the receipt of monitoring results, the Contractor will notify each employee of the results representing that employee's level of exposure.

Whenever the results indicate that employee exposure exceeds the OSHA PEL, notification shall be provided to the affected employee stating that the OSHA PEL was exceeded and providing a description of the corrective action taken to reduce exposures to a level below the OSHA PEL.

4.4 Reporting Procedures for the Analytical Laboratory

Chain-of-custody (COC) procedures will be followed during sample handling and transport to the assigned laboratory. Areas sampled, tasks performed, duration, volumes, and laboratory results will be provided in a letter report format within two weeks of receiving the sample analysis results. Sampling and analysis will be performed in accordance with the appropriate NIOSH method under the direction of the EPA OSC.

4.5 Data Review and Interpretation

The general public will be able to review the captured data for the Site once the air sampling data has been validated and finalized and based upon the EPA OSC's authorization for release of the information. Monitoring records will be maintained on site.

Attachment A

Figures

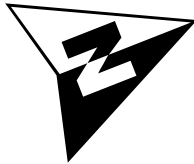


SCALE

1:720

LEGEND

- Air Monitoring Station
- Tax Parcel Boundaries



Ulysses S. Grant Intermediate
School (HP002-P019)
Air Monitoring Stations

Historic Potteries
Trenton, New Jersey

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

GIS ANALYST: K. HEULITT
EPA OSC: J. PETTY
START V SPM: O. KUZMITSKAIA
CHARGE #: 40200.051.930.5045



Attachment B

NIOSH Analytical Methods

ELEMENTS by ICP **(Nitric/Perchloric Acid Ashing)**

7300

MW: Table 1

CAS: Table 2

RTECS: Table 2

METHOD: 7300, Issue 3

EVALUATION: PARTIAL

Issue 1: 15 August 1990

Issue 3: 15 March 2003

OSHA: Table 2

NIOSH: Table 2

ACGIH: Table 2

PROPERTIES: Table 1

ELEMENTS:	aluminum*	calcium	lanthanum	nickel	strontium	tungsten*
	antimony*	chromium*	lithium*	potassium	tellurium	vanadium*
	arsenic	cobalt*	magnesium	phosphorus	tin	ytrium
	barium	copper	manganese*	selenium	thallium	zinc
	beryllium*	iron	molybdenum*	silver	titanium	zirconium*
	cadmium	lead*				

*Some compounds of these elements require special sample treatment.

SAMPLING		MEASUREMENT	
SAMPLER:	FILTER (0.8- μ m, cellulose ester membrane, or 5.0- μ m, polyvinyl chloride membrane)	TECHNIQUE:	INDUCTIVELY COUPLED ARGON PLASMA, ATOMIC EMISSION SPECTROSCOPY (ICP-AES)
FLOWRATE:	1 to 4 L/min	ANALYTE:	elements above
VOL-MIN:	Table 1	ASHING	
-MAX:	Table 1	REAGENTS:	conc. HNO ₃ / conc. HClO ₄ (4:1), 5 mL; 2mL increments added as needed
SHIPMENT:	routine	CONDITIONS:	room temperature, 30 min; 150 °C to near dryness
SAMPLE		FINAL	
STABILITY:	stable	SOLUTION:	4% HNO ₃ , 1% HClO ₄ , 25 mL
BLANKS:	2 to 10 field blanks per set	WAVELENGTH:	depends upon element; Table 3
ACCURACY		BACKGROUND	
		CORRECTION:	spectral wavelength shift
RANGE STUDIED:	not determined	CALIBRATION:	elements in 4% HNO ₃ , 1% HClO ₄
BIAS:	not determined	RANGE:	varies with element [1]
OVERALL PRECISION (S_{rr}):	not determined	ESTIMATED LOD:	Tables 3 and 4
ACCURACY:	not determined	PRECISION (s):	Tables 3 and 4

APPLICABILITY: The working range of this method is 0.005 to 2.0 mg/m³ for each element in a 500-L air sample. This is simultaneous elemental analysis, not compound specific. Verify that the types of compounds in the samples are soluble with the ashing procedure selected.

INTERFERENCES: Spectral interferences are the primary interferences encountered in ICP-AES analysis. These are minimized by judicious wavelength selection, interelement correction factors and background correction [1-4].

OTHER METHODS: This issue updates issues 1 and 2 of Method 7300, which replaced P&CAM 351 [3] for trace elements. Flame atomic absorption spectroscopy (e.g., Methods 70XX) is an alternate analytical technique for many of these elements. Graphite furnace AAS (e.g., 7102 for Be, 7105 for Pb) is more sensitive.

REAGENTS:

1. Nitric acid (HNO_3), conc., ultra pure.
2. Perchloric acid (HClO_4), conc., ultra pure.*
3. Ashing acid: 4:1 (v/v) HNO_3 : HClO_4 . Mix 4 volumes conc. HNO_3 with 1 volume conc. HClO_4 .
4. Calibration stock solutions, 1000 $\mu\text{g/mL}$. Commercially available, or prepared per instrument manufacturer's recommendation (see step 12).
5. Dilution acid, 4% HNO_3 , 1% HClO_4 . Add 50 mL ashing acid to 600 mL water; dilute to 1 L.
6. Argon.
7. Distilled, deionized water.

* See SPECIAL PRECAUTIONS.

EQUIPMENT:

1. Sampler: cellulose ester membrane filter, 0.8- μm pore size; or polyvinyl chloride membrane, 5.0- μm pore size; 37-mm diameter, in cassette filter holder.
2. Personal sampling pump, 1 to 4 L/min, with flexible connecting tubing.
3. Inductively coupled plasma-atomic emission spectrometer, equipped as specified by the manufacturer for analysis of elements of interest.
4. Regulator, two-stage, for argon.
5. Beakers, Phillips, 125-mL, or Griffin, 50-mL, with watchglass covers.**
6. Volumetric flasks, 10-, 25-, 100-mL, and 1-L**
7. Assorted volumetric pipets as needed.**
8. Hotplate, surface temperature 150 °C.

** Clean all glassware with conc. nitric acid and rinse thoroughly in distilled water before use.

SPECIAL PRECAUTIONS: All perchloric acid digestions are required to be done in a perchloric acid hood. When working with concentrated acids, wear protective clothing and gloves.

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line.
2. Sample at an accurately known flow rate between 1 and 4 L/min for a total sample size of 200 to 2000 L (see Table 1) for TW A measurements. Do not exceed a filter loading of approximately 2 mg total dust.

SAMPLE PREPARATION:

3. Open the cassette filter holders and transfer the samples and blanks to clean beakers.
4. Add 5 mL ashing acid. Cover with a watchglass. Let stand 30 min at room temperature.
NOTE: Start a reagent blank at this step.
5. Heat on hotplate (120 °C) until ca. 0.5 mL remains.
NOTE 1: Recovery of lead from some paint matrices may require other digestion techniques. See Method 7082 (Lead by Flame AAS) for an alternative hotplate digestion procedure or Method 7302 for a microwave digestion procedure.
NOTE 2: Some species of Al, Be, Co, Cr, Li, Mn, Mo, V, and Zr will not be completely solubilized by this procedure. Alternative solubilization techniques for most of these elements can be found elsewhere [5-10]. For example, aqua regia may be needed for Mn [6,12].
6. Add 2 mL ashing acid and repeat step 5. Repeat this step until the solution is clear.
7. Remove watchglass and rinse into the beaker with distilled water.
8. Increase the temperature to 150 °C and take the sample to near dryness (ca. 0.5 mL).
9. Dissolve the residue in 2 to 3 mL dilution acid.
10. Transfer the solutions quantitatively to 25-mL volumetric flasks.
11. Dilute to volume with dilution acid.
NOTE: If more sensitivity is required, the final sample volume may be held to 10 mL.

CALIBRATION AND QUALITY CONTROL:

12. Calibrate the spectrometer according to the manufacturers recommendations.

NOTE: Typically, an acid blank and 1.0 µg/mL multielement working standards are used. The following multielement combinations are chemically compatible in 4% HNO₃/1% HClO₄:

- a. Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, La, In, Na
 - b. Ag, K, Li, Mg, Mn, Ni, P, Pb, Se, Sr, Ti, V, Y, Zn, Sc
 - c. Mo, Sb, Sn, Te, Tl, W, Zr
 - d. Acid blank
13. Analyze a standard for every ten samples.
 14. Check recoveries with at least two spiked blank filters per ten samples.

MEASUREMENT:

15. Set spectrometer to conditions specified by manufacturer.
16. Analyze standards and samples.

NOTE: If the values for the samples are above the range of the standards, dilute the solutions with dilution acid, reanalyze and apply the appropriate dilution factor in the calculations.

CALCULATIONS:

17. Obtain the solution concentrations for the sample, C_s (µg/mL), and the average media blank, C_b (µg/mL), from the instrument.
18. Using the solution volumes of sample, V_s (mL), and media blank, V_b (mL), calculate the concentration, C (mg/m³), of each element in the air volume sampled, V (L):

$$C = \frac{C_s V_s - C_b V_b}{V}, \text{mg} / \text{m}^3$$

NOTE: µg/L = mg/m³

EVALUATION OF METHOD:**Issues 1 and 2**

Method, 7300 was originally evaluated in 1981 [2,3]. The precision and recovery data were determined at 2.5 and 1000 µg of each element per sample on spiked filters. The measurements used for the method evaluation in Issues 1 and 2 were determined with a Jarrell-Ash Model 1160 Inductively Coupled Plasma Spectrometer operated according to manufacturer's instructions.

Issue 3

In this update of NIOSH Method 7300, the precision and recovery data were determined at approximately 3x and 10x the instrumental detection limits on commercially prepared spiked filters [12] using 25.0 mL as the final sample volume. Tables 3 and 4 list the precision and recovery data, instrumental detection limits, and analytical wavelengths for mixed cellulose ester (MCE) and polyvinyl chloride (PVC) filters. PVC Filters which can be used for total dust measurements and then digested for metals measurements were tested and found to give good results. The values in Tables 3 and 4 were determined with a Spectro Analytical Instruments Model End On Plasma (EOP)(axial) operated according to manufacturer's instructions.

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Method originally written by Mark Millson, NIOSH/DART, and R. DeLon Hull, Ph.D., NIOSH/DSHEFS, James B. Perkins, David L. Wheeler, and Keith Nicholson, DataChem Laboratories, Salt Lake City, UT.

TABLE 1. PROPERTIES AND SAMPLING VOLUMES

Element (Symbol)	Properties		Air Volume, L @ OSHA PEL	
	Atomic Weight	MP, °C	MIN	MAX
Silver (Ag)	107.87	961	250	2000
Aluminum (Al)	26.98	660	5	100
Arsenic (As)	74.92	817	5	2000
Barium (Ba)	137.34	710	50	2000
Beryllium (Be)	9.01	1278	1250	2000
Calcium (Ca)	40.08	842	5	200
Cadmium (Cd)	112.40	321	13	2000
Cobalt (Co)	58.93	1495	25	2000
Chromium (Cr)	52.00	1890	5	1000
Copper (Cu)	63.54	1083	5	1000
Iron (Fe)	55.85	1535	5	100
Potassium (K)	39.10	63.65	5	1000
Lanthanum	138.91	920	5	1000
Lithium (Li)	6.94	179	100	2000
Magnesium (Mg)	24.31	651	5	67
Manganese (Mn)	54.94	1244	5	200
Molybdenum (Mo)	95.94	651	5	67
Nickel (Ni)	58.71	1453	5	1000
Phosphorus (P)	30.97	44	25	2000
Lead (Pb)	207.19	328	50	2000
Antimony (Sb)	121.75	630.5	50	2000
Selenium (Se)	78.96	217	13	2000
Tin (Sn)	118.69	231.9	5	1000
Strontium (Sr)	87.62	769	10	1000
Tellurium (Te)	127.60	450	25	2000
Titanium (Ti)	47.90	1675	5	100
Thallium (Tl)	204.37	304	25	2000
Vanadium (V)	50.94	1890	5	2000
Tungsten (W)	183.85	3410	5	1000
Yttrium (Y)	88.91	1495	5	1000
Zinc (Zn)	65.37	419	5	200
Zirconium (Zr)	91.22	1852	5	200

TABLE 2. EXPOSURE LIMITS, CAS #, RTECS

Element (Symbol)	CAS #	RTECS	Exposure Limits, mg/m ³ (Ca = carcinogen)		
			OSHA	NIOSH	ACGIH
Silver (Ag)	7440-22-4	VW3500000	0.01 (dust, fume, metal)	0.01 (metal, soluble)	0.1 (metal) 0.01 (soluble)
Aluminum (Al)	7429-90-5	BD0330000	15 (total dust) 5 (respirable)	10 (total dust) 5 (respirable fume) 2 (salts, alkyls)	10 (dust) 5 (powders, fume) 2 (salts, alkyls)
Arsenic (As)	7440-38-2	CG0525000	varies	C 0.002, Ca	0.01, Ca
Barium (Ba)	7440-39-3	CQ8370000	0.5	0.5	0.5
Beryllium (Be)	7440-41-7	DS1750000	0.002, C 0.005	0.0005, Ca	0.002, Ca
Calcium (Ca)	7440-70-2	--	varies	varies	varies
Cadmium (Cd)	7440-43-9	EU9800000	0.005	lowest feasible, Ca	0.01 (total), Ca 0.002 (respir.), Ca
Cobalt (Co)	7440-48-4	GF8750000	0.1	0.05 (dust, fume)	0.02 (dust, fume)
Chromium (Cr)	7440-47-3	GB4200000	0.5	0.5	0.5
Copper (Cu)	7440-50-8	GL5325000	1 (dust, mists) 0.1 (fume)	1 (dust) 0.1 (fume)	1 (dust, mists) 0.2 (fume)
Iron (Fe)	7439-89-6	NO4565500	10 (dust, fume)	5 (dust, fume)	5 (fume)
Potassium (K)	7440-09-7	TS6460000	--	--	--
Lanthanum	7439-91-0	--	--	--	--
Lithium (Li)	7439-93-2	--	--	--	--
Magnesium (Mg)	7439-95-4	OM2100000	15 (dust) as oxide 5 (respirable)	10 (fume) as oxide	10 (fume) as oxide
Manganese (Mn)	7439-96-5	OO9275000	C 5	1; STEL 3	5 (dust) 1; STEL 3 (fume)
Molybdenum (Mo)	7439-98-7	QA4680000	5 (soluble) 15 (total insoluble)	5 (soluble) 10 (insoluble)	5 (soluble) 10 (insoluble)
Nickel (Ni)	7440-02-0	QR5950000	1	0.015, Ca	0.1 (soluble) 1 (insoluble, metal)
Phosphorus (P)	7723-14-0	TH3500000	0.1	0.1	0.1
Lead (Pb)	7439-92-1	OF7525000	0.05	0.05	0.05
Antimony (Sb)	7440-36-0	CC4025000	0.5	0.5	0.5
Selenium (Se)	7782-49-2	VS7700000	0.2	0.2	0.2
Tin (Sn)	7440-31-5	XP7320000	2	2	2
Strontium (Sr)	7440-24-6	--	--	--	--
Tellurium (Te)	13494-80-9	WY2625000	0.1	0.1	0.1
Titanium (Ti)	7440-32-6	XR1700000	--	--	--
Thallium (Tl)	7440-28-0	XG3425000	0.1 (skin) (soluble)	0.1 (skin) (soluble)	0.1 (skin)
Vanadium (V)	7440-62-2	YW2400000	--	C 0.05	--
Tungsten	7440-33-7	--	5	5 10 (STEL)	5 10 (STEL)
Yttrium (Y)	7440-65-5	ZG2980000	1	N/A	1
Zinc (Zn)	7440-66-6	ZG8600000	--	--	--
Zirconium (Zr)	7440-67-7	ZH7070000	5	5, STEL 10	5, STEL 10

TABLE 3. MEASUREMENT PROCEDURES AND DATA [1].
Mixed Cellulose Ester Filters (0.45 µm)

Element (a)	wavelength nm	Est. LOD µg/ Filter	LOD ng/mL	Certified 3x LOD (b)	% Recovery (c)	Percent RSD (N=25)	Certified 10x LOD (b)	% Recovery (c)	Percent RSD (N=25)
Ag	328	0.042	1.7	0.77	102.9	2.64	3.21	98.3	1.53
Al	167	0.115	4.6	1.54	105.4	11.5	6.40	101.5	1.98
As	189	0.140	5.6	3.08	94.9	2.28	12.9	93.9	1.30
Ba	455	0.005	0.2	0.31	101.8	1.72	1.29	97.7	0.69
Be	313	0.005	0.2	0.31	100.0	1.44	1.29	98.4	0.75
Ca	317	0.908	36.3	15.4	98.7	6.65	64.0	100.2	1.30
Cd	226	0.0075	0.3	0.31	99.8	1.99	1.29	97.5	0.88
Co	228	0.012	0.5	0.31	100.8	1.97	1.29	98.4	0.90
Cr	267	0.020	0.8	0.31	93.4	16.3	1.29	101.2	2.79
Cu	324	0.068	2.7	1.54	102.8	1.47	6.40	100.6	0.92
Fe	259	0.095	3.8	1.54	103.3	5.46	6.40	98.0	0.95
K	766	1.73	69.3	23.0	90.8	1.51	96.4	97.6	0.80
La	408	0.048	1.9	0.77	102.8	2.23	3.21	100.1	0.92
Li	670	0.010	0.4	0.31	110.0	1.91	1.29	97.7	0.81
Mg	279	0.098	3.9	1.54	101.1	8.35	6.40	98.0	1.53
Mn	257	0.005	0.2	0.31	101.0	1.77	1.29	94.7	0.73
Mo	202	0.020	0.8	0.31	105.3	2.47	1.29	98.6	1.09
Ni	231	0.020	0.8	0.31	109.6	3.54	1.29	101.2	1.38
P	178	0.092	3.7	1.54	84.4	6.19	6.40	82.5	4.75
Pb	168	0.062	2.5	1.54	109.4	2.41	6.40	101.7	0.88
Sb	206	0.192	7.7	3.08	90.2	11.4	12.9	41.3	32.58
Se	196	0.135	5.4	2.3	87.6	11.6	9.64	84.9	4.78
Sn	189	0.040	1.6	0.77	90.2	18.0	3.21	49	21.79
Sr	407	0.005	0.2	0.31	101.0	1.55	1.29	97.3	0.65
Te	214	0.078	3.1	1.54	102.0	2.67	6.40	97.4	1.24
Ti	334	0.050	2.0	0.77	98.4	2.04	3.21	93.4	1.08
Tl	190	0.092	3.7	1.54	100.9	2.48	6.40	99.1	0.80
V	292	0.028	1.1	0.77	103.2	1.92	3.21	98.3	0.84
W	207	0.075	3.0	1.54	72.2	10.1	6.40	57.6	14.72
Y	371	0.012	0.5	0.31	100.5	1.80	1.29	97.4	0.75
Zn	213	0.310	12.4	4.60	102.2	1.87	19.3	95.3	0.90
Zr	339	0.022	0.9	0.31	88.0	19.4	1.29	25	57.87

(a) Bold values are qualitative only because of low recovery.

(b) Values are certified by Inorganic Ventures INC. at 3x and 10x the approximate instrumental LOD

(c) Values reported were obtained with a Spectro Analytical Instruments EOP ICP; performance may vary with instrument and should be independently verified.

TABLE 4. MEASUREMENT PROCEDURES AND DATA [1].**Polyvinyl Chloride Filter (5.0 µm)**

Element (c)	wavelength nm	Est. LOD µg per filter	LOD ng/mL	Certified 3x LOD (b)	% Recovery (a)	Percent RSD (N=25)	Certified ¹⁷ 10x LOD (b)	% Recovery (a)	Percent RSD (N=25)
Ag	328	0.042	1.7	0.78	104.2	8.20	3.18	81.8	18.9
Al	167	0.115	4.6	1.56	77.4	115.24	6.40	92.9	20.9
As	189	0.140	5.6	3.10	100.7	5.13	12.70	96.9	3.2
Ba	455	0.005	0.2	0.31	102.4	3.89	1.270	99.8	2.0
Be	313	0.005	0.2	0.31	106.8	3.53	1.270	102.8	2.1
Ca	317	0.908	36.3	15.6	68.1	12.66	64.00	96.8	5.3
Cd	226	0.0075	0.3	0.31	105.2	5.57	1.27	101.9	2.8
Co	228	0.012	0.5	0.31	109.3	4.67	1.27	102.8	2.8
Cr	267	0.020	0.8	0.31	109.4	5.31	1.27	103.4	4.1
Cu	324	0.068	2.7	1.56	104.9	5.18	6.40	101.8	2.4
Fe	259	0.095	3.8	1.56	88.7	46.82	6.40	99.1	9.7
K	766	1.73	69.3	23.4	96.4	4.70	95.00	99.2	2.2
La	408	0.048	1.9	0.78	45.5	4.19	3.18	98.8	2.6
Li	670	0.010	0.4	0.31	107.7	4.80	1.27	110.4	2.7
Mg	279	0.098	3.9	1.56	54.8	20.59	6.40	64.5	5.7
Mn	257	0.005	0.2	0.31	101.9	4.18	1.27	99.3	2.4
Mo	202	0.020	0.8	0.31	106.6	5.82	1.27	98.1	3.8
Ni	231	0.020	0.8	0.31	111.0	5.89	1.27	103.6	3.2
P	178	0.092	3.7	1.56	101.9	17.82	6.40	86.5	10.4
Pb	168	0.062	2.5	1.56	109.6	6.12	6.40	103.2	2.9
Sb	206	0.192	7.7	3.10	64.6	22.54	12.70	38.1	30.5
Se	196	0.135	5.4	2.30	83.1	26.23	9.50	76.0	17.2
Sn	189	0.040	1.6	0.78	85.7	27.29	3.18	52.0	29.4
Sr	407	0.005	0.2	0.31	71.8	4.09	1.27	81.2	2.7
Te	214	0.078	3.1	1.56	109.6	7.49	6.40	97.3	3.8
Ti	334	0.050	2.0	0.78	101.0	9.46	3.18	92.4	5.5
Tl	190	0.092	3.7	1.56	110.3	4.04	6.40	101.9	2.0
V	292	0.028	1.1	0.78	108.3	3.94	3.18	102.5	2.6
W	207	0.075	3.0	1.56	74.9	15.79	6.40	44.7	19.6
Y	371	0.012	0.5	0.31	101.5	3.63	1.27	101.4	2.5
Zn	213	0.310	12.4	4.70	91.0	68.69	19.1	101.0	9.6
Zr	339	0.022	0.9	0.31	70.7	54.20	1.27	40.4	42.1

- (a) Values reported were obtained with a Spectro Analytical Instruments EOP ICP; performance may vary with instrument and should be independently verified.
- (b) Values are certified by Inorganic Ventures INC. at 3x and 10x the approximate instrumental LOD [12].
- (c) Bold values are qualitative only because of low recovery. Other digestion techniques may be more appropriate for these elements and their compounds.