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2021 RMAP NON-RESIDENTIAL PARCELS DATA SUMMARY REPORT SILVER BOW CREEK/BUTTE AREA NPL SITE BPSOU

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**SILVER BOW CREEK/BUTTE AREA NPL SITE
BUTTE PRIORITY SOILS OPERABLE UNIT**

Final Revised

***Residential Metals Abatement Program (RMAP)
(Non-Residential Parcels)***

2021 DATA SUMMARY REPORT (DSR)

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Appendices B, C, D and E were located at the project Citrix File Share location due to size of the files.

ACRONYMS AND ABBREVIATIONS

BPSOU	Butte Priority Soils Operable Unit
BSB	Butte-Silver Bow
CAS	Chemical Abstracts Service
CAR	Corrective Action Report
CoC	Contaminant of Concern
DQA	Data Quality Assessment
DQO	Data Quality Objective
DSR	Data Summary Report
EPA	United States Environmental Protection Agency
ICP-MS	Inductively Coupled Plasma – Mass Spectroscopy
IC	Institutional Control
ICIAP	Institutional Controls Implementation and Assurance Plan
LDS	Laboratory Duplicate Sample
LMS	Laboratory Matrix Spike
MDL	Method Detection Limit
NPL	National Priority List
PDS	Post-digestion Spike
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Control
RA	Remedial Action
RL	Reporting Limit
RPD	Relative Percent Difference
SDG	Sample Delivery Group
SOP	Standard Operating Procedure
UAO	Unilateral Administrative Order

STATEMENT OF AUTHENTICITY

Consistent with provisions of Section 2.4 of the 2020 U.S. Environmental Protection Agency (EPA) Unilateral Administrative Order Amendment (UAO Amendment) for “Partial Remedial Design/Remedial Action Implementation and Certain Operation and Maintenance at the Butte Priority Soils Operable Unit/Butte Site” (EPA Docket No. CERCLA-08-2011-0011) and the 2021 Silver Bow Creek/Butte Area National Priorities List (NPL) Site, Butte Priority Soils Operable Unit, Residential Metals Abatement Program (RMAP) Quality Assurance Project Plan (QAPP) (Non-Residential Parcels) the following data sets were considered to be final data generated or evaluated for this investigation. Data have been designated as enforcement quality or screening quality as described in the QAPP. The signatures below hereby stipulate to the authenticity and accuracy of the data and hereby waive any evidentiary or other objection as to the authenticity and accuracy of reference in identifying Remedial Action (RA).

Approved By: _____
Michael McAnulty
Project Manager
Atlantic Richfield Company

_____ Date

Approved By: _____
Nikia Greene
Remedial Project Manager
U.S. Environmental Protection Agency
Region VIII

_____ Date

Approved By: _____
Darryl Reed
Project Officer
Montana Department of Environmental Quality

_____ Date

EXECUTIVE SUMMARY

This DSR summarizes the results for soil samples collected during 2021 in accordance with *The Butte-Silver Bow (BSB) Multi-Pathway Residential Metals Abatement Program Plan* (RMAP) (BSB and Atlantic Richfield Company, 2020) sampling effort for 2021. Data contained in the report was gathered following objectives and procedures documented in the approved 2021 *Silver Bow Creek/Butte Area NPL Site, Butte Priority Soils Operable Unit, Residential Metals Abatement Program (RMAP) Quality Assurance Project Plan (QAPP) (Non-Residential Parcels)*. Data presented in the DSR were used to support decision-making for the development of Individual Site Work Plans, which detailed the remedial action if required for each property sampled. Several of the sites have undergone initial remedial actions to address exceedance to action limits.

The objective of this sampling event was to determine the nature and extent of arsenic, lead and mercury contamination in non-residential properties based on identified land use categories. Typical sampling components included playground areas, high access areas, grass areas, low access areas, flower/vegetable gardens, vegetable gardens, identified opportunistic locations and bare areas.

Composite soil samples were collected at 0 to 2 inches, 2 to 6 inches, and 6 to 12 inches in land use categories at each non-residential property, with the addition of sampling from 12 to 18 inches, and 18 to 24 inches in the flower gardens and vegetable gardens in accordance with the sampling plans and QAPP. Each composite sample represented a land use component and depth interval and was evaluated for arsenic, lead, and mercury.

Laboratory analysis was completed using a laboratory that was accredited under the National Environmental Laboratory Accreditation Program. Summaries of the analytical results were organized by non-residential school or park and were provided as Tables in Appendix A. These summaries included the laboratory Sample Delivery Group (SDG), laboratory sample identification, field sample identification, Chemical Abstracts Services (CAS) Number, chemical name, reported results and units, laboratory qualifiers, data validation qualifiers, reason codes, and enforcement/screening assessment codes and from Level A/B assessment.

Air-dried and sieved (250 µm) soil samples were digested according to modified EPA Method 3050B and analyzed for arsenic and lead by EPA Method 6020A (inductively coupled plasma - mass spectroscopy [ICP-MS]). Mercury concentrations were determined per EPA Method 7471B (Manual Cold-Vapor Technique) on “as-received” wet samples and the results corrected for percent moisture. Samples analyzed for mercury could not be air-dried and sieved due to the potential for loss of mercury due to volatilization. A portion of the field homogenized soil samples were submitted to Pace Analytical in glass jars and shipped on ice to minimize loss of mercury. Samples were digested “as-received” bulk soil. In addition, another portion of the sample was removed from the jar and used to determine percent moisture for correction to a dry weight reporting convention. A Quality Assurance/Quality Control (QA/QC) review of all analytical data collected during the 2021 Sampling Event was summarized as individual reports by SDG and provided in Appendix C.

1.0 INTRODUCTION

This Data Summary Report (DSR) summarizes arsenic, lead and mercury data collected at 20 non-residential schools and one park throughout the 2021 sampling year. The effort took place between July 12, ~~2024~~2021, and August 10, 2021. Additional investigation and confirmation samples were collected on November 11, 2021, at the Butte High and Silver Bow Montessori school facilities. Field sampling and laboratory analysis were performed as discussed in *The Butte-Silver Bow (BSB) Multi-Pathway Residential Metals Abatement Program Plan* (RMAP) (BSB and Atlantic Richfield Company, 2020) (hereinafter referred to as “the Program”) to mitigate exposure of residents of the Butte Priority Soils Operable Unit (BPSOU), the larger Butte community as a whole, as well as rural residential development within the Silver Bow Creek/Butte Area Superfund Site to sources of arsenic, lead, and mercury contamination. The current Program boundary (depicted as the 2020 RMAP Area Boundary) was presented as Figure 1.

The following information is included in this DSR:

- Objectives of the investigation.
- Location of all sampling sites.
- A description of field data and sample collection.
- Summary of Analytical Laboratory Results (Appendix A Tables)
- Level A/B Field Documentation Screening Review and Field Documentation, Pictures and Sampling As-Built Figures, and Chain-of-Custodies (Appendix B)
- Stage 2B and Stage 4 Data Validation Reports (Appendix C)
- Laboratory Level 2 and 4 data packages (Appendix D)

Appendices B, C and D were located at a Citrix File Share location due to size of the files. Access to these files was provided to EPA and CDM Smith.

The contamination may originate from both mining-related (waste rock, tailings, and aerial emissions) and non-mining-related sources. The potential sources of arsenic, lead, and/or mercury exposure addressed in this task of the Program include lead, arsenic, and total mercury present in soil. The Program used remediation and abatement of contaminated properties, and community awareness and education to ensure its effectiveness.

The Program required systematic sampling of residential soil within the BPSOU. For areas outside of BPSOU, but within the 2020 RMAP Area boundary shown in Figure 1, a test-by request campaign was implemented in place of a systematic sampling approach to identify sampling efforts and potentially necessary remedial work. The Program also required systematic sampling of playground and play areas (e.g., schools and parks) within the 2020 RMAP Area (See Figure 1). The previously referenced QAPP addressed soil sampling of non-residential parcels (schools, parks, non-residential daycares) that fall under the RMAP umbrella. Interior assessments of planned school sampling and analytical efforts were not addressed in this document and will be addressed through forthcoming QAPP revisions.

The Program contains additional institutional control (IC) measures regarding education, outreach, and tracking programs related to remedial activities at residential properties, as further described in the *BPSOU Institutional Controls Implementation and Assurance Plan* (ICIAP; Atlantic Richfield Company, 2019).

1.1. INVESTIGATION OBJECTIVES

The purpose of this sampling effort was to investigate non-residential yards for potentially raised levels of contaminants of concern (CoCs) beyond specified action levels. The BPSOU CoCs and residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) were specified in the 2020 Amendment to the Administrative Order for Partial Remedial Design/Remedial Action Implementation and Certain Operation and Maintenance at the Butte Priority Soils Operable Unit/Butte Site, Docket No. CERCLA-08-2011-0011 (2020 Order Amendment) were utilized for comparison to non-residential school-specific concentrations for all work completed within property boundaries for any depth increments sampled.

This document specifically reported data acquired by field Sampling Teams during the July through November of 2021, without regard to any resulting future action or decision-making processes.

1.2. DATA QUALITY OBJECTIVES AND ASSESSMENT

The data quality objectives (DQOs) for this project were specified in the QAPP and designed in accordance with the EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006). The objective of the DQOs for this project were as follows:

- Properties in Butte and within the Expanded 2020 RMAP Area (see Figure 1) had the potential to be contaminated by historical mining activities and related contaminants. The proximity of properties to mining wastes and operations may have resulted in contamination of non-residential properties such as schools, parks, and nonresidential daycare facilities. Perform further sampling to define where additional Remedial Action (RA) may be required.
- The sampling units were defined as the maximum area sampled to support decision-making for each of the five specified land-use categories identified for non-residential RMAP properties.
- Composite soil samples were systematically collected from each land use category identified for individual non-residential properties. The composite soil samples were analyzed for arsenic, lead, and mercury. The sample collection points, sample preparation, and analytical procedures were established to facilitate the data collected is of sufficient quality and quantity to determine which component(s) of individual non-residential yards will require RA and the depth to which RA may be required.

- Evaluated and identified the soil concentrations of arsenic, lead, and mercury at non-residential properties present at levels that may pose a risk to human health (e.g., above the action levels). The 2020 Order Amendment BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury – 147 mg/kg) were utilized for all work completed under the Program.
- Determining alternative actions. Possible alternative actions were as follows:
 - Take no action – If all analyte concentrations were below the appropriate project action level.
 - Complete Remedial Action – If an analyte concentration was above the appropriate project action level. Remedial action could consist of soil removal and disposal at an Agency-approved repository followed by backfill with Agency-approved borrow material or alternative methods of remedial action such as capping
- QA/QC was to be consistent with the QAPP and included one field duplicate collected for every 20 primary samples or once per sampling event, whichever is more frequent.

Results of the data quality assessment (DQA) verify:

~~The sample results were determined to be usable for decision making for the risk assessment, developing site-specific risk-based clean up goals, and supported an evaluation of the scope of RA. The determination of whether data are considered screening, enforcement, or rejected is based on data validation, evaluation of Level A/B assessments and compliance to CFRSSI protocols. Data were qualified based on the 2020 National Functional Guidelines, Environmental Standards interpretation of the NFG and approved QAPP criteria. Data and determined were determined to be either “S” screening level, or “E” enforcement quality or “R” rejected and qualification entered the RMAP database.~~

Since data satisfy all DQOs and field and analytical quality measures detailed in the QAPP, no corrective action was recommended at this time. Should corrective action be required in the future, a corrective action report (CAR) will be completed by the Contractor Quality Assurance Officer (QA Officer) and sent to the EPA for approval before implementation of any changes. Any corrective actions will be documented by the Contractor QA Officer and included in subsequent reports.

1.3. INVESTIGATION SITE DESCRIPTION

The Program was designed to mitigate potential exposure to sources of arsenic, lead, and mercury contamination to residents of the BPSOU and Expanded Area. In 2020, the Program was expanded to perform sampling within the 2020 RMAP Area boundary provided in Figure 1. Specific exclusion areas were also identified in Figure 1.

The Program includes systematic sampling for additional specific areas within the 2020 RMAP Area such as parks and play areas, schools, and non-residential daycares. Program eligibility was described in the *Revised Final Multi-Pathway Residential Metals Abatement Program (RMAP) Plan* (BSB and Atlantic Richfield Company, 2020). Each property sampled was further reduced to applicable land use areas components typically consisting of the following:

- Playground Areas (Land Use Category #1),
- High Access Areas (Land Use Category #2),
- Maintained Grass Areas (Land User Category #3),
- Low Access Areas (Land Use Category #4),
- Flower/Vegetable Garden (Land Use Category #5),
- Opportunistic Samples (identified in the field during field events) and
- Bare Areas, and
- Source Areas

Within these land use areas, subsample locations were selected for individual sample pits and samples were collected and composited from each of these sample pits across the yard component at various depth intervals. Individual yards and their respective subsample locations were included on maps provided in Figure 1.

2.0 SAMPLING AND ANALYSIS SUMMARY

2.1. SAMPLING SUMMARY

Soil samples were collected from 21 Butte area non-residential properties (schools and parks) located within the 2020 RMAP boundary (see Figure 1) and analyzed for arsenic, lead, and mercury. The 21 property sample locations are detailed in Table 2 and Figures 2 through 5). Samples were collected according to the Agency approved 2021 Silver Bow Creek/Butte Area NPL Site, Butte Priority Soils Operable Unit, Residential Metals Abatement Program (RMAP) Quality Assurance Project Plan (QAPP) (Non-Residential Parcels). The original sampling investigation was conducted by four field sampling crews between July 12 and August 10, 2021. A supplemental sampling investigation was conducted by one field sampling crew on November 11, 2021.

During the two sampling events, a total of 1466 primary samples and 87 field duplicates were collected. Field documentation, photos, and sampling as-builts figures are provided in Appendix B.

2.2. ANALYSIS SUMMARY

All RMAP soil samples were analyzed to determine metals concentrations via standard laboratory analytical methodologies for arsenic, lead, and mercury. Sample preparations and analyses will be in accordance with the referenced EPA analytical method specifications as well as standard laboratory practices.

Bulk composite soil samples to be analyzed for arsenic and lead collected by Pioneer Technical Services were shipped under Chain-of-Custody to the Pace Analytical Services, LLC (Pace) laboratory at 1241 Bellevue St. Ste. 9, Green Bay, WI 54302, where they were dried and sieved (250 μ m). The air-dried and sieved soil samples were shipped to the Pace laboratory at 1700 Elm Street, Suite 200, Minneapolis, Minnesota 55414, where the samples were then digested according to modified EPA Method 3050B and analyzed for arsenic and lead by EPA Method 6020A (inductively-coupled plasma-mass spectrometry [ICP-MS]).

During the initial sample collection events, Pioneer also sampled the homogenized composite soil samples for mercury analysis. The soil samples for mercury analysis were collected by subsampling the bulk sample container and a subsample aliquot was placed into glass jars for mercury to reduce the potential for inhomogeneity and maximize representativeness. These samples were shipped on ice “as-received” wet soil samples directly to Pace in Minneapolis where they were analyzed per EPA Method 7471B (Manual Cold-Vapor Technique), and the results corrected for percent moisture.

Samples analyzed for mercury could not be air-dried and sieved due to the potential for loss of mercury due to volatilization. A portion of the field homogenized soil samples

were submitted to Pace Analytical in glass jars and shipped on ice to minimize loss of mercury. Samples were digested “as-received” bulk soil. In addition, another portion of the sample was removed from the jar and used to determine percent moisture for correction to a dry weight reporting convention.

All laboratories utilized were accredited under the National Environmental Laboratory Accreditation Program. Samples were taken using hand-dug pits in accordance with the procedures detailed in the QAPP at sample locations detailed in school-specific Sampling and Analysis Plans. During the 2021 field season, a total of 1466 primary samples and 87 field duplicates were collected as part of the RMAP Non-Residential event and included 6186 individual data points met the stated DQOs and data use criteria outlined in the project QAPP. ~~With the exception of~~Except for one field duplicate sample (S-S-0009-HA2-D-3), the field duplicate concentrations confirmed the primary result (both results above or below the residential action levels) demonstrating good analytical precision, accuracy and representativeness. Based on agency discussion the higher of the two samples results (above the regulatory limit) in sample S-0009-HA2-D-3 was used for compliance evaluation by the data user. Both results were reportable results during data validation. In the case of field duplicate results that exceeded the 35% percent difference the results were qualified as estimated “J” and both results reported for evaluation by the data user. All sample results may be used to support decision-making for the risk assessment, developing site-specific risk-based clean-up goals, and support an evaluation of the scope of RA.

A number of sample results were qualified during validation, due to results outside of the prescribed QC limits defined in the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA, 2020) and the approved QAPP. These qualifications (U, J, J-, J+ or UJ) indicate some uncertainty in reported results due to accuracy and/or precision issues. The use of specific J, J- and J+ codes are based on specific qualifications and if bias of the results can be determined. The data validation reports are presented as Appendix C. ~~The validator determined the remaining results may be used to support risk assessment/decision-making.~~ The following provides a summary of qualified results suitable for use in evaluating soil samples in the RMAP Non-Residential investigations.

- Results qualified J/UJ: 15 of 6186 results (0.2 %) due to temperature upon receipt exceedances
- Results qualified U: 8 of 6186 results (0.1%) due to blank qualification
- Results qualified J-: 56 of 6186 results (0.9%) due to low laboratory matrix spike (LMS) recoveries
- Results qualified J: ~~212-144~~ of 6186 results (~~2.33-4~~%) due to low LMS recoveries and post-digestion spike (PDS) recoveries within criteria
- Results qualified J: ~~386324~~ of 6186 results (~~65.2~~%) due to high LMS/ PDS recoveries within criteria

- Results qualified J+: 394 of 6186 results (0.56%) due to high LMS/PDS recoveries
- Results qualified J: 40 of 6186 results (0.6%) due to high LMS and high imprecision
- Results qualified J+: 32 of 6186 results (0.5) due to method blank contamination
- Results qualified J: 60 of 6186 results (1.0%) due to serial dilution imprecision
- Results qualified J: 20 of 6186 results (0.3%) due to high internal standard recovery
- Results qualified J: 26 of 6186 results (0.4%) due to field duplicate imprecision
- Results qualified J: 218 of 6186 results (3.5%) due to results less than the reporting limit (RL) and above the method detection limit (MDL).
- Total results qualified: 10445 of 6186 results (16.9%) due to above listed qualification reasons. Several results were qualified due to multiple reasons; however, a single qualifier was applied to the data.

Field Data and Analytical Completeness

These qualifications, once assigned, do not limit the use of the results in risk assessments and most decision-making processes. With respect to data used in risk assessment the for purposes of decision making. The EPA Risk Assessment Guidance, Part A, Sec. 5.4.1, pg. 5-15 Data Usability (EPA, 1989) states the following with respect to use of 'J' or 'UJ' qualified results:

“Basically, the guidance here is to use J-qualified concentrations the same way as positive data that do not have this qualifier. If possible, note potential uncertainties associated with the qualifier, so that if data qualified with a J contribute significantly to the risk, the appropriate caveats can be attached.”-

Once the data have been qualified, a Level A and Level B assessment of field data was performed as detailed in Section 6.1.2.1 and Section 6.3 of the QAPP. Data that passed the Level A and Level B criteria and not qualified as estimated or rejected during the data validation process were assessed as enforcement-quality data and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process were assessed as screening-quality data. Screening-quality data can be used only for certain activities, which included engineering studies and design; however, screening-quality data in many instances may be used for most of the same purposes as enforcement-quality data if additional steps are taken to address the limitations identified during data validation. Data that did not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The data were assigned one of the following qualifiers:

- E = Enforcement quality: No qualifiers, U qualifierqualifier, or J qualifier (see note below) and meets Level A and B criteria. Note: It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result was between the MDL and RL, values were considered enforcement data. if no other qualifiers were required during validation.

- S = Screening quality: U (blank contamination J, J-, J+ or UJ qualifier and/or met only Level A criteria.
 - R = Unusable: R qualifier and/or does not meet Level A or B requirements.
-
- *Results qualified E: 535~~89~~ results (86.6 %)*
 - *Results qualified S: 82~~87~~ results (13.4 %)*
 - *Results qualified R: 0 results (0%)*

The BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) were utilized for comparison to non-residential school-specific concentration for all work completed under the non-residential QAPP. The data collected in the 2021 sample event has demonstrated some lead and arsenic values greater than the established screening levels.

One hundred percent of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

A list of school facilities with concentrations above the non-residential action levels are contained on Table 1.

2.3. SAMPLING METHODS

For each property, sampling unit extents were defined based on land use types identified at the property, based on the recommendations described in Step 4 of the QAPP DQOs.

For consistency with the RMAP and with EPA guidance, Land use designations and areas determined the number of composite subsamples collected across each sampling unit. Details of the extent and number of subsamples collected from each area of a non-residential property, were based on land use within that area, were provided in Sections 3.2.1.1 through 3.2.1.5 of the QAPP. Exterior soil sampling was conducted at multiple depth intervals (0 to 2 inches, 2 to 6 inches, and 6 to 12 inches) for all five land use categories. Flower/vegetable garden components (Category #5) were sampled at additional depth intervals of 12 to 18 inches and 18 to 24 inches. An individual site work plan (ISWP) for each non-residential property provided details of number, location, and depth of each collected sample. Further detail on sampling methods was detailed in the QAPP.

The objective of this Program was to determine the nature and extent of arsenic, lead, and mercury contamination in non-residential yards as potentially contaminated. For this sampling event, a total of 1466 primary samples and 87 field duplicate samples were collected in 2021 for the RMAP Non-Residential event. Composite soil samples were collected at depth intervals of 0-~~2 inches~~2 inches, 2-6 inches and 6-1 inches. Flower beds and gardens were also collected at 12-18 inches, and 18-24 inches ~~in order to~~to collect surface and subsurface soils to determine the extent of the arsenic, lead and mercury present. The sampling of yards included front yards, back yards, play areas,

flower gardens, vegetable gardens, rock gardens, baren areas as detailed in the individual field sampling plans.

2.4. SOIL SAMPLE IDENTIFICATION

The RMAP sample identification procedures were detailed in Section 3.4 of the QAPP and in this section. An alphanumeric coding system was used to uniquely identify each sample collected during RMAP sampling events. Sample identifiers began with the matrix, followed by the RMAP Database Resident ID. The Resident ID was a unique identifier that was associated with a specific property (address and/or geocode specific). Following the Resident ID was the parcel component, QA/QC Code (when applicable), and sample depth.

Matrix:

S – Soil

RMAP Database Resident ID: (example of R-00001)

Site Property Codes:

C – Commercial

P – Park

S – School

Resident ID:

00001 – associated with a specific address or geocode

Parcel Component:

Component IDs were derived on a site-specific basis during development of the Sample Location Map and refined by the Sampling Team (as necessary). Listed below were examples of Component IDs used in the Program.

PA – Playground Area (Land Use Category #1)

HA – High Access Area (Land Use Category #2)

GA – Maintained Grass Area (Land Use Category #3)

LA – Low Access Area (Land Use Category #4)

G – Flower/Vegetable Garden (Land Use Category #5)

OP – Opportunistic Sample

BA - Bare Area

SA - Source Area

Quality Control/Quality Assurance Codes:

D – Field Duplicate

Depth Intervals: Depth intervals were only applicable to soil sampling events.

0 to 2 inches bgs

2 to 6 inches bgs

6 to 12 inches bgs

12 to 18 inches bgs (flower/vegetable gardens only)

18 to 24 inches bgs (flower/vegetable gardens only)

An example sample identification would be: ~~be~~ S-S-0001-PA-2. This indicates that the soil sample was collected at the School with the Resident ID S-0001 (corresponding to a physical address and/or geocode) in a playground area at the 2 to 6-inch depth interval. The sample identification for a field duplicate collected at this location would be: S-S-0001-PA-D-2.

Sample identifiers were documented in field logbooks/data collection device and on the Chain-of-Custody forms, as required by the RMAP Field SOPs located as attachments to the QAPP. All analytical results were attached in facility specific tables ~~were~~ and attached as Attachment A at the end of this report.

Copies of the analytical laboratory results with the corresponding Chain-of-Custody were included in Appendix D.

2.5. INDIVIDUAL SCHOOL ANALYSIS SUMMARY

2.5. Sample locations are presented in the Figures Section of the report for each school for reference purposes

2.5.1. Data Summary - Emerson Elementary (S-0001)

A total of 13 composite soil samples were collected at this location on July 21 and 22, 2021, and reported in SDG 10571664. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.1.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.1.2. Field Duplicate Precision

There was one field duplicate sample pair collected during this sampling effort. The results for lead, arsenic and mercury exhibited relative percent differences (RPDs) within the QAPP duplicate criteria of a 35% RPD for solid samples. No sample results were qualified due to the field duplicate precision.

2.5.1.3. Accuracy

A total of 13 data points for lead were qualified “J” due to high laboratory matrix spike criteria. The associated PDS was within acceptance limits. This equates to 100% of lead sample results, batch, and/or instrument QC did not meet the QAPP-specified limits for lead. All lead data have been identified as Screening Level “S” due to this qualification. ~~However, the validator suggests these results may be used to support risk assessment/decision making.~~ The arsenic and mercury QC were within QAPP acceptance limits.

2.5.1.4. Method Sensitivity

All analyses were performed under valid calibration sequences, and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. ~~Laboratory reported positive results~~

~~between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.1.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality unless qualified during the data validation process.

2.5.1.6. Analytical Completeness

A total of 52 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.2. Data Summary - Hillcrest Elementary (S-0002)

A total of 77 composite soil samples were collected at this location on July 21, 22, and 23, 2021 and August 10, 2021, reported in SDGs 10571072, 10571694, 10571695, 10571698 and 10574191. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.2.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.2.2. Field Duplicate Precision

There were five field duplicate sample pair collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.2.3. Accuracy

No results were qualified based on accuracy. All laboratory QC results passed acceptance criteria or had no effect on qualification.

2.5.2.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the reported MDL and RL were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result was between the MDL and RL. These values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.2.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality.

2.5.2.6. Analytical Completeness

A total of 308 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.3. Data Summary - Kennedy Elementary (S-0003)

A total of 34 composite soil samples were collected at this location on July 19 and 20, 2021, reported in SDGs 10570542, 10571041, and 10571509. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.3.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.3.2. Field Duplicate Precision

There were two field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.3.3. Accuracy

A total of four data points for lead and arsenic were qualified “J” due to low laboratory matrix spike criteria. The associated PDS was within acceptance limits. This equates to 5.9 % of lead and arsenic sample results whose batch and/or instrument QC did not meet the QAPP-specified limits for lead and arsenic. The four lead and arsenic data points have been identified as Screening- Level “S” due to this qualification. ~~However, the validator suggests these results may be used to support risk assessment/decision-making.~~ The mercury QC were within QAPP acceptance limits. The remaining sample results for lead, arsenic and mercury were unqualified.

2.5.3.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result was between the MDL and RL. These values were considered enforcement data if no other qualifiers were required during validation.

2.5.3.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the QAPP, and QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality unless qualified during the data validation process.

2.5.3.6. Analytical Completeness

A total of 136 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.4. Data Summary - Margaret Leary Elementary (S-0004)

A total of 174 composite soil samples were collected at this location on July 21, 22, 23, 26, 27, and 28, 2021 and reported in SDGs 10571683, 10571684, 10571685, 10571686, 10571687, 10572108, 10572109, 10572110 and 10572111. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury – 147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.4.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.4.2. Field Duplicate Precision

There were nine field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic, and mercury exhibited relative RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples with one exception. Arsenic in one sample and its duplicate exceeded the duplicate criteria and the results were qualified as “J” estimated and assigned a “S” screening code.

2.5.4.3. Accuracy

A total of 60 data points for lead were qualified “J” due to low or high LMS criteria. The associated PDSs were within acceptance limits. This equates to 34.5% of lead sample results whose batch and/or instrument QC did not meet the QAPP-specified limits for lead. The 60 lead data points has been identified as Screening- Level “S” due to this qualification. ~~However, the validator suggests these results may be used to support risk assessment/decision making.~~ The mercury QC were within QAPP acceptance limits. The remaining lead, arsenic and mercury QC were within QAPP acceptance limits.

2.5.4.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified “J”. It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.4.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality unless qualified during the data validation process.

2.5.4.6. Analytical Completeness

A total of 696 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.5. Data Summary - West Elementary (S-0005)

A total of 144 composite soil samples were collected at this location on July 15, 16 and 20, 2021 reported in SDGs 10570536, 10570537, 10570538, 10570539, 10570540, 10570541, 10571064 and 10571525. Three arsenic reported results (2 primary samples, and 1 field duplicate sample) were greater than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP. Remedial Action was completed in 2021 in compliance with the Program.

2.5.5.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.5.2. Field Duplicate Precision

There were seven field duplicate sample pairs collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.5.3. Accuracy

A total of 68 data points for lead and arsenic were qualified “J”, due to high LMS recoveries. Twenty additional lead results were qualified as “J+” due to high PDS recoveries. One of the associated PDS results was within acceptance limits. This equates to ~~30.529~~ 5 % of lead and arsenic sample results whose batch and/or instrument QC did not meet the QAPP-specified limits for lead. The ~~868~~ lead and arsenic data points have been identified as Screening- Level “S” due to this qualification. ~~However, the validator suggests these results may be used to support risk assessment/decision making due to a potential increase in sensitivity (biased high result).~~ The mercury QC were within QAPP acceptance limits. The remaining sample results for lead, arsenic and mercury were unqualified.

2.5.5.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified “J”. It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the~~

~~reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.5.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and QAPP and~~ are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality ~~data- and data and~~ can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.5.6. Analytical Completeness

A total of 576 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.6. Data Summary - Whittier Elementary (S-0006)

A total of 173 composite soil samples were collected at this location on July 23, 26, 27 and 28, 2021, reported in SDGs 10571688, 10571689, 10572098, 10572099, 10572100, 10572105, 10572107, 10572112 and 10572113. One mercury sample was re-collected on ~~August 5, 2021, and August 5, 2021, and~~ reported in SDG 10572100 due to the original container breaking during shipping to the lab. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury – 147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.6.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.6.2. Field Duplicate Precision

There were nine field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate

criteria of a 35% RPD for solid samples with one exception. The mercury results exceeded the duplicate criteria (48% RPD between the two results) and the results were qualified as “J” and assigned a “S” screening code.

2.5.6.3. Accuracy

A total of 904 data points for lead and arsenic were qualified as “J” or “J+” due to low or high LMS recoveries. The associated PDSs were within acceptance limits. This equates to 27.226% of lead and arsenic sample results whose batch and/or instrument QC did not meet the QAPP-specified limits for lead. ~~Fifteen-Nineteen~~ additional mercury results were qualified as “J+” due to high PDS recoveries. The lead, arsenic, and mercury data points has been identified as Screening- Level “S” due to this qualification. ~~However, the validator suggests these results may be used to support risk assessment/decision-making due to a potential increase in sensitivity.~~ In addition, fifteen mercury results were qualified as “J-” due to sample receipt temperatures being above acceptance criteria. Samples were received at 6.7 degrees C. ~~However, the validator suggests these results may be used to support risk assessment/decision-making due to the small-variance in receipt temperature.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.6.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged “J”. It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.6.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and QAPP and~~ are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in

conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.6.6. Analytical Completeness

A total of 692 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.7. Data Summary - Webster Garfield (S-0007)

A total of 32 composite soil samples were collected at this location on July 26 and 27, 2021 and reported in SDGs 10572094 and 10572097. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.7.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.7.2. Field Duplicate Precision

There were two field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples with one exception. Mercury exceeded the duplicate criteria between two results and the results were qualified as “J” and assigned a “S” screening code.

2.5.7.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.7.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no

~~other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J". It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.7.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.7.6. Analytical Completeness

A total of 128 data points or 100% of the sample data met the stated data DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP

2.5.8. Data Summary - East Middle School (S-0008)

A total of 126 composite soil samples were collected at this location on August 3, 4 and 5, 2021 reported in SDGs 10573150, 10573151, 10573748, 10573751, 10573754, 10573757 and 10573759. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.8.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.8.2. Field Duplicate Precision

There were eight field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples with two exceptions, lead in one set of field duplicate samples and mercury in a second set of field duplicate samples exceeded the duplicate criteria between the two results and the results were qualified as “J” and assigned a “S” screening code.

2.5.8.3. Accuracy

A total of 20 data points for lead were qualified as “J” due to high serial dilution recoveries. A total of 20 data points for mercury were qualified as “J-” due to low LMS recoveries. Finally, 20 data points for arsenic were qualified as “J” due to high internal standard areas equates to 16.3% of lead, arsenic and mercury sample results whose batch and/or instrument QC did not meet the QAPP-specified limits for lead. The lead, arsenic and mercury data points has been identified as Screening- Level “S” due to this qualification. The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.8.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.8.5. Level A/B Field Assessment

Data that met the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that met only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in

conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.8.6. Analytical Completeness

A total of 504 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.9. Data Summary - Butte High School (S-0009)

A total of ~~73~~77 composite soil samples were collected at this location during the original investigation on August 2, 3, 4, and 10, 2021 reported in SDGs 10573125, 10573129, 10573145, 10573146 and 10574188. ~~Seven~~Eleven lead results (~~9~~6 primary samples, ~~2~~4 field duplicate sample) were reported above the lead action level of 1200 mg/Kg. Remedial Action has begun in 2021 and will be completed in 2022 in compliance with the Program. The remaining reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

Additional sampling was performed on November 11, 2021 and reported in SDG10587755 as part of a potential source contamination observed during the initial remedial action. A total of 4 composite samples were collected. All results (3 primary samples, 1 field duplicate sample) were above lead action level of 1200 mg/Kg. These sample results will be addressed during 2022.

2.5.9.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.9.2. Field Duplicate Precision

There were six field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD for solid samples with four exceptions for mercury which exceeded the duplicate criteria between the results and were qualified as “J” and assigned a “S” screening code.

2.5.9.3. Accuracy

A total of 44 data points for mercury were qualified as “J” due to high LMS recoveries and imprecision. A total of 40 data points for lead and arsenic were qualified as “J” due to high serial dilution imprecision. A total of 20 data points for arsenic were qualified as

“J” due to high LMS recoveries. The associated PDSs were within acceptance limits, except for the PDS in SDG 10587755. Four arsenic results were qualified as “J” due to high PDS recoveries. This equates to ~~48~~46.7 % of lead, arsenic and mercury sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead, arsenic and mercury data points have been identified as Screening- Level “S” due to these qualifications. ~~However, the validator suggests these results may be used to support risk assessment/decision making due to a potential increase in sensitivity.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.9.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.9.5. Level A/B Field Assessment

Data that met the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.9.6. Analytical Completeness

A total of 308 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.10. Data Summary - Former Hawthorne School (S-0010)

A total of 54 composite soil samples were collected at this location on August 9 and 10, 2021 and reported in SDGs 10574180, 10574181 and 10574182. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.10.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.10.2. Field Duplicate Precision

There were three field duplicate sample pairs collected during this sampling effort. All results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD.

2.5.10.3. Accuracy

A total of 19 data points for lead were qualified as “J” due to high LMS recoveries. The associated PDSs were within acceptance limits. This equates to 35% of lead, sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead data points has been identified as Screening- Level “S” due to these qualifications. ~~However, the validator suggests these results may be used to support risk assessment/decision making due to a potential increase in sensitivity.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.10.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. ~~Reported positive results between the MDL and the RL were considered estimated and have been qualified “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.10.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP~~, and ~~QAPP~~ and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.10.6. Analytical Completeness

A total of 216 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.11. *Data Summary - Butte Central Elementary (S-0011)*

A total of 11 composite soil samples were collected at this location on July 22 and 23, 2021 and reported in SDGs 10571703. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.11.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.11.2. Field Duplicate Precision

There were no field duplicates collected with this data set. Although only 11 samples were collected at Butte Central Elementary, Section 3.6.1 of the QAPP states that field duplicate samples will be collected at a frequency of 1 per 20 samples or once per sampling event (e.g., once per sampling day), whichever is more frequent. Data collected could not be evaluated for field duplicate precision.

2.5.11.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.11.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been qualified "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.11.5. Level A/B Field Assessment

Data that met the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.11.6. Analytical Completeness

A total of 44 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.12. Data Summary - Butte Central High School (S-0012)

A total of nine composite soil samples were collected at this location on July 22 and 23, 2021, and reported in SDGs 10571703. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg)

when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.12.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.12.2. Field Duplicate Precision

There was one field duplicate sample pair collected during this sampling effort. The results for lead, arsenic and mercury exhibited relative percent differences (RPDs) within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.12.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.12.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.

2.5.12.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the QAPP, and QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in

conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.12.6. Analytical Completeness

A total of 36 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.13. Data Summary - Headstart (Lincoln) (S-0013)

A total of six composite soil samples were collected at this location on July 20, 2021-2021, and reported in SDG 10571071. Three lead results were reported above the lead action level of 1200 mg/Kg. All remaining reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury – 147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP. Remedial Action was completed in 2021 in compliance with the Program.

2.5.13.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.13.2. Field Duplicate Precision

There were no field duplicates collected with this data set. Although only six samples were collected at Headstart Lincoln, Section 3.6.1 of the QAPP states that field duplicate samples will be collected at a frequency of 1 per 20 samples or once per sampling event (e.g., once per sampling day), whichever is more frequent. Data collected could not be evaluated for field duplicate precision.

2.5.13.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.13.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by

~~the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.13.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.13.6. Analytical Completeness

A total of 24 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.14. Data Summary – Headstart (Monroe) (S-0014)

A total of 28 composite soil samples were collected at this location on July 21, ~~2021~~ 2021, and reported in SDGs 10571701 and 10571704. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.14.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.14.2. Field Duplicate Precision

There was one field duplicate sample pair collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.14.3. Accuracy

A total of 40 data points for arsenic and mercury were qualified as “J” or “J-” due to low LMS recoveries. The associated PDSs were within acceptance limits for arsenic. This equates to 71% of arsenic and mercury sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The arsenic and mercury data points has been identified as Screening- Level “S” due to these qualifications. ~~However, the validator suggests these results may be used to support risk assessment/decision-making.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.14.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.14.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.14.6. Analytical Completeness

A total of 112 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.15. Data Summary - Silver Bow Montessori (S-0015)

A total of ~~13249~~ composite soil samples were collected at this location on July 19, 20, 21, and 23, 2021, reported in SDGs 10571065, 10571066, 10571067, 10571068, 10571069, 10571072, 10571522, ~~and~~ 10571701 and 1058794. A single lead result was reported above the lead action level of 1200 mg/Kg. The remaining reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

Additional sampling was performed on November 11, 2021, and reported in SDG 1087964. Thirteen composite soil samples were collected to attempt to delineate the single lead sample exceedance from the August sampling events. All additional samples collected were below the action limits for lead and arsenic.

2.5.15.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No arsenic and lead were observed in method blanks. A total of 20 mercury results were qualified as “J+” or “U” due to method blank contamination when compared to similar sample concentrations and assigned a “S” screening code. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.15.2. Field Duplicate Precision

There were eight field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD for solid samples with two exceptions. Arsenic in one field duplicate pair and lead and arsenic in a second duplicate pair were outside duplicate criteria. The difference between the results exceeded the duplicate criteria between the two results and the results were qualified as “J” estimated and assigned a “S” screening code.

2.5.15.3. Accuracy

A total of 33 data points for lead and 13 data points for arsenic were qualified as “J” estimated due to low LMS recoveries. The associated PDSs were within acceptance limits. This equates to 25% of lead sample results and 9.8 percent of arsenic results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead and arsenic data points has been identified as Screening- Level “S” due to these

qualifications. The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.15.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDL and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.15.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.15.6. Analytical Completeness

A total of 502 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.16. Data Summary - Highland View Christian School (S-0016)

A total of 30 composite soil samples were collected at this location on July 19 and 22, 2021 and reported in SDGs 10571529, 110571070 and 10571701. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200

mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.16.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.16.2. Field Duplicate Precision

There was one field duplicate sample pair collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.16.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.16.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.16.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in

conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.16.6. Analytical Completeness

A total of 120 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.17. Data Summary - - McGlone Heights (S-0017)

A total of 57 composite soil samples were collected at this location on August 4, 5, and 9, 2021, and reported in SDGs 10573762, 110573765 and 10573768. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.17.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. Arsenic and lead were not observed in associated method blanks. A total of 20 mercury results were qualified as “J+” or “U” due to method blank contamination when compared to similar sample concentrations and assigned a “S” screening code. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.17.2. Field Duplicate Precision

There were three field duplicate sample pairs collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.17.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.17.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the

~~MDL and the RL were considered estimated and have been flagged “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.17.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.17.6. Analytical Completeness

A total of 228 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.18. *Data Summary - Ramsay (S-0018)*

A total of 95 composite soil samples were collected at this location on July 12, 13 and 14, 2021 and reported in SDGs 10569670, 10569674, 10569904, 10569905, and 10569906. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.18.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.18.2. Field Duplicate Precision

There were five field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD for solid samples.

2.5.18.3. Accuracy

A total of 60 data points for mercury, lead and arsenic were qualified as “J” or “J-” due to low LMS recoveries. The associated PDSs were within acceptance limits. This equates to 21.1% of lead, arsenic and mercury sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead, arsenic and mercury data points has been identified as Screening- Level “S” due to these qualifications. The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.18.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. ~~Reported positive results between the MDL and the RL were considered estimated and have been flagged “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.18.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.18.6. Analytical Completeness

A total of 380 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.19. Data Summary – Aware Early Headstart (S-0019)

A total of 42 composite soil samples were collected at this location on August 9 and 10, 2021, reported in SDGs 10574183, 10574185, and 10574186. Eight lead results (all primary samples) were reported above the lead action level of 1200 mg/Kg. Eighteen arsenic results (16 primary samples and 2 field duplicate samples) were reported above the arsenic action level of 250 mg/Kg. Remedial Action has begun in 2021 and will continue in 2022 in compliance with the Program. The remaining reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.19.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.19.2. Field Duplicate Precision

There were three field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD for solid samples with two exceptions for mercury and two for arsenic which exceeded the duplicate criteria between the two results and the results were qualified as J estimated and assigned a “S” screening code.

2.5.19.3. Accuracy

A total of four data points for lead were qualified as “J” due to high LMS recoveries. The associated PDSs were within acceptance limits. This equates to 9.5% of lead sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead, ~~arsenic and mercury~~ data points has been identified as Screening- Level “S” due to these qualifications. ~~However, the validator suggests these results may be used to support risk assessment/decision making due to a potential increase in sensitivity.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.19.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged "J." It is appropriate to note that sample results qualified as estimated "J" by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.19.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.19.6. Analytical Completeness

A total of 168 data points or 100% of the sample data met the stated DQOs and data-use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.20. Data Summary - Small World Daycare (S-0020)

A total of 30 composite soil samples were collected at this location on August 9, 2021, reported in SDGs 10573770 and 10573776. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury – 147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.20.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.20.2. Field Duplicate Precision

There were two field duplicate sample pairs collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of a 35% RPD for solid samples.

2.5.20.3. Accuracy

The arsenic, lead and mercury QC were within QAPP acceptance limits and sample results were unqualified for accuracy.

2.5.20.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. ~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified "J" by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.20.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP, and~~ QAPP and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.20.6. Analytical Completeness

A total of 1208 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

2.5.21. Data Summary - Jeremy Bullock Soccer Fields (P-0001)

A total of 209 composite soil samples were collected at this location on July 28 and 29 and August 2 and 3, 2021, reported in SDGs 10572662, 10572663, 10572664, 10572667, 10572668, 10572669, 10572670, 10572671, 10573147, 10573148 and 10573149. All reported results were less than the BPSOU residential action levels (arsenic – 250 mg/kg, lead – 1,200 mg/kg, mercury –147 mg/kg) when compared to non-residential school-specific concentration for all work completed under the QAPP.

2.5.21.1. Field and Method Blank Results

Method blank results provide a measure of cleanliness of the sample preparation and analytical systems. No method blank contamination was noted that qualified analytical data. Field blanks were not collected per the QAPP since single-use sampling equipment was used throughout the sampling event.

2.5.21.2. Field Duplicate Precision

There were 11 field duplicate sample pairs were collected during this sampling effort. The results for lead, arsenic and mercury exhibited RPDs within the QAPP duplicate criteria of 35% RPD for solid samples with two exceptions for arsenic, which exceeded the duplicate criteria between the two results and the results were qualified as J estimated and assigned a “S” screening code.

2.5.21.3. Accuracy

A total of 140 data points for lead and arsenic were qualified as “J” due to high LMS recoveries. The associated PDSs were within acceptance limits. This equates to 33.4% of lead and arsenic sample results whose batch and/or instrument QC did not meet the QAPP-specified limits. The lead and arsenic data points have been identified as Screening- Level “S” due to these qualifications. ~~However, the validator suggests these results may be used to support risk assessment/decision making due to a potential increase in sensitivity.~~ The remaining sample results for lead, arsenic and mercury were unqualified for accuracy.

2.5.21.4. Method Sensitivity

All analyses were performed under valid calibration sequences and the MDLs and RLs were less than the action limits established for the project. The mercury results were reported on a dry-weight basis, adjusted for percent moisture.

~~Laboratory reported positive results between the MDL and the RL were considered estimated and were qualified “J” by the laboratory. These results were also qualified by the data validator for this reason. These values were considered enforcement data if no other qualifiers were required during validation. Reported positive results between the MDL and the RL were considered estimated and have been flagged “J.” It is appropriate to note that sample results qualified as estimated “J” by the laboratory because the reported result is between the MDL and RL, values were considered enforcement data if no other qualifiers were required during validation.~~

2.5.21.5. Level A/B Field Assessment

Data that meet the Level A and Level B criteria in the field documentation quality assessment as detailed in the ~~QAPP~~, and ~~QAPP~~ and are not qualified as estimated or rejected during the data validation process, were considered enforcement-quality data, and can be used for all Superfund purposes and activities. Data that meet only the Level A criteria and were not rejected during the data validation process can be considered screening-quality data in accordance with Section 6.3 of the QAPP.

Screening-quality data can be used only for certain activities, which include engineering studies and design. Data that do not meet the Level A and/or B criteria and/or were rejected during the data validation process were designated as unusable. The determination of enforcement-quality data and screening-quality data was made in conjunction with the data validation report and qualified based on the requirements of Section 6.3 of the QAPP.

Based on the Level A/B review, all data were considered Enforcement Quality with the exceptions noted in the above data validation sections.

2.5.21.6. Analytical Completeness

A total of 836 data points or 100% of the sample data met the stated DQOs and data use criteria outlined in the project QAPP. None of the data were rejected. This exceeded the goal of 90% analytical completeness stated in Section 2.7.2 of the QAPP.

3.0 DEVIATIONS FROM THE QAPP

The analytical laboratories utilized for sample drying and sieving, sample preparation, and analyses were audited by Environmental Standards, Inc. on behalf of the Atlantic Richfield Company. During laboratory audit conducted on July 28, 2021, the Environmental Standards, Inc. Auditor noted that samples for mercury analysis did not have a laboratory duplicate sample (LDS) prepared and analyzed in the batch. The following SDGs were affected: 10569670, 10569674, 10569904, 10569905, 10569906, 10570536, 10570537, 10570538, 10570539, 10570540, 10570541, 10570542, 10571041, 10571064, 10571065, 10571066, 10571067, 10571068, 10571069, 10571070, 10571071, 10571072, 10571509, 10571522, 10571525, and 10571529. The laboratory reconciled this data requirement for sample batches prepared after July 28, 2021, and incorporated LDS for mercury analysis. As a duplicate LMS had been prepared and analyzed with the preparation batch, precision of laboratory analytical techniques could be evaluated for these samples. Therefore, there is no impact to the data quality, and qualification was not warranted.

General Deviations from all Data Validation Reports

Due to a Laboratory Information Management System (LIMS) limitation, the results reported for arsenic and lead were reported on a “wet-weight basis” in the data package. As described in the Case Narratives (see Laboratory Case Narrative and Chain-Of-Custody Record [Section 5] of each validation report), the samples for arsenic and lead were dried and sieved prior to preparation and analysis; therefore, the distinction of being reported on a “wet-weight basis” for these results does not indicate that the percent moisture associated with the sample can be applied to the arsenic and lead results. Qualification of data due to this issue was not warranted.

The qualified EDD reports the arsenic and lead results with a basis of “WET” based upon the reporting requirements of BP America, Inc. (BP) and DDMS, Inc. (DDMS). The basis of “WET” is misleading as wetness is the ability of a liquid to adhere to the surface of a solid and the samples for arsenic and lead were dried and sieved prior to preparation and analysis as described in the Case Narrative (see Section 5) of each validation report. The distinction of “WET” does not indicate that the percent moisture associated with the sample can be applied to the arsenic and lead results. Qualification of data due to this issue was not warranted.

Individual Deviations Specific to SDGs

- It was noted on the Sample Condition Upon Receipt form that the field team had not placed custody seals on the sample coolers for SDG 10569674 (S-0008) prior to shipment to the laboratory. According to the QAPP, Section 3.3, coolers are to be shipped with custody seals. Qualification of data due to this issue is not warranted.

- In SDG 10570542 (S-0003) The data validator noted an additional signature for Pace personnel on the Chain-of-Custody (COC) Record, in the Relinquished By field. Upon inquiry, it was determined that the sample cooler received at Pace of Green Bay, Wisconsin (Pace Green Bay), contained the mercury samples which should have been shipped to Pace of Minneapolis, Minnesota (Pace Minneapolis). Pace Green Bay did not complete the Accepted By field on the COC Record to acknowledge receipt of the samples, as required by Section 2.9.4 of the QAPP. Pace Green Bay recorded the cooler temperature, added additional ice to the cooler, and shipped the mercury samples to Pace Minneapolis (see Project Correspondence [Section 6]). Qualification of data due to this issue was not warranted.
- Upon sample receipt at the laboratory, the sample receiving personnel at Pace of Green Bay, Wisconsin, advised that one cooler containing samples from Sample Delivery Group (SDG) 10571067 (S-0015) had been damaged during transit to the laboratory and arrived without custody seals or tape. All samples arrived were accounted for, intact, and with no sign of tampering (see Project Correspondence (Section 6)); therefore, qualification of data due to this issue was not warranted.
- In SDG 10571525 (S-0005) The data validator noted an additional signature for Pace personnel on the Chain-of-Custody (COC) Record, in the Relinquished By field. Upon inquiry, it was determined that the sample cooler received at Pace of Green Bay, Wisconsin (Pace Green Bay), contained the mercury samples which should have been shipped to Pace of Minneapolis, Minnesota (Pace Minneapolis). Pace Green Bay did not complete the Accepted By field on the COC Record to acknowledge receipt of the samples, as required by Section 2.9.4 of the QAPP. Pace Green Bay recorded the cooler temperature, added additional ice to the cooler, and shipped the mercury samples to Pace Minneapolis (see Project Correspondence [Section 6]). Qualification of data due to this issue was not warranted.
- In SDG 10572113 (S-0006) Pace Minneapolis sample receiving personnel noted the mercury samples were received at the laboratory at a temperature of 6.7°C. According to the RMAP QAPP Section 3.2.5, samples are to be maintained at a temperature less than or equal to 6°C. Qualification of data due to this issue is addressed in the Data Validation Checklist for Metals Sample Analysis (Section 2).
- In SDG 10569670 (S-0018) It was noted on the Sample Condition Upon Receipt form that the field team had not placed custody seals on the sample coolers prior to shipment to the laboratory. According to the QAPP, Section 3.3, coolers are to be shipped with custody seals. Qualification of data due to this issue is not warranted.

4.0 CONCLUSIONS

This DSR summarizes the results for soil samples collected during 2021 in accordance with the RMAP sampling effort for 2021. This DSR summarized the aspects of the data that warranted qualification and was presented on an individual school. Data contained in the report was gathered following objectives and procedures documented in the approved 2021 QAPP. The data presented in the DSR were found to be compliant with the DQOs presented in the QAPP with limited qualification of data. No sample results were rejected.

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Figures

**Figure 1 Residential Metals Abatement Program (RMAP) Site Map
Figure 2 through 5 School Location Maps**

**Appendix A
Tables**

Table 1 Concentrations Exceeding Residential Action Limits

RMAP School Location	Laboratory Identification	Sample Identification	Contaminant of Concern	Concentration (mg/Kg)
West Elementary	10570537005	S-S-0005-OP1-1	Arsenic	405
	10570537007	S-S-0005-OP1-2	Arsenic	256
	10570537011	S-S-0005-OP1-D-1	Arsenic	359
Butte High	10573125015	S-S-0009-GA3-2	Lead	1520
	10573125017	S-S-0009-GA3-3	Lead	5220
	10573125025	S-S-0009-GA5-1	Lead	1840
	10573125027	S-S-0009-GA5-2	Lead	1790
	10573125029	S-S-0009-GA5-3	Lead	2370
	10573129001	S-S-0009-GA7-2	Lead	2090
	10573129035	S-S-0009-HA2-D-3	Lead	1280
	10587755005	S-S-0009-GA2-SA1-1	Lead	2690
	10587755006	S-S-0009-GA2-SA1-D-1	Lead	3100
	10587755007	S-S-0009-GA2-SA1-2	Lead	2610
	10587755008	S-S-0009-GA2-SA1-3	Lead	2820
	Headstart (Lincoln)	10571071005	S-S-0013-PA1-1	Lead
10571071007		S-S-0013-PA1-2	Lead	1340
10571071009		S-S-0013-PA1-3	Lead	1340
Silver Bow Montessori	10571701005	S-S-0015-GA5-3	Lead	1350
Aware Head Start	10574186003	S-S-0019-GA2-2	Arsenic	506
	10574186007	S-S-0019-GA2-3	Arsenic	568
	10574186005	S-S-0019-GA2-D-3	Arsenic	317
	10574183011	S-S-0019-GA3-2	Arsenic	289
	10574183013	S-S-0019-GA3-3	Lead	1490
	10574183013	S-S-0019-GA3-3	Arsenic	386
	10574185001	S-S-0019-HA1-1	Lead	1500
	10574185003	S-S-0019-HA1-2	Arsenic	436
	10574185007	S-S-0019-HA1-3	Arsenic	400
	10574185005	S-S-0019-HA1-D-2	Arsenic	321
	10574185013	S-S-0019-HA2-3	Lead	1400
	10574185015	S-S-0019-HA3-1	Lead	1320
	10574185015	S-S-0019-HA3-1	Arsenic	340

**2021 RMAP NON-RESIDENTIAL PARCELS DATA SUMMARY REPORT
SILVER BOW CREEK/BUTTE AREA NPL SITE BPSOU**

April 2022

RMAP School Location	Laboratory Identification	Sample Identification	Contaminant of Concern	Concentration (mg/Kg)
	10574185017	S-S-0019-HA3-2	Arsenic	681
	10574185019	S-S-0019-HA3-3	Arsenic	413
	10574185023	S-S-0019-HA4-2	Arsenic	290
	10574185025	S-S-0019-HA4-3	Lead	1220
	10574185025	S-S-0019-HA4-3	Arsenic	727
	10574185027	S-S-0019-HA5-1	Arsenic	264
	10574185029	S-S-0019-HA5-2	Arsenic	283
	10574183023	S-S-0019-PA2-2	Arsenic	254
	10574183035	S-S-0019-PA4-2	Lead	1410
	10574183035	S-S-0019-PA4-2	Arsenic	258
	10574183037	S-S-0019-PA4-3	Lead	2230
	10574183037	S-S-0019-PA4-3	Arsenic	321
	10574185037	S-S-0019-PA6-3	Lead	1940