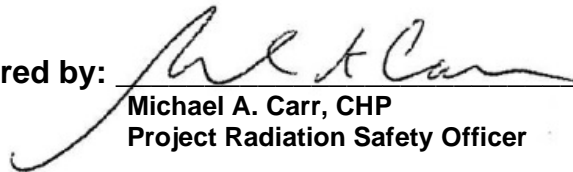


SSSB
Survey Results
MARSAME Survey Package
SSSB-002
Tank 9 Centerline

Revision 0

February 23, 2022

Prepared by:



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Record of Revisions

Revision No.	Description of Revision	Date
0	Survey Results – MARSAME Survey Package SSSB-002	February 23, 2022

1.0 Objective

The objective of this survey data package is to justify the unrestricted release of the Surface Ship Support Barge (SSSB) Ballast Tank 9 Centerline (9CL) with no additional controls.

2.0 Background

Tank 9CL is part of the SSSB ballast system, located between Frames 47 and 50 of the vessel. Water for filling the ballast tanks was normally taken from a dockside supply of fresh water via the port or starboard saltwater circulating system shore connection. Tank 9CL is accessed by a single 48-inch-diameter hatch located on the aft weather deck. The No. 9 tanks are separated from the Wet Pit by the No. 8 tanks and are physically isolated from the contaminated drain collecting systems. Diagrams showing the location of Tank 9CL and its access point are provided on Figure 2-1 through Figure 2-3.

Tank 9CL is a permit-required confined space. The tank is approximately 40.5 feet deep by 43 feet wide by 36.5 feet long with a series of vertical ladders and small platforms for entry into the tank. There are several baffles of various sizes and height/depth throughout the tank to minimize the movement of ballast water within the tank. In order to provide full access throughout the sections of the tank, small areas of the larger baffling were cut and removed.

The tank has a cutout or isolation valve located in the tank with a reach rod for operation of the valve from the upper deck. The handwheel for operating the cutout valve is located on the starboard weather deck aft of Frame 50.

The access ladder, platforms, and the temporary ventilation trunk for Tank 9CL are shown in Photograph 2-1. The internal support structure within the tank is shown in Photograph 2-2.

Figure 2-1
Location of Tank 9CL

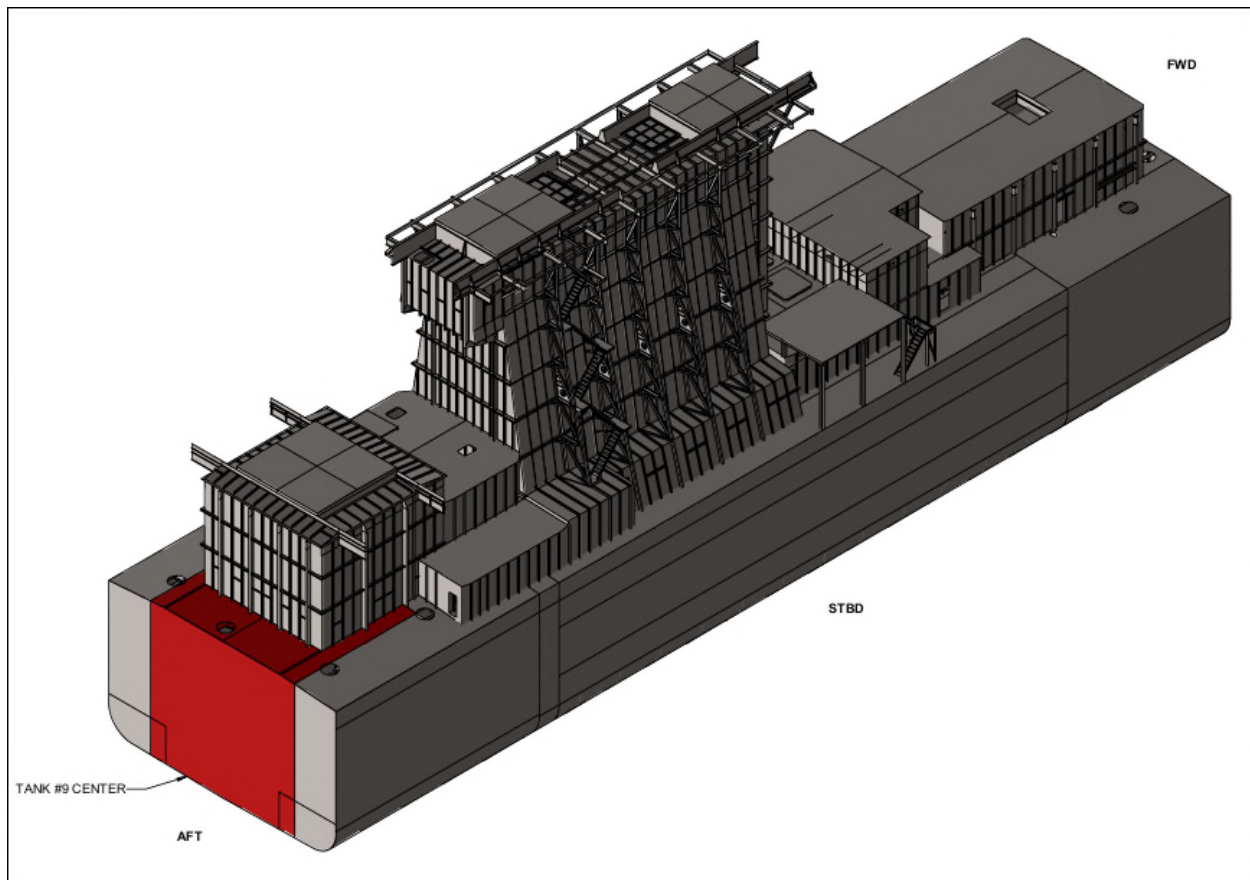


Figure 2-2
Location of Tank 9CL

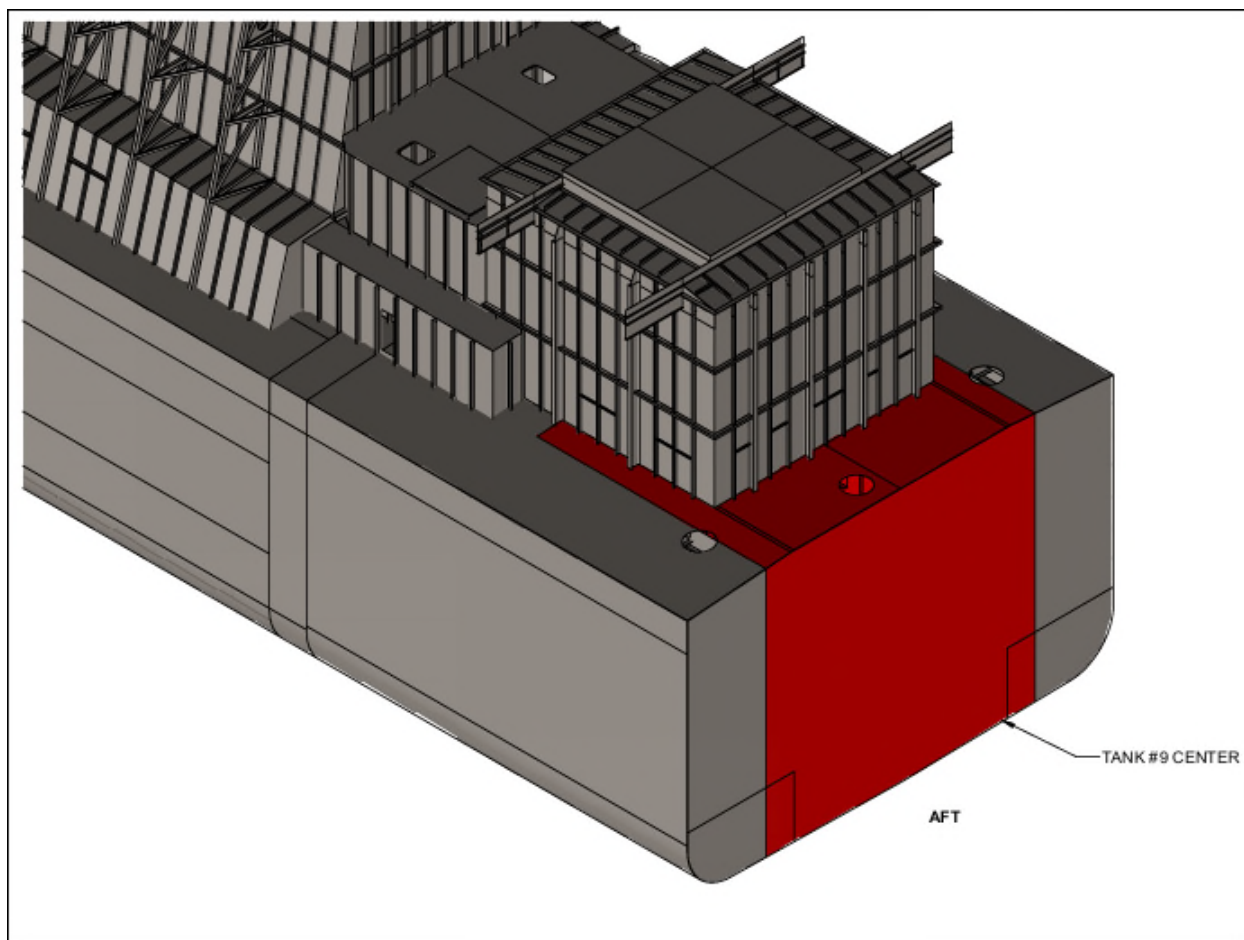
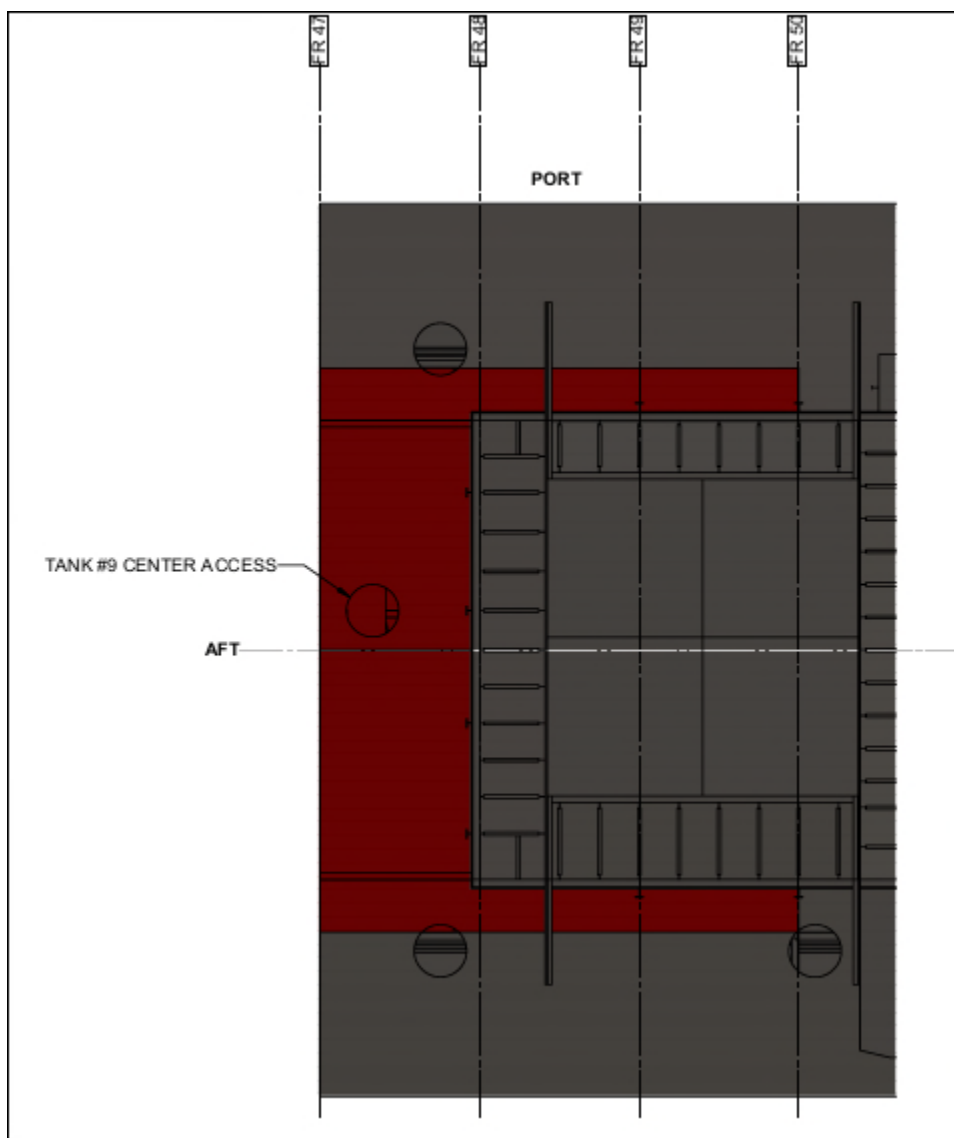


Figure 2-3
Tank 9CL Access



Photograph 2-1
Tank 9CL Access Ladder, Platforms, and Ventilation Trunk



Photograph 2-2
Tank 9CL Internal Support Structure and Lower Reference Grid



3.0 Initial Assessment

3.1 Categorization

Based on prior assessments and the historical records, Tank 9CL is considered an impacted area. This tank was decontaminated during vessel refurbishment in 1983/1984 and released by Naval Sea Systems Command (NAVSEA) for unrestricted use and has not been used to store radioactive liquids subsequent to refurbishment. According to the Facility System Status Report (FSSR) (NAVSEA, 2015), the status of Tank 9CL was listed as “No radiological controls” and it stated that the tank was used to store phosphate water during the third USS Enterprise (CVN-65) refueling. The phosphate sludge was contaminated and the tank was decontaminated and later used to store ballast water. However, since this tank was previously in direct contact with radioactive materials and had not been released to current regulatory standards, it is considered impacted.

3.2 Classification

Considering the tank was previously decontaminated and refurbished, the potential for residual radioactivity at detectable levels is low as defined in the SSSB project Materials Categorization, Survey, and Release Plan (MCSR) (Aptim Federal Services, LLC [APTIM], 2021a). Tank 9CL is classified as a Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME) (U.S. Nuclear Regulatory Commission [NRC], 2009) Class 2 survey unit.

3.3 Disposition Options

The disposition option being considered for the Tank 9CL materials and equipment (M&E) is release for unrestricted use.

4.0 Decision Inputs

The decision inputs for the surveys included the radiological contaminants of potential concern (RCOPC), the parameters of interest (total direct and removable activity and sample analyses), and the action or decision levels as specified within the following sections. This allowed the decision rules to be evaluated and the proper determinations made for the unrestricted release of the tank with no additional controls.

4.1 Null Hypothesis

The null hypothesis for the surveys was based on MARSAME Scenario A. Scenario “A” states that the contamination levels within the M&E survey unit are equal to or exceed the action levels

(AL). If the activity levels on the M&E are determined to be equal to or exceed an AL, the null hypothesis is accepted and the M&E may not be free released. If all measurements are below the ALs, then the null hypothesis is rejected and the M&E may be released with no radiological controls.

4.2 Radionuclides of Potential Concern

The RCOPCs were listed in Table 4-1 of the Decommissioning Work Plan (APTIM, 2021b) and have since been revised based on characterization surveys and sampling (APTIM, 2021c) as summarized in Table 4-1 below.

Table 4-1
Radionuclides of Potential Concern

Radionuclide	Radiation Emitted	Field Detectability
Tritium (H-3)	Low-energy beta	HTD
Cobalt-60 (Co-60)	Beta-Gamma	Yes
Nickel-63 (Ni-63)	Low-energy beta	HTD

The primary detectable RCOPCs is Co-60 which is an activation/corrosion product. In addition, the hard-to-detect (HTD) radionuclides of concern were evaluated using the results of removable contamination smears as analyzed in a liquid scintillation counter.

4.3 Action Levels

For the SSSB project, the ALs are based on no detectable activity per NRC I&E Notice 81-07 (NRC, 1981) expressed as:

- No detectable total surface beta activity during scans or static measurements with a minimum detectable concentration (MDC) not greater than 5,000 disintegrations per minute (dpm)/100 square centimeters (cm²) as measured by a thin-window (0.8 milligrams per square centimeter [mg/cm²]) gas flow proportional counter or detector of approximate equivalent sensitivity.
- Removable contamination less than 1,000 dpm/100 cm².
- No detectable Co-60 activity in paint samples with a minimum detectable activity (MDA) less than or equal to 3.0 picocuries per gram (pCi/g).

4.4 Decision Rules

The specific decision rules are as follows:

- If any surface beta activity is discernable above background during scans or static measurements with an MDC not greater than 5,000 dpm/100 cm² as measured by a thin-window (0.8 mg/cm²) gas flow proportional counter or detector of approximate equivalent sensitivity, the null hypothesis cannot be rejected and the M&E may not be released for unrestricted use.
- If any removable contamination is detected above 1,000 dpm/100 cm², the null hypothesis cannot be rejected and the M&E may not be released for unrestricted use.
- If Co-60 activity is detected in paint samples with an MDA less than or equal to 3.0 pCi/g, then the null hypothesis cannot be rejected and the M&E may not be released for unrestricted use.

If the decision rules are all rejected (i.e., all measurements and surface scans are below the applicable ALs), the M&E may be released for unrestricted use. If any decision rule is not rejected, the M&E will not be released for unrestricted use.

5.0 Survey Design

5.1 Survey Unit

Tank 9CL is an individual open tank with an area of approximately 2,300 square meters. Part of the ceiling of the tank forms the floor of the Heavy Component Shop (HCS). Considering the HCS will not be surveyed for release, the majority of the tank ceiling comprising the HCS floor was excluded from the survey. As a result, the remaining ceiling, floor, walls, and internal structure of Tank 9CL were considered a single Class 2 survey unit.

5.2 Survey Boundaries

The survey unit was limited to the interior surfaces of the tank and its contents. The vessel exterior is considered non-impacted and was not included in the survey.

5.3 Design

The survey included the following requirements in accordance with the MCSRP and MARSAME Survey Package SSSB-002 (APTIM, 2021d):

- At least 25% cumulative beta scan of accessible structural surfaces (tank interior walls, deck, baffles, and overhead).

- Minimum of 15 direct static measurements for beta activity taken on a systematic grid with a random starting point on the deck, walls, overheads, and internal walls.
- Smears for gross beta analysis at each direct static measurement location.
- Smears for H-3 and Ni-63 at each direct static measurement location.
- Volumetric paint samples for isotopic analysis at each direct static location.
- Additional measurements as required by the Radiological Control Supervisor (RCS) and approved by the Project Radiation Safety Officer (PRSO).

All measurement locations were marked and documented.

5.4 Survey Map

A survey grid consisting of one-square-meter grid squares was established over the tank shell starting at an established reference point. There were an estimated 863 square meters for the tank shell (floor, walls, and ceiling) excluding the portion of the ceiling which constitutes the HCS floor and the internal structure such as the forward/aft stiffeners, bulkhead stiffeners, baffles, and platforms. A systematic grid with a random starting location was generated using a triangular grid to locate the 16 direct measurement and sampling locations. The tank structures, including the stiffeners, baffles and platforms, were inventoried, numbered, and 25% randomly selected for survey.

A copy of the Tank 9CL survey map showing the one-square-meter grid overlay, grids scanned, and the systematic measurement/sample locations as well as the internal structures surveyed is included as Attachment 1.

6.0 Survey Results

The following sections summarize the data from the surveys performed within Tank 9CL. A data tracking/cover sheet was used to provide survey instructions and to ensure the required survey data were collected. A copy of the MARSAME survey data tracking/cover sheet is provided as Attachment 2.

6.1 Background Assessment

Background measurements were collected prior to and during the performance of the surveys throughout the tank using a background plate covering the detector to measure the ambient

background. The average background as measured within the tank was applied during all activity calculations.

Based on the background measurements, the detection sensitivities were validated to ensure they met the data quality objectives and the measured detection sensitivities are provided as part of the survey documentation.

6.2 Beta Surface Scans

Beta surface scans were performed using a Ludlum Model 2360 with Model 43-93 scintillation detector while listening to the instrument's audible response to identify any elevated measurement areas using a scan speed not exceeding two detector widths per second. The scan data were recorded by documenting the maximum observed scan result for each square meter surveyed. A total of 256 randomly selected grids out of 863 grids on the tank shell (i.e., floor, walls, and ceiling) were scanned for an approximately 29.7% scan coverage. Additionally, a minimum of 25% of the forward/aft stiffeners, bulkhead stiffeners (forward and aft), and the baffle and platform surfaces were randomly selected and scanned. A total of 17 out of 62 stiffeners (27.4%), two of six baffle sides (33%), and two of eight platform surfaces (25%) were surveyed. This was performed to ensure the 25% scan requirement was met.

Each beta scan measurement was converted to surface activity using the average tank background and instrument efficiencies using the following equation:

$$\text{Surface Activity} = \frac{(R_S - R_B)}{\left(\varepsilon_i \varepsilon_S \frac{A}{100}\right)}$$

Where:

R_S	=	Maximum observed count rate (counts per minute [cpm]) per grid or component
R_B	=	Average ambient background count rate (cpm) in the tank
ε_i	=	Instrument efficiency (2π)
ε_S	=	Surface efficiency (25%)
A	=	Detector surface area (cm ²)

All scan measurements were less than the MDCs, which ranged from approximately 3,340 to 4,566 dpm/100 cm², using a maximum scan speed of two detector widths per second, which was less than the 5,000 dpm/100 cm² requirement.

The beta scan results are summarized in Attachment 3.

6.3 Direct Beta Measurements

Each measurement location consisted of a one-minute scalar count for total surface beta activity using the Ludlum Model 2360 with a Model 43-93 scintillation detector. A total of 16 systematic grid measurements for direct beta surface activity were performed. The approximate direct beta measurement locations were recorded as part of the survey documentation.

The direct measurements for total beta surface activity were recorded in cpm and converted to surface activity using the same equation provided in Section 6.2 above. All direct beta measurements were less than the critical value (see Section 7.4.1) based on the average measured background. This indicated that all 16 measurements were indistinguishable from background with MDCs ranging from approximately 649 to 777 dpm/100 cm².

The direct beta measurements are summarized in Attachment 4.

6.4 Removable Beta Surface Activity

Smears for removable beta surface activity were collected at each of the 16 direct measurement locations and analyzed on-site. The removable beta surface activity results were recorded in cpm and converted to surface activity using the following equation:

$$Surface\ Activity = \frac{(R_S - R_B)}{\left(\varepsilon_i \frac{A}{100}\right)}$$

Where:	R _S	=	Sample count rate (cpm)
	R _B	=	Ambient background count rate (cpm)
	ε _i	=	Instrument efficiency (4π)
	A	=	Size of area smeared (~100 cm ²)

All smear results for removable beta surface activity were less than the MDAs, which ranged from approximately 129 to 133 dpm/100 cm².

The removable beta surface activity measurements are summarized in Attachment 5.

6.5 Removable Low-Energy Beta Surface Activity

Smears for removable low-energy beta (LEB) surface activity were collected at each of the 16 direct measurement locations for both H-3 and Ni-63 and shipped to the off-site laboratory for analysis. All measurements were well below the AL of 1,000 dpm/100 cm².

The LEB smear results are summarized in Attachment 6 and copies of the off-site laboratory analytical reports are provided in Attachment 7.

6.6 Paint Samples

A paint sample was collected from a 12-inch by 12-inch area at each of the 16 direct measurement locations and shipped for off-site laboratory analysis for the RCOPCs as defined in the updated RCOPC list. All sample results were less than the MDAs, specifically for Co-60 with an MDA not exceeding 3.0 pCi/g. No detectable activity was identified in any of the 16 paint samples, including Co-60, Ni-63, H-3, and carbon-14.

The paint sample results are summarized in Attachment 8 and a copy of the off-site laboratory analytical report is provided as Attachment 9.

6.7 Supplemental Data

No supplemental data were collected during the surveys because no elevated readings were identified during surface scans.

7.0 Quality Assurance

7.1 Daily Instrument Source Checks

Upon instrument receipt, each instrument was inspected and set up to establish baseline instrument response criteria and control charts in accordance with standard operating procedure. All instruments and detectors were subsequently inspected, verified to have current calibration, and source checked daily when in use to verify proper operation.

7.2 Decision Errors

- Type I: During scanning, the consequence of making a Type I decision error is clearing the M&E for re-use or recycle when the activity levels exceed the release criteria. A Type I decision error rate of 5% was selected for the scanning survey.
- Type II: The consequence of this decision error may include the need to perform an investigation to determine the reason for the elevated reading, or the added time and

expense of decontamination and resurvey activities. For this reason, a Type II decision error rate of 5% was selected for the scanning.

7.3 Measurement Uncertainty

As specified in the MCSRP, all measurements include uncertainty and must be considered when the measurement results are used in the decision-making process. However, considering the ALs as established for the SSSB were no detectable activity for direct beta surface activity and no detectable activity greater than 1,000 dpm/100 cm² for removable beta, the measurement uncertainty was not determined or evaluated with the exception of the values as reported by the off-site laboratory and as summarized in Attachments 6 through 9.

7.4 Detection Capability

The measurement detection capability was assessed by two measurement values: the critical value and the MDC. The critical value is the minimum measured value for a specified probability that a positive (non-zero) amount of activity is actually present (i.e., distinguishable from background). The MDC, on the other hand, is the minimum detectable activity or concentration for a measurement that can be measured with confidence.

7.4.1 Fixed-Point Measurements

For static fixed-point measurements, the critical value is determined using Equation 1 in Table 7.5 of MARSAME:

$$S_c = Z_{1-\alpha} \sqrt{N_B \frac{t_s}{t_B} \left(1 + \frac{t_s}{t_B}\right)}$$

Where:	S_c	=	critical value, counts
	N_B	=	average background counts
	t_B	=	background count time (10 minutes)
	t_s	=	sample count time (one minute)
	$Z_{1-\alpha}$	=	Type 1 decision error (set as 1.645)

A net count for a fixed-point measurement that exceeds the S_c value will indicate the presence of residual radioactivity. The MDC can then be determined as follows:

$$MDC = \frac{S_c + \frac{Z_{1-\beta}^2}{2} + Z_{1-\beta} \sqrt{\frac{Z_{1-\beta}^2}{4} + S_c + N_B \frac{t_s}{t_B} \left(1 + \frac{t_s}{t_B}\right)}}{t_s \varepsilon_i \varepsilon_s \frac{A}{100 \text{ cm}^2}}$$

Where:	S_c	=	critical value, counts
	N_B	=	average background counts
	t_B	=	background count time
	t_s	=	sample count time
	$Z_{1-\beta}$	=	Type 2 decision error (set as 1.645)
	ε_i	=	instrument 2π efficiency
	ε_s	=	surface efficiency
	A	=	detector area

Based on the instrumentation utilized (Ludlum Model 2360 with Model 43-93 scintillation probe) and the counting parameters that were established for the surveys, the maximum MDC for the fixed beta measurements was 777 dpm/100 cm². This was based on the established sample count time of one minute, ambient background count time of 10 minutes, average ambient background count rate of 74.2 cpm, instrument efficiency (2π) of 16.7%, surface efficiency of 25%, and a detector area of 100 cm².

7.4.2 Scan Sensitivity

The minimum detectable count rate (MDCR) was determined for the Ludlum Model 43-93 detector using Equation 6-9 in MARSSIM:

$$MDCR = d' \sqrt{b_i} \left(\frac{60}{i} \right)$$

Where:	MDCR	=	minimum detectable count rate in cpm
	b_i	=	average number of background counts in the observation interval
	i	=	observation interval (0.5 seconds for a maximum scan speed of two detector widths per second)
	d'	=	detectability index from Table 6.1 of NUREG-1507; a value of 1.38 was selected, which represents a true-positive detection rate of 95% and a false-positive detection rate of 60%.

The scan MDC was determined using Equation 6-10 in MARSSIM:

$$\text{Scan MDC} = \frac{\text{MDCR}}{\sqrt{p} \varepsilon_i \varepsilon_s \frac{\text{probe area}}{100 \text{ cm}^2}}$$

Where: MDCR = minimum detectable count rate (cpm)
p = efficiency of a less-than-ideal surveyor, range of 0.5 to 0.75 from NUREG-1507; a value of 0.5 was chosen as a conservative value
A = detector area (100 cm² for 43-93 detector)
 ε_i = instrument 2π efficiency
 ε_s = surface efficiency

Based on the instrumentation utilized (Ludlum Model 2360 with a Model 43-93 scintillation detector) and the counting parameters that were established for the survey(s), the maximum calculated beta scan sensitivity was approximately 4,566 dpm/100 cm². This was based on an established scan speed not to exceed two detector widths per second (~5.4 inches/second), average ambient background count rate of 82.7 cpm, instrument efficiency (2π) of 17%, and a surface efficiency of 25%.

7.5 Duplicate / Replicate Measurements

Duplicate measurements and smear samples were collected at a minimum rate of 5% (i.e., one for every 20 measurements or samples). This included surface scans and measurements for total direct beta surface activity, removable LEB activity, and removable beta activity.

7.5.1 Beta Surface Scans

A total of 71 additional one-square-meter grids were scanned as presented in Attachment 3. Considering the total surface area of the tank is approximately 2,300 square meters (see Section 5.1) and an estimated scan coverage was 25% (~575 square meters), this constituted an approximate 12.3% survey for quality control (QC) for beta surface scans. The QC scan measurement results are provided as part of Attachment 3 and were all less than the MDAs, consistent with the initial beta surface scan results.

7.5.2 Direct Beta Measurements

One additional direct beta measurement was collected for QC purposes, as presented in Attachment 4. This resulted in an approximate 6.3% QC for direct beta measurements (i.e., one

for 16 total measurements). The QC measurement was less than the MDA and consistent with the systematic measurement results.

7.5.3 Removable Beta Surface Activity

One additional smear for removable beta surface activity was collected for QC purposes, as presented in Attachment 5. This resulted in an approximate 6.3% QC for removable beta activity (i.e., one for 16 total smears). The QC measurement was less than the MDA and consistent with the systematic smear results.

7.5.4 Removable Low-Energy Beta Surface Activity

One additional smear each for removable LEB surface activity (H-3 and Ni-63) was collected for QC purposes, as presented in Attachment 6. This resulted in an approximate 6.3% QC for LEB surface activity (i.e., one for 16 smears each for H-3 and Ni-63). The QC measurement results were less than the MDAs and consistent with the systematic smear results.

In addition to the QC smears collected during the survey, the off-site laboratory performed a laboratory duplicate analysis on three of the smears. The laboratory duplicate results were all less than MDAs and consistent with the systematic smear results.

7.5.5 Paint Samples

No duplicate paint samples were collected during the survey; however, the off-site laboratory performed a laboratory duplicate analysis on one of the samples. This constituted an approximate 6.3% QC (i.e., one for 16 total samples). The laboratory duplicate analysis results are presented in Attachment 8 and were all less than the MDAs.

8.0 Data Evaluation

The survey and sampling data were determined to meet the minimum survey design requirements as stipulated in MARSAME Survey Package SSSB-002, Tank 9CL. All survey data were then evaluated against the applicable ALs and decision rules as specified in Section 4.4. These results are summarized as follows based on the survey results presented in Section 6.0:

- All beta surface scan results were less than the scan MDC with the MDC not to exceed 5,000 dpm/100 cm².

- All direct beta measurements were below the MDC and the critical value (Sc) with the MDC not to exceed 5,000 dpm/100 cm².
- All gross beta and LEB smear results were less than 1,000 dpm/100 cm².
- All paint sample results were less than the MDA with a Co-60 MDA less than 3.0 pCi/g.

9.0 Decision/Conclusion

Based upon the survey results and the data evaluation (i.e., all measurements were less than the specified ALs), the null hypothesis has been rejected and Tank 9CL may be released for unrestricted release with no additional radiological controls.

10.0 References

Aptim Federal Services LLC (APTIM), 2021a, *Materials Categorization, Survey, and Release Plan, Surface Ship Support Barge Dismantlement and Disposal*, Rev. 0, March (or most recent revision).

Aptim Federal Services LLC (APTIM), 2021b, *Decommissioning Work Plan, Surface Ship Support Barge Dismantlement and Disposal*, Rev. 1, April (or most recent revision).

Aptim Federal Services LLC (APTIM), 2021c, Surface Ship Support Barge Contract Number N00024-20-C-4139; Revised Radiological Constituents of Potential Concern (RCOPCs); Notification of Initiating Waste Shipment, APTIM-501513-0018, September 22, 2021.

Aptim Federal Services LLC (APTIM), 2021d, *MARSAME Survey Package SSSB-002, Tank 9CL, Surface Ship Support Barge Dismantlement and Disposal*, Rev. 1, November (or most recent revision).

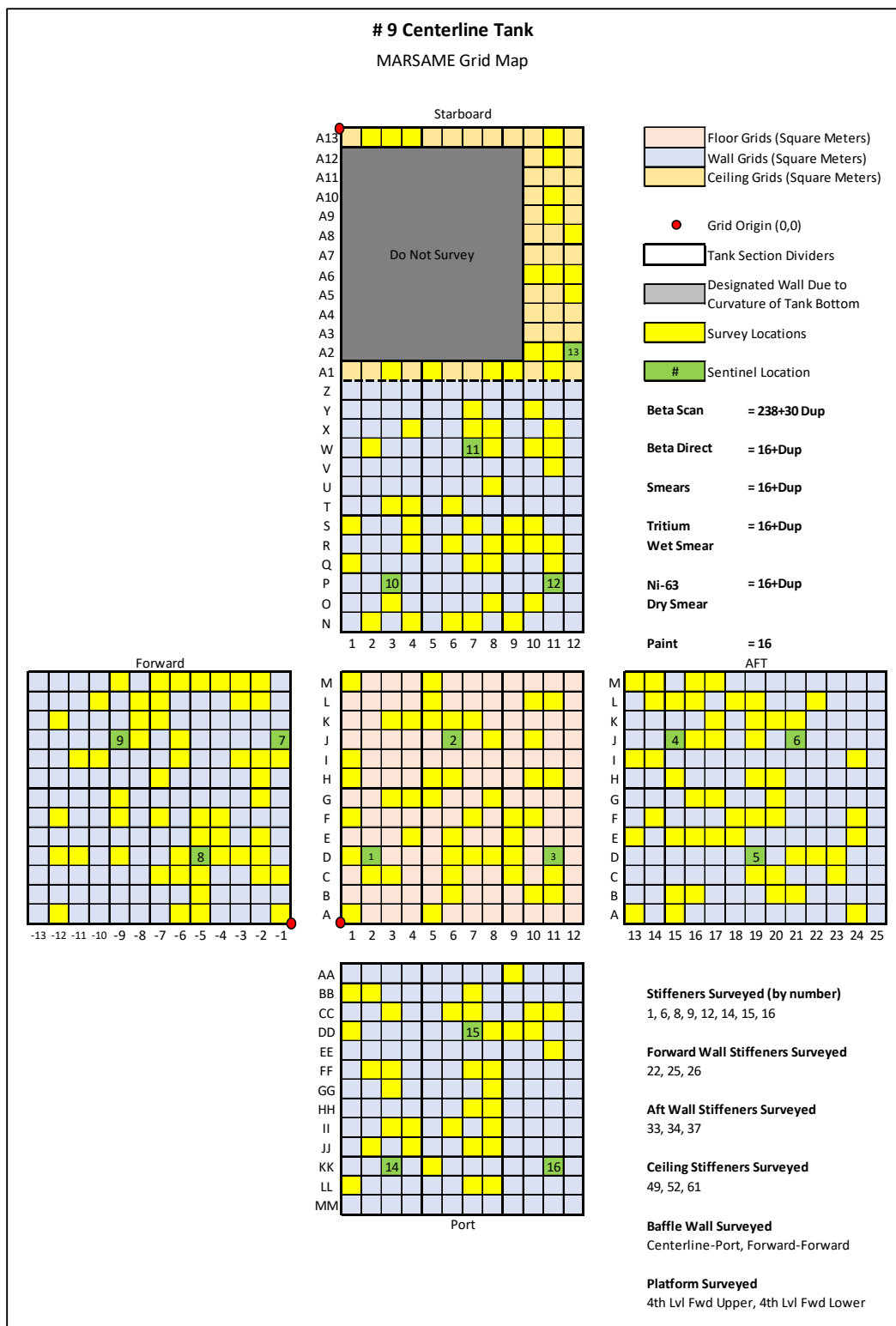
Naval Sea Systems Command (NAVSEA), 2015, *Facility System Status Report (FSSR), Surface Ship Support Barge*, Rev. A-12, April 29.

U.S. Nuclear Regulatory Commission (NRC), 2009, *Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual (MARSAME)*, NUREG-1575, Supp. 1; EPA-402-R-09-001; DOE/HS-0004; January.

U.S. Nuclear Regulatory Commission (NRC), 1981, *Control of Radioactively Contaminated Material*, I&E Circular No. 81-07, May.

ATTACHMENT 1

SURVEY AND SAMPLE LOCATION MAP



A total of 256 beta scans were performed, which included 238 randomly selected grids and the 16 grids where direct measurements were collected. There were two additional grids surveyed which brought the total to 256.

ATTACHMENT 2

MARSAME DATA TRACKING SHEET

Surface Ship Support Barge (SSSB) Dismantlement and Disposal
Contract Number N00024-20-C-4139
MARSAME Survey Package SSSB-002, Tank 9CL

Rev. 1
November 2021
501513

MARSAME SURVEY PACKAGE

SSSB-002
Tank 9CL

Survey Requirement	Completion (Signature and Date)
Tank 9CL	
25% cumulative beta scan of tank deck, walls, baffles, and overhead. Identify grids that were scan surveyed as applicable (minimum of 575 square meters of coverage).	<i>E. Carter</i> 2-1-22
At least 15 direct beta static measurements (see attached map) taken on a systematic grid with a random starting point on the deck, walls, overheads, and internal walls/baffles.	<i>E. Carter</i> 2-1-22
Gross beta smear per direct measurement location.	<i>E. Carter</i> 2-1-22
H-3 and Ni-63 smears per direct measurement location.	<i>E. Carter</i> 2-1-22
Volumetric paint samples for isotopic analysis at each direct static location	<i>E. Carter</i> 2-1-22
One QC measurement for each 20 measurements performed.	<i>E. Carter</i> 2-1-22

Reviewed By: *[Signature]*

Approved By: *[Signature]*

ATTACHMENT 3

BETA SCAN SURVEY RESULTS SUMMARY

Count Times (min)				Detector		Item	Qty	Surveyed	% Coverage		
	Sample	1		Width (cm)	6.9	Grids	863	256	29.7%		
	Bkgd	10		Area (cm2)	100	Stiffeners	62	17	27.4%		
	Speed (w/sec)	2				Baffle Sides	6	2	33.3%		
						Platforms	8	2	25.0%		
Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
1	A-1	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	A-5	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	B-6	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	B-10	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	B-11	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	C-2	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	C-3	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	C-6	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	C-9	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	C-11	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	D-1	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	D-2	120	64.5	16.70%	25%	1,329.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Floor
	D-6	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	D-7	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
3	D-8	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	D-9	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	D-11	120	64.5	16.70%	25%	1,329.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Floor
	E-4	90	56.0	18.80%	25%	722.7	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	E-6	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	E-9	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	F-1	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	F-7	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	F-9	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	F-10	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
G-3	80	56.0	18.80%	25%	509.9	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor	

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
2	G-4	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	G-5	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Floor
	G-8	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Floor
	H-1	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	H-5	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	H-6	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	H-10	75	96.2	23.00%	25%	-368.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	H-11	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	I-1	160	96.2	23.00%	25%	1,109.6	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	J-6	120	64.5	16.70%	25%	1,329.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Floor
	J-8	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	J-10	78	96.2	23.00%	25%	-316.5	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	K-3	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	K-4	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	K-5	60	96.2	23.00%	25%	-629.6	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	K-6	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	K-7	90	96.2	23.00%	25%	-107.8	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	L-5	75	96.2	23.00%	25%	-368.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	L-10	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	L-11	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	M-1	76	96.2	23.00%	25%	-351.3	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	M-5	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	A-(-1)	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall
	A-(-5)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	A-(-6)	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	A-(-12)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	B-(-5)	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	C-(-1)	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall
	C-(-2)	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall
	C-(-5)	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	C-(-6)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	C-(-7)	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	D-(-2)	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
8	D-(-3)	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	D-(-4)	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	D-(-5)	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Forward Wall
	D-(-6)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	D-(-9)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	D-(-11)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	D-(-12)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	E-(-2)	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall
	E-(-4)	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	E-(-5)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	F-(-4)	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	F-(-5)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	F-(-7)	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	F-(-9)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	F-(-12)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	G-(-2)	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Forward Wall
7	G-(-9)	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	H-(-2)	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Forward Wall
	H-(-7)	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	I-(-1)	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Forward Wall
	I-(-2)	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Forward Wall
	I-(-3)	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	I-(-6)	100	93.9	23.00%	25%	105.7	146.5	3,603.4	< MDA	ASY-20220120-SSSB-0730	Forward Wall
	I-(-10)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	I-(-11)	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Forward Wall
	J-(-1)	100	64.5	16.70%	25%	850.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Forward Wall
	J-(-6)	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Forward Wall
9	J-(-8)	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	J-(-9)	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Forward Wall
	K-(-7)	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	K-(-8)	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	K-(-12)	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Forward Wall
	L-(-2)	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Forward Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
	L-(-3)	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	L-(-7)	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	L-(-8)	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	L-(-10)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	M-(-2)	100	96.2	23.00%	25%	66.1	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Forward Wall
	M-(-3)	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	M-(-4)	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Forward Wall
	M-(-5)	100	93.9	23.00%	25%	105.7	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Forward Wall
	M-(-6)	100	93.9	23.00%	25%	105.7	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Forward Wall
	M-(-7)	100	93.4	23.00%	25%	114.8	146.1	3,593.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	M-(-8)	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Forward Wall
	M-(-9)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
5	A-13	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Aft Wall
	A-15	45	93.9	23.00%	25%	-850.9	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	A-24	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	B-15	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	B-16	90	93.9	23.00%	25%	-68.3	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	B-20	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	B-21	80	67.7	16.04%	25%	308.0	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	C-19	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	C-20	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	C-23	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	D-19	90	100.6	23.00%	25%	-183.5	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Aft Wall
	D-21	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	D-22	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	D-23	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	E-13	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Aft Wall
	E-15	90	93.9	23.00%	25%	-68.3	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	E-16	90	93.9	23.00%	25%	-68.3	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	E-17	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Aft Wall
	E-18	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Aft Wall
	E-24	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	F-14	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Aft Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
	F-18	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	F-19	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	F-20	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	F-24	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	G-16	90	93.9	23.00%	25%	-68.3	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	G-17	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Aft Wall
	G-18	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Aft Wall
	G-20	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	H-15	70	93.9	23.00%	25%	-416.1	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	H-19	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	H-20	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	I-13	65	96.2	23.00%	25%	-542.6	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Aft Wall
	I-14	65	96.2	23.00%	25%	-542.6	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Aft Wall
	I-24	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Aft Wall
4	J-15	80	64.5	16.70%	25%	371.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Aft Wall
	J-16	70	93.9	23.00%	25%	-416.1	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	J-17	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	J-19	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
6	J-21	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Aft Wall
	K-17	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	K-19	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	K-20	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	K-21	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	L-14	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Aft Wall
	L-15	70	93.9	23.00%	25%	-416.1	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	L-16	70	93.9	23.00%	25%	-416.1	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	L-18	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	L-19	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	L-22	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Aft Wall
	M-13	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Aft Wall
	M-14	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Aft Wall
	M-16	85	93.9	23.00%	25%	-155.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall
	M-17	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Aft Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2PI	Surface	dpm/100 cm2		dpm/100 cm2			
10	N-2	70	96.2	23.00%	25%	-455.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	N-4	70	96.2	23.00%	25%	-455.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	N-6	70	96.2	23.00%	25%	-455.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	N-7	60	96.2	23.00%	25%	-629.6	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	N-9	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	O-3	70	96.2	23.00%	25%	-455.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	O-8	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	O-10	80	96.2	23.00%	25%	-281.7	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Starboard Wall
	P-3	80	64.5	16.70%	25%	371.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Starboard Wall
	P-11	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Starboard Wall
12	Q-1	85	93.9	23.00%	25%	-155.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	Q-7	85	93.9	23.00%	25%	-155.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	Q-8	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	Q-11	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-4	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-6	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-8	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-9	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-10	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	R-11	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
11	S-1	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	S-4	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	S-7	60	93.9	23.00%	25%	-590.0	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	S-9	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	S-10	80	93.9	23.00%	25%	-242.2	146.5	3,603.4	< MDA	ASY-20220119-SSSB-0730	Starboard Wall
	T-3	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Starboard Wall
	T-4	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	T-6	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Starboard Wall
	U-8	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	V-11	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Starboard Wall
11	W-2	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	W-7	110	100.6	23.00%	25%	164.3	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Starboard Wall
	W-8	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
	W-10	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	W-11	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	X-4	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	X-7	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	X-8	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	X-10	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	X-11	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	Y-7	80	82.7	17.03%	25%	-64.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
	Y-10	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Starboard Wall
15	AA-9	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Port Wall
	BB-1	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Port Wall
	BB-2	70	56.0	18.80%	25%	297.2	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Port Wall
	BB-7	60	56.0	18.80%	25%	84.4	113.2	3,404.9	< MDA	ASY-20220118-SSSB-0721	Port Wall
	CC-3	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	CC-6	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	CC-7	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	CC-10	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	CC-11	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	DD-1	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	DD-7	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Port Wall
	DD-8	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	DD-9	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	DD-10	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	EE-11	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	FF-2	60	53.9	18.80%	25%	129.1	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	FF-3	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	FF-7	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	FF-8	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	GG-3	80	53.9	18.80%	25%	554.6	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	GG-8	70	53.9	18.80%	25%	341.8	111.0	3,340.5	< MDA	ASY-20220119-SSSB-0729	Port Wall
	HH-7	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Port Wall
	HH-8	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	II-3	80	94.4	23.00%	25%	-249.9	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
14	II-4	70	94.4	23.00%	25%	-423.8	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	II-6	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	II-8	60	94.4	23.00%	25%	-597.7	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	JJ-2	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	JJ-4	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	JJ-7	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	JJ-8	100	94.4	23.00%	25%	98.0	146.9	3,611.8	< MDA	ASY-20220114-SSSB-0770	Port Wall
	KK-3	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Port Wall
16	KK-5	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Port Wall
	LL-1	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Port Wall
	LL-7	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Port Wall
	LL-8	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Port Wall
13	A1-3	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling
	A1-5	80	67.7	16.04%	25%	308.0	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling
	A1-8	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A1-9	160	82.7	17.03%	25%	1,814.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A1-11	180	82.7	17.03%	25%	2,284.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A2-10	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A2-11	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A2-12	100	100.6	23.00%	25%	-9.6	151.6	3,728.3	< MDA	ASY-20220113-SSSB-0699	Ceiling
	A5-12	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A6-10	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A6-11	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A6-12	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A8-12	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A9-11	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A10-11	100	82.7	17.03%	25%	405.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A12-11	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A13-2	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A13-3	160	82.7	17.03%	25%	1,814.7	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A13-4	140	82.7	17.03%	25%	1,345.0	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling
	A13-11	120	82.7	17.03%	25%	875.3	137.5	4,566.3	< MDA	ASY-20220118-SSSB-0723	Ceiling

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
F/A Stiff	1	80	69.4	16.70%	25%	253.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	F/A Stiffener
	6	80	69.4	16.70%	25%	253.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	F/A Stiffener
	8	60	93.5	23.00%	25%	-582.2	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	
	8	60	93.5	23.00%	25%	-582.2	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	F/A Stiffener
	8	80	93.5	23.00%	25%	-234.3	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	
	9	60	93.5	23.00%	25%	-582.2	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	
	9	60	93.5	23.00%	25%	-582.2	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	F/A Stiffener
	9	80	93.5	23.00%	25%	-234.3	146.2	3,594.7	< MDA	ASY-20220120-SSSB-0738	
	12	80	101.8	23.00%	25%	-378.3	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	F/A Stiffener
	14	80	101.8	23.00%	25%	-378.3	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	F/A Stiffener
	15	80	101.8	23.00%	25%	-378.3	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	F/A Stiffener
	16	80	69.4	16.70%	25%	253.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	F/A Stiffener
Fwd Stiff	22	100	69.4	16.70%	25%	732.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	Forward Stiffener
	25	80	69.4	16.70%	25%	253.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	Forward Stiffener
	26	100	69.4	16.70%	25%	732.9	125.9	4,265.9	< MDA	ASY-20220121-SSSB-0752	Forward Stiffener
Aft Stiff	33	100	101.8	23.00%	25%	-30.4	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	Aft Stiffener
	34	100	101.8	23.00%	25%	-30.4	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	Aft Stiffener
	37	100	101.8	23.00%	25%	-30.4	152.5	3,750.5	< MDA	ASY-20220125-SSSB-0753	Aft Stiffener
Ceil Stiff	49	120	57.5	18.80%	25%	1,329.8	114.6	3,449.2	< MDA	ASY-20220126-SSSB-0759	Ceiling Stiffener
	52	100	57.5	18.80%	25%	904.3	114.6	3,449.2	< MDA	ASY-20220126-SSSB-0759	Ceiling Stiffener
	61	120	57.5	18.80%	25%	1,329.8	114.6	3,449.2	< MDA	ASY-20220126-SSSB-0759	Ceiling Stiffener
Baffle	CL - Port	100	69.9	16.04%	25%	750.8	126.4	4,458.1	< MDA	ASY-20220126-SSSB-0757	Baffle
	Fwd - Fwd	100	69.9	16.04%	25%	750.8	126.4	4,458.1	< MDA	ASY-20220126-SSSB-0757	Baffle
Platform	L4 Upper	100	99.1	23.00%	25%	15.7	150.5	3,701.3	< MDA	ASY-20220126-SSSB-0758	Platform
	L4 Lower	100	99.1	23.00%	25%	15.7	150.5	3,701.3	< MDA	ASY-20220126-SSSB-0758	Platform

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
QC											
	C-6	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Floor
	D-2	120	64.5	16.70%	25%	1,329.3	121.4	4,112.5	< MDA	ASY-20220113-SSSB-0700	Floor
	D-7	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Floor
	D-8	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Floor
	D-9	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Floor
	H-6	90	96.2	23.00%	25%	-107.8	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	J-6	90	96.2	23.00%	25%	-107.8	148.3	3,646.7	< MDA	ASY-20220118-SSSB-0722	Floor
	C-(-7)	100	93.4	23.00%	25%	115.7	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	D-(-4)	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Forward Wall
	D-(-6)	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Forward Wall
	F-(-7)	80	93.4	23.00%	25%	-232.2	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	H-(-7)	80	93.4	23.00%	25%	-232.2	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	I-(-6)	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Forward Wall
	I-(-11)	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Forward Wall
	J-(-6)	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Forward Wall
	J-(-8)	80	93.4	23.00%	25%	-232.2	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	K-(-7)	80	93.4	23.00%	25%	-232.2	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	K-(-8)	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	L-(-7)	100	93.4	23.00%	25%	115.7	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	L-(-8)	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Forward Wall
	M-(-4)	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Forward Wall
	C-19	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	C-20	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	C-21	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	D-22	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	F-19	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	F-20	110	69.1	16.04%	25%	1,021.4	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	G-20	90	69.1	16.04%	25%	522.5	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	H-19	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	H-20	80	69.1	16.04%	25%	273.1	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	J-16	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
	J-19	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	K-17	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	K-19	80	69.1	16.04%	25%	273.1	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	K-20	90	69.1	16.04%	25%	522.5	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	L-19	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	L-22	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Aft Wall
	L-22	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Aft Wall
	M-14	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Aft Wall
	Q-7	100	61.1	18.80%	25%	827.7	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	R-4	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Starboard Wall
	R-8	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	T-3	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Starboard Wall
	T-4	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Starboard Wall
	T-6	90	69.1	16.04%	25%	522.5	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Starboard Wall
	U-8	100	69.1	16.04%	25%	772.0	125.6	4,430.9	< MDA	ASY-20220120-SSSB-0740	Starboard Wall
	V-11	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Starboard Wall
	W-8	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Starboard Wall
	W-10	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Starboard Wall
	W-11	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Starboard Wall
	CC-3	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Port Wall
	EE-11	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Port Wall
	FF-3	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Port Wall
	JJ-2	100	93.4	23.00%	25%	115.7	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	II-3	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	II-4	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	JJ-4	70	93.4	23.00%	25%	-406.1	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	II-6	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	HH-7	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	HH-8	60	93.4	23.00%	25%	-580.0	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	II-8	120	93.4	23.00%	25%	463.5	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	JJ-7	100	93.4	23.00%	25%	115.7	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	JJ-8	100	93.4	23.00%	25%	115.7	146.1	3,592.3	< MDA	ASY-20220120-SSSB-0739	Port Wall
	A1-8	120	67.7	16.04%	25%	1,305.7	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling

Loc	Grid	Sample	Background	Efficiency		Activity	MDCR	MDA	Results	Survey	Surface
		cpm	cpm	2Pi	Surface	dpm/100 cm2		dpm/100 cm2			
	A1-9	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling
	A1-11	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling
	A1-11	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Ceiling
	A5-12	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Ceiling
	A8-12	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Ceiling
	A13-3	100	67.7	16.04%	25%	806.9	124.3	4,385.8	< MDA	ASY-20220119-SSSB-0727	Ceiling
	A13-3	80	61.1	18.80%	25%	402.1	118.2	3,555.6	< MDA	ASY-20220120-SSSB-0731	Ceiling

ATTACHMENT 4

DIRECT BETA MEASUREMENT RESULTS SUMMARY

		Count Times (min)		Detector							
		Sample	1	Width (cm)	6.9						
		Bkgd	10	Area (cm2)	100						
Loc	Grid	Sample	Background	Efficiency		Activity	Lc	Results	MDA	Results	Survey
		cpm	cpm	2Pi	Surface	dpm/100 cm2	Counts		dpm/100 cm2		
1	D-2	75	64.5	16.70%	25%	251.5	78.4	< Lc	728.7	< MDA	ASY-20220113-SSSB-0700
2	J-6	79	74.2	16.70%	25%	116.2	89.0	< Lc	776.6	< MDA	ASY-20220114-SSSB-0705
3	D-11	77	74.2	16.70%	25%	68.3	89.0	< Lc	776.6	< MDA	ASY-20220114-SSSB-0705
4	J-15	72	64.5	16.70%	25%	179.6	78.4	< Lc	728.7	< MDA	ASY-20220113-SSSB-0700
5	D-19	69	100.6	23.00%	25%	-548.7	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
6	J-21	81	100.6	23.00%	25%	-340.0	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
7	J-(-1)	66	64.5	16.70%	25%	35.9	78.4	< Lc	728.7	< MDA	ASY-20220113-SSSB-0700
8	D-(-5)	77	100.6	23.00%	25%	-409.6	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
9	J-(-9)	88	100.6	23.00%	25%	-218.3	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
10	P-3	67	64.5	16.70%	25%	59.9	78.4	< Lc	728.7	< MDA	ASY-20220113-SSSB-0700
11	W-7	76	100.6	23.00%	25%	-427.0	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
12	P-11	83	100.6	23.00%	25%	-305.2	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
13	A2-12	106	100.6	23.00%	25%	94.8	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
14	KK-3	89	100.6	23.00%	25%	-200.9	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
15	DD-7	72	100.6	23.00%	25%	-496.5	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
16	KK-11	78	100.6	23.00%	25%	-392.2	117.9	< Lc	648.9	< MDA	ASY-20220113-SSSB-0699
<u>QC</u>											
1D	D-2	81	74.2	16.70%	25%	164.1	89.0	< Lc	776.6	< MDA	ASY-20220114-SSSB-0705

ATTACHMENT 5

REMOVABLE BETA SURVEY RESULTS SUMMARY

		Count Times (min)							
		Sample	1						
		Blkgd	10						
Loc	Grid	Sample cpm	Background cpm	Efficiency	Activity dpm/100 cm2	1 σ Uncertainty dpm/100 cm2	MDA dpm/100 cm2	Results	Survey
1	D-2	28	35.0	17.4%	-40.2	32.3	132.9	< MDA	ASY-20220113-SSSB-0700
2	J-6	26	35.0	17.4%	-51.7	31.2	132.9	< MDA	ASY-20220113-SSSB-0700
3	D-11	26	35.0	17.4%	-51.7	31.2	132.9	< MDA	ASY-20220113-SSSB-0700
4	J-15	37	35.0	17.4%	11.5	36.6	132.9	< MDA	ASY-20220113-SSSB-0700
5	D-19	28	25.4	15.6%	16.7	35.4	128.8	< MDA	ASY-20220113-SSSB-0699
6	J-21	24	25.4	15.6%	-9.0	33.0	128.8	< MDA	ASY-20220113-SSSB-0699
7	J-(-1)	27	35.0	17.4%	-46.0	31.7	132.9	< MDA	ASY-20220113-SSSB-0700
8	D-(-5)	24	25.4	15.6%	-9.0	33.0	128.8	< MDA	ASY-20220113-SSSB-0699
9	J-(-9)	24	25.4	15.6%	-9.0	33.0	128.8	< MDA	ASY-20220113-SSSB-0699
10	P-3	37	35.0	17.4%	11.5	36.6	132.9	< MDA	ASY-20220113-SSSB-0700
11	W-7	22	25.4	15.6%	-21.8	31.8	128.8	< MDA	ASY-20220113-SSSB-0699
12	P-11	22	25.4	15.6%	-21.8	31.8	128.8	< MDA	ASY-20220113-SSSB-0699
13	A2-12	34	25.4	15.6%	55.1	38.7	128.8	< MDA	ASY-20220113-SSSB-0699
14	KK-3	23	25.4	15.6%	-15.4	32.4	128.8	< MDA	ASY-20220113-SSSB-0699
15	DD-7	25	25.4	15.6%	-2.6	33.6	128.8	< MDA	ASY-20220113-SSSB-0699
16	KK-11	29	25.4	15.6%	23.1	36.0	128.8	< MDA	ASY-20220113-SSSB-0699
<u>QC</u>									
1D	D-2	30	35.0	17.4%	-28.7	33.3	132.9	< MDA	ASY-20220113-SSSB-0700

ATTACHMENT 6

REMOVABLE LOW-ENERGY BETA SURVEY RESULTS SUMMARY

Italics	Less than MDA/MDC
Bold	Greater than or Equal to MDA/MDC

ATTACHMENT 7

**LABORATORY ANALYTICAL REPORTS –
REMOVABLE LOW-ENERGY BETA SMEARS**

APTIM FEDERAL SERVICES LLC

PO: 208345

Project: 501513 SSSB Decommissioning

**LEVEL II
REPORT OF ANALYSIS**

WORK ORDER #22-01051-OR

January 31, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**



EBERLINE

ANALYTICAL

EBERLINE ANALYTICAL CORPORATION
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EBS-OR-49289

January 31, 2022

Guy Gallelo, Jr.
APTIM
16406 US Route 224 E, Annex
Findlay, OH 45840

CASE NARRATIVE

Work Order # 22-01051-OR

SAMPLE RECEIPT

This work order contains sixteen wipe samples received 01/18/2022. Eight samples were analyzed for Tritium. Eight samples were analyzed for Nickel-63.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
501513-9C-SM-01	22-01051-04	501513-9C-SM-05	22-01051-12
501513-9C-SM-01	22-01051-05	501513-9C-SM-05	22-01051-13
501513-9C-SM-02	22-01051-06	501513-9C-SM-06	22-01051-14
501513-9C-SM-02	22-01051-07	501513-9C-SM-06	22-01051-15
501513-9C-SM-03	22-01051-08	501513-9C-SM-07	22-01051-16
501513-9C-SM-03	22-01051-09	501513-9C-SM-07	22-01051-17
501513-9C-SM-04	22-01051-10	501513-9C-SM-08	22-01051-18
501513-9C-SM-04	22-01051-11	501513-9C-SM-08	22-01051-19

ANALYTICAL METHODS

Tritium was performed using Method LANL ER-210 Modified. Nickel-63 was performed using Method ASTM 3500-Ni Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

TRITIUM

Smears were received from client equilibrated in deionized water. Equilibrates were placed in liquid scintillation vials and smears were subsequently rinsed with Tritium free water which was added to scintillation vials. Scintillation cocktail was added. Samples were counted by beta liquid scintillation.

ANALYTICAL RESULTS CONTINUED

TRITIUM CONTINUED

Samples demonstrated acceptable results for all Tritium analyses. The Tritium method blank demonstrated an acceptable result. Results for the Tritium replicate demonstrated a slightly high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Tritium laboratory control sample demonstrated an acceptable percent recovery.

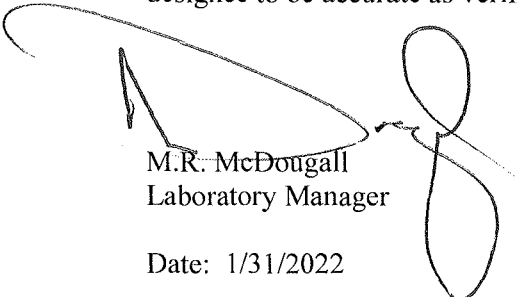
NICKEL-63

Smears were leached in Nitric acid to dissolve any Nickel-63 activity present. Acid was neutralized with Sodium Hydroxide to a pH of 4.0 followed by dilution with deionized water as appropriate. Scintillation cocktail was added, and Nickel-63 activity was determined by energy window specific beta liquid scintillation. The laboratory control sample and blank were analyzed using the same selective technique.

Samples demonstrated acceptable results for all Nickel-63 analyses. The Nickel-63 method blank demonstrated an acceptable result. Results for the Nickel-63 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Nickel-63 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 1/31/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01051				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SM				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01051-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Tritium	LANL ER-210 Modified	1.80E+02	6.47E+00			pCi/s
22-01051-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Tritium	LANL ER-210 Modified	1.72E+02	7.28E+00	1.21E+01	5.84E+00	pCi/s
22-01051-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Tritium	LANL ER-210 Modified	1.52E+00	3.43E+00	3.43E+00	5.86E+00	pCi/s
22-01051-03	DUP	501513-9C-SM-01	01/13/22 10:30	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	6.85E+00	1.37E+01	1.38E+01	2.34E+01	pCi/s
22-01051-04	DO	501513-9C-SM-01	01/13/22 10:30	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	9.49E+00	1.44E+01	1.44E+01	2.43E+01	pCi/s
22-01051-06	TRG	501513-9C-SM-02	01/13/22 10:52	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	-2.52E+00	3.98E+00	3.98E+00	7.05E+00	pCi/s
22-01051-08	TRG	501513-9C-SM-03	01/13/22 10:20	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	1.13E+00	4.05E+00	4.05E+00	6.95E+00	pCi/s
22-01051-10	TRG	501513-9C-SM-04	01/13/22 11:46	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	0.00E+00	4.17E+00	4.17E+00	7.23E+00	pCi/s
22-01051-12	TRG	501513-9C-SM-05	01/13/22 14:10	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	-6.40E-01	3.76E+00	3.76E+00	6.56E+00	pCi/s
22-01051-14	TRG	501513-9C-SM-06	01/13/22 13:39	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	-2.17E+00	3.42E+00	3.43E+00	6.08E+00	pCi/s
22-01051-16	TRG	501513-9C-SM-07	01/13/22 11:14	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	-1.84E+00	3.57E+00	3.57E+00	6.31E+00	pCi/s
22-01051-18	TRG	501513-9C-SM-08	01/13/22 14:30	1/18/2022	1/20/2022	22-01051	Tritium	LANL ER-210 Modified	-1.02E+00	3.60E+00	3.60E+00	6.31E+00	pCi/s
22-01051-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	1.43E+03	4.29E+01			pCi/s
22-01051-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	1.44E+03	1.19E+01	8.57E+01	2.85E+00	pCi/s
22-01051-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	0.00E+00	1.65E+00	1.65E+00	2.84E+00	pCi/s
22-01051-03	DUP	501513-9C-SM-01	01/13/22 10:28	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-1.38E+00	3.77E+00	3.77E+00	6.57E+00	pCi/s
22-01051-05	DO	501513-9C-SM-01	01/13/22 10:28	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	3.66E+00	3.79E+00	3.79E+00	6.34E+00	pCi/s
22-01051-07	TRG	501513-9C-SM-02	01/13/22 10:50	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-1.38E+00	1.75E+00	1.76E+00	3.09E+00	pCi/s
22-01051-09	TRG	501513-9C-SM-03	01/13/22 10:19	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-7.95E-01	1.73E+00	1.74E+00	3.03E+00	pCi/s
22-01051-11	TRG	501513-9C-SM-04	01/13/22 11:45	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-1.62E+00	1.66E+00	1.66E+00	2.94E+00	pCi/s
22-01051-13	TRG	501513-9C-SM-05	01/13/22 14:10	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-7.69E-01	1.68E+00	1.68E+00	2.93E+00	pCi/s
22-01051-15	TRG	501513-9C-SM-06	01/13/22 13:36	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-6.79E-01	1.65E+00	1.65E+00	2.87E+00	pCi/s
22-01051-17	TRG	501513-9C-SM-07	01/13/22 11:12	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-8.45E-01	1.67E+00	1.67E+00	2.93E+00	pCi/s
22-01051-19	TRG	501513-9C-SM-08	01/13/22 14:30	1/18/2022	1/19/2022	22-01051	Nickel-63	ASTM 3500-Ni Modified	-7.63E-02	1.68E+00	1.68E+00	2.91E+00	pCi/s

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621



CHAIN OF CUSTODY

22-01051

Ref. Document # 5010513-COC-037

Page 1 of 4

REC'D JAN 18 2021

Project Number: 501513

Project Name / Location: SSSB Decomisioning

Purchase Order #: 208345

Project Contact: Michael Carr

(Name & phone #)

Send Report To: Guy Gallelo

Phone/Fax Number: guy.gallelo@aptim.com

Address:

City:

Shipment Date: 1/18/2022

Waybill/Airbill Number: 7757 7518 8017

Lab Destination: Eberline-Oakridge

Lab Contact Name / ph. #: Mike McDougall 865-481-0863 ext 128

Sampler's Name(s): BR, EC, JP

Sample ID Number	Sample Description	Collection Information			Matrix	# of containers	Container type	Preservative						Analyses Requested							Turn Around Time Requested
		Date	Time	G/C				HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice		Gross Alpha / Beta	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spectroscopy	Carbon-14 (C-14)			
4 501513-9C-SM-01	MARSAME Wipe; Tank 9C #1	1-13-2022	1030	G	WP	1	Vial								X						7-BD
5 501513-9C-SM-01	MARSAME Wipe; Tank 9C #1	1-13-2022	1028	G	WP	1	Vial									X					7-BD
501513-9C-PA-01	MARSAME Paint Sample; Tank 9C #1	1-14-2022	1405	C	CP	1	Bag								X	X	X	X			7-BD
6 501513-9C-SM-02	MARSAME Wipe; Tank 9C #2	1-13-2022	1052	G	WP	1	Vial								X						7-BD
7 501513-9C-SM-02	MARSAME Wipe; Tank 9C #2	1-13-2022	1050	G	WP	1	Vial									X					7-BD
501513-9C-PA-02	MARSAME Paint Sample; Tank 9C #2	1-14-2022	1118	C	CP	1	Bag								X	X	X	X			7-BD
8 501513-9C-SM-03	MARSAME Wipe; Tank 9C #3	1-13-2022	1020	G	WP	1	Vial								X						7-BD
9 501513-9C-SM-03	MARSAME Wipe; Tank 9C #3	1-13-2022	1019	G	WP	1	Vial									X					7-BD
501513-9C-PA-03	MARSAME Paint Sample; Tank 9C #3	1-14-2022	1410	C	CP	1	Bag								X	X	X	X			7-BD

Special Instructions:

QC/Data Package Level Required:

I II III IV/Project Specific:

G/C Codes

C = Composite

G = Grab

Matrix Codes

DW = Drinking Water

SO = Soil

GW = Ground Water

SL = Sludge

WW = Waste Water

CP = Chip Samples

SW = Surface Water

WP = Wipe Samples

LIQ = Other Liquid

SOL = Other Solid

AS = Air Sample

SED = Sediment

Relinquished By:

John Peden John Peden

Date: 1-17-2022

Time: 1445

Received By:

Bryon Rogers BBR

Date: 1-17-2022

Time: 1445

Relinquished By:

Bryon Rogers BBR

Date: 1-17-2022

Time: 1612

Received By:

Kendall Spencer

Date: 1-18-22

Time: 1016

Relinquished By:

Date:

Time:

Received By:

Date:

Time:



COC Continuation Page

COC Ref. Document # 5010513-COC-037

Page 2 of 4

Project Number: 501513

Shipment Date: 1/18/2022

22-01051

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

		Collection Information			Matrix	# of containers	Container type	Preservative						Analyses Requested										Turn Around Time Requested
Sample ID Number		Date	Time	G/C				HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice		Gross Alpha / Beta	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spectroscopy	Carbon-14 (C-14)						
10	501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1146	G	WP	1	Vial							X									7-BD
11	501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1145	G	WP	1	Vial								X								7-BD
	501513-9C-PA-04	MARSAME Paint Sample; Tank 9C #4	1-14-2022	1554	C	CP	1	Bag							X	X	X	X						7-BD
12	501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial							X									7-BD
13	501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial								X								7-BD
	501513-9C-PA-05	MARSAME Paint Sample; Tank 9C #5	1-17-2022	0930	C	CP	1	Bag							X	X	X	X						7-BD
14	501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1339	G	WP	1	Vial							X									7-BD
15	501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1336	G	WP	1	Vial								X								7-BD
	501513-9C-PA-06	MARSAME Paint Sample; Tank 9C #6	1-17-2022	1015	C	CP	1	Bag							X	X	X	X						7-BD
16	501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1119	G	WP	1	Vial							X									7-BD
17	501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1112	G	WP	1	Vial								X								7-BD
	501513-9C-PA-07	MARSAME Paint Sample; Tank 9C #7	1-14-2022	1050	C	CP	1	Bag							X	X	X	X						7-BD
18	501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial							X									7-BD
19	501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial								X								7-BD
	501513-9C-PA-08	MARSAME Paint Sample; Tank 9C #8	1-14-2022	1615	C	CP	1	Bag							X	X	X	X						7-BD
	501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1350	G	WP	1	Vial							X									7-BD
	501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1349	G	WP	1	Vial								X								7-BD
	501513-9C-PA-09	MARSAME Paint Sample; Tank 9C #9	1-17-2022	1030	C	CP	1	Bag							X	X	X	X						7-BD

Rec 18 1-18-22 1016



Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2WORK ORDER # 22-01051

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS

NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.REMARKS: _____

_____SIGNATURE: Ronald SpencerDATE: 1-18-22

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01051	H0003	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
H-3		95.48%	7.03%	100.00%	3.60%	1.80E+02	6.47E+00	1.72E+02	1.21E+01	H-5a	3.98E+03	3.60E+00	1.00E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

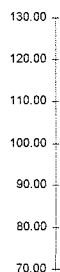
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
H-3	0.26	32.31	9.49E+00	1.44E+01	6.85E+00	1.38E+01	0.95	OK				NA	OK

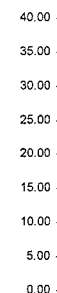
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01051	H0003	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



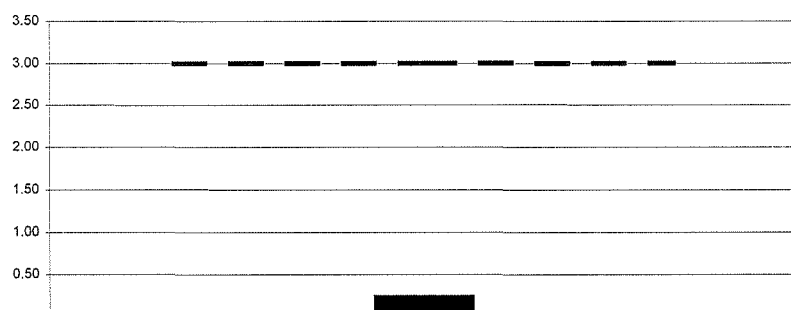
	H-3
- Lower Error	84.86
- Upper Error	106.11
◆ %R	95.48
— LCL	75
— Mean	100
— UCL	125

Replicate Sample RPD



	H-3
- Lower Error	60.13
- Upper Error	4.49
◆ RPD	32.31
— CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ H-3	0.00	0.26	0.00
— UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01051	Ni063	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
NI-63		100.93%	5.94%	100.00%	3.00%	1.43E+03	4.29E+01	1.44E+03	8.57E+01	Ni-3	2.11E+04	3.00E+00	1.51E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

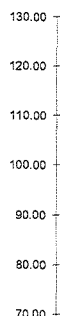
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
NI-63	1.85	441.52	3.66E+00	3.79E+00	-1.38E+00	3.77E+00	1.01	OK				NA	OK

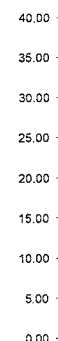
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01051	Ni063	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



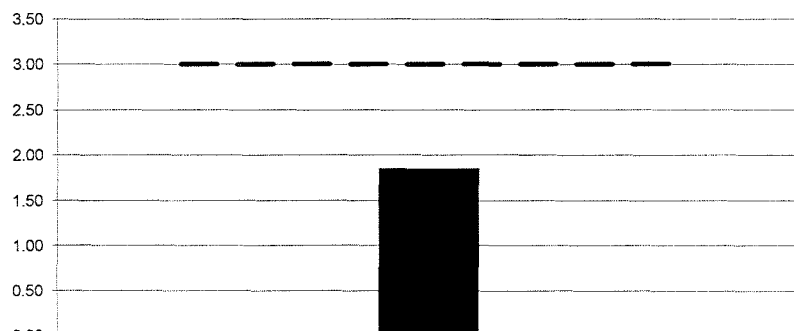
	Ni-63
- Lower Error	91.99
- Upper Error	109.86
◆ %R	100.93
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	Ni-63
- Lower Error	1172.88
- Upper Error	-289.84
◆ RPD	441.52
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ NI-63	0.00	1.85	0.00
■ UCL	3	3	3

No Matrix Spike

APTIM FEDERAL SERVICES LLC

PO: 208345

Project: 501513 SSSB Decommissioning

**LEVEL II
REPORT OF ANALYSIS**

WORK ORDER #22-01053-OR

January 31, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**



EBERLINE

ANALYTICAL

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-49290

January 31, 2022

Guy Gallelo, Jr.
APTIM
16406 US Route 224 E, Annex
Findlay, OH 45840

CASE NARRATIVE

Work Order # 22-01053-OR

SAMPLE RECEIPT

This work order contains fourteen wipe samples received 01/18/2022. Seven samples were analyzed for Tritium. Seven samples were analyzed for Nickel-63.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
501513-9C-SM-09	22-01053-04	501513-9C-SM-12	22-01053-11
501513-9C-SM-09	22-01053-05	501513-9C-SM-13	22-01053-12
501513-9C-SM-10	22-01053-06	501513-9C-SM-13	22-01053-13
501513-9C-SM-10	22-01053-07	501513-9C-SM-14	22-01053-14
501513-9C-SM-11	22-01053-08	501513-9C-SM-14	22-01053-15
501513-9C-SM-11	22-01053-09	501513-9C-SM-15	22-01053-16
501513-9C-SM-12	22-01053-10	501513-9C-SM-15	22-01053-17

ANALYTICAL METHODS

Tritium was performed using Method LANL ER-210 Modified. Nickel-63 was performed using Method ASTM 3500-Ni Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

TRITIUM

Smears were received from client equilibrated in deionized water. Equilibrates were placed in liquid scintillation vials and smears were subsequently rinsed with Tritium free water which was added to scintillation vials. Scintillation cocktail was added. Samples were counted by beta liquid scintillation.

ANALYTICAL RESULTS CONTINUED

TRITIUM CONTINUED

Samples demonstrated acceptable results for all Tritium analyses. The Tritium method blank demonstrated an acceptable result. Results for the Tritium replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Tritium laboratory control sample demonstrated an acceptable percent recovery.

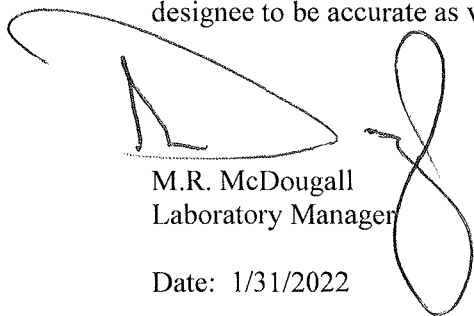
NICKEL-63

Smears were leached in Nitric acid to dissolve any Nickel-63 activity present. Acid was neutralized with Sodium Hydroxide to a pH of 4.0 followed by dilution with deionized water as appropriate. Scintillation cocktail was added, and Nickel-63 activity was determined by energy window specific beta liquid scintillation. The laboratory control sample and blank were analyzed using the same selective technique.

Samples demonstrated acceptable results for all Nickel-63 analyses. The Nickel-63 method blank demonstrated an acceptable result. Results for the Nickel-63 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Nickel-63 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 1/31/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01053				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SM				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01053-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	2.01E+02	7.24E+00			pCi/s
22-01053-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	1.96E+02	7.60E+00	1.33E+01	5.61E+00	pCi/s
22-01053-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	-9.42E-01	3.19E+00	3.19E+00	5.59E+00	pCi/s
22-01053-03	DUP	501513-9C-SM-09	01/13/22 13:50	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	-1.57E+00	6.64E+00	6.64E+00	1.16E+01	pCi/s
22-01053-04	DO	501513-9C-SM-09	01/13/22 13:50	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	-7.89E-01	6.71E+00	6.71E+00	1.17E+01	pCi/s
22-01053-06	TRG	501513-9C-SM-10	01/13/22 11:39	1/18/2022	1/19/2022	22-01053	Tritium	LANL ER-210 Modified	9.04E-01	3.90E+00	3.90E+00	6.71E+00	pCi/s
22-01053-08	TRG	501513-9C-SM-11	01/13/22 14:00	1/18/2022	1/20/2022	22-01053	Tritium	LANL ER-210 Modified	2.31E+00	3.68E+00	3.68E+00	6.24E+00	pCi/s
22-01053-10	TRG	501513-9C-SM-12	01/13/22 15:05	1/18/2022	1/20/2022	22-01053	Tritium	LANL ER-210 Modified	1.82E+00	3.52E+00	3.52E+00	6.00E+00	pCi/s
22-01053-12	TRG	501513-9C-SM-13	01/13/22 13:21	1/18/2022	1/20/2022	22-01053	Tritium	LANL ER-210 Modified	-2.33E+00	3.53E+00	3.53E+00	6.27E+00	pCi/s
22-01053-14	TRG	501513-9C-SM-14	01/13/22 13:27	1/18/2022	1/20/2022	22-01053	Tritium	LANL ER-210 Modified	1.03E+00	3.56E+00	3.56E+00	6.11E+00	pCi/s
22-01053-16	TRG	501513-9C-SM-15	01/13/22 14:45	1/18/2022	1/20/2022	22-01053	Tritium	LANL ER-210 Modified	1.07E+00	3.68E+00	3.68E+00	6.33E+00	pCi/s
22-01053-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	1.40E+03	4.21E+01			pCi/s
22-01053-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	1.43E+03	1.18E+01	8.51E+01	2.71E+00	pCi/s
22-01053-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	-6.83E-01	1.58E+00	1.58E+00	2.76E+00	pCi/s
22-01053-03	DUP	501513-9C-SM-09	01/13/22 13:49	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	2.11E+00	3.24E+00	3.25E+00	5.49E+00	pCi/s
22-01053-05	DO	501513-9C-SM-09	01/13/22 13:49	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	1.96E+00	3.25E+00	3.25E+00	5.50E+00	pCi/s
22-01053-07	TRG	501513-9C-SM-10	01/13/22 11:37	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	1.15E+00	1.66E+00	1.66E+00	2.80E+00	pCi/s
22-01053-09	TRG	501513-9C-SM-11	01/13/22 14:00	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	9.08E-01	1.62E+00	1.63E+00	2.75E+00	pCi/s
22-01053-11	TRG	501513-9C-SM-12	01/13/22 15:05	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	8.26E-01	1.61E+00	1.61E+00	2.74E+00	pCi/s
22-01053-13	TRG	501513-9C-SM-13	01/13/22 13:19	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	-7.58E-02	1.60E+00	1.60E+00	2.76E+00	pCi/s
22-01053-15	TRG	501513-9C-SM-14	01/13/22 13:27	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	3.81E-01	1.62E+00	1.62E+00	2.78E+00	pCi/s
22-01053-17	TRG	501513-9C-SM-15	01/13/22 14:45	1/18/2022	1/20/2022	22-01053	Nickel-63	ASTM 3500-Ni Modified	5.39E-01	1.64E+00	1.64E+00	2.80E+00	pCi/s

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

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COC Continuation Page

COC Ref. Document # 5010513-COC-037

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22-01053

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

REC'D JAN 18 2022

		Collection Information			Matrix	# of containers	Container type	Preservative						Gross Alpha	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spec	Carbon-14 (C-14)						Turn Around
Sample ID Number	Sample Description	Date	Time	G/C				HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice												
501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1146	G	WP	1	Vial							X										7-BD
501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1145	G	WP	1	Vial								X									7-BD
501513-9C-PA-04	MARSAME Paint Sample; Tank 9C #4	1-14-2022	1554	C	CP	1	Bag							X	X	X	X							7-BD
501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial							X										7-BD
501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial								X									7-BD
501513-9C-PA-05	MARSAME Paint Sample; Tank 9C #5	1-17-2022	0930	C	CP	1	Bag							X	X	X	X							7-BD
501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1339	G	WP	1	Vial							X										7-BD
501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1336	G	WP	1	Vial								X									7-BD
501513-9C-PA-06	MARSAME Paint Sample; Tank 9C #6	1-17-2022	1015	C	CP	1	Bag							X	X	X	X							7-BD
501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1114	G	WP	1	Vial							X										7-BD
501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1112	G	WP	1	Vial								X									7-BD
501513-9C-PA-07	MARSAME Paint Sample; Tank 9C #7	1-14-2022	1050	C	CP	1	Bag							X	X	X	X							7-BD
501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial							X										7-BD
501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial								X									7-BD
501513-9C-PA-08	MARSAME Paint Sample; Tank 9C #8	1-14-2022	1615	C	CP	1	Bag							X	X	X	X							7-BD
501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1350	G	WP	1	Vial							X										7-BD
501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1349	G	WP	1	Vial								X									7-BD
501513-9C-PA-09	MARSAME Paint Sample; Tank 9C #9	1-17-2022	1030	C	CP	1	Bag							X	X	X	X							7-BD

Rec 18 1-18-22 1016



COC Continuation Page

COC Ref. Document # 5010513-COC-037

Page 3 of 4

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

22-01053

		Collection Information				Preservative						Analyses Requested										Turn Around Time Requested
Sample ID Number	Sample Description	Date	Time	G/C	Matrix	# of containers	Container type	HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice	Gross Alpha / Beta	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spectroscopy	Carbon-14 (C-14)					
6 501513-9C-SM-10	MARSAME Wipe; Tank 9C #10	1-13-2022	1139	G	WP	1	Vial							X								7-BD
7 501513-9C-SM-10	MARSAME Wipe; Tank 9C #10	1-13-2022	1137	G	WP	1	Vial								X							7-BD
501513-9C-PA-10	MARSAME Paint Sample; Tank 9C #10	1-14-2022	1435	C	CP	1	Bag							X	X	X	X					7-BD
8 501513-9C-SM-11	MARSAME Wipe; Tank 9C #11	1-13-2022	1400	G	WP	1	Vial							X								7-BD
9 501513-9C-SM-11	MARSAME Wipe; Tank 9C #11	1-13-2022	1400	G	WP	1	Vial								X							7-BD
501513-9C-PA-11	MARSAME Paint Sample; Tank 9C #11	1-17-2022	1045	C	CP	1	Bag							X	X	X	X					7-BD
10 501513-9C-SM-12	MARSAME Wipe; Tank 9C #12	1-13-2022	1505	G	WP	1	Vial							X								7-BD
11 501513-9C-SM-12	MARSAME Wipe; Tank 9C #12	1-13-2022	1505	G	WP	1	Vial								X							7-BD
501513-9C-PA-12	MARSAME Paint Sample; Tank 9C #12	1-14-2022	1605	C	CP	1	Bag							X	X	X	X					7-BD
12 501513-9C-SM-13	MARSAME Wipe; Tank 9C #13	1-13-2022	1321	G	WP	1	Vial							X								7-BD
13 501513-9C-SM-13	MARSAME Wipe; Tank 9C #13	1-13-2022	1319	G	WP	1	Vial								X							7-BD
501513-9C-PA-13	MARSAME Paint Sample; Tank 9C #13	1-17-2022	1300	C	CP	1	Bag							X	X	X	X					7-BD
14 501513-9C-SM-14	MARSAME Wipe; Tank 9C #14	1-13-2022	1327	G	WP	1	Vial							X								7-BD
15 501513-9C-SM-14	MARSAME Wipe; Tank 9C #14	1-13-2022	1327	G	WP	1	Vial								X							7-BD
501513-9C-PA-14	MARSAME Paint Sample; Tank 9C #14	1-17-2022	1415	C	CP	1	Bag							X	X	X	X					7-BD
16 501513-9C-SM-15	MARSAME Wipe; Tank 9C #15	1-13-2022	1445	G	WP	1	Vial							X								7-BD
17 501513-9C-SM-15	MARSAME Wipe; Tank 9C #15	1-13-2022	1445	G	WP	1	Vial								X							7-BD
501513-9C-PA-15	MARSAME Paint Sample; Tank 9C #15	1-14-2022	1358	C	CP	1	Bag							X	X	X	X					7-BD

Rec 83 1-18-22 1016



Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 22-01053

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS

NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: Randolph Spencer DATE: 1-18-22

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01053	H0003	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
H-3		97.34%	6.81%	100.00%	3.60%	2.01E+02	7.24E+00	1.96E+02	1.33E+01	H-5a	3.98E+03	3.60E+00	1.12E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
H-3	0.16	66.14	-7.89E-01	6.71E+00	-1.57E+00	6.64E+00	0.97	OK				NA	OK

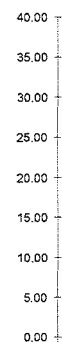
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01053	H0003	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



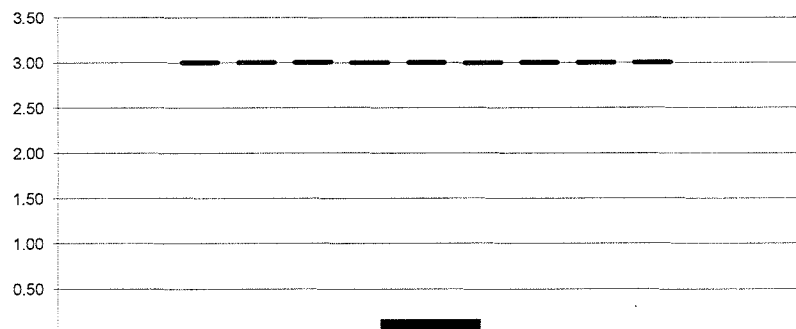
	H-3
- Lower Error	86.93
- Upper Error	107.76
◆ %R	97.34
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	H-3
- Lower Error	-121.16
- Upper Error	253.44
◆ RPD	66.14
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ H-3	0.00	0.16	0.00
■ UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01053	Ni063	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
NI-63		102.10%	5.94%	100.00%	3.00%	1.40E+03	4.21E+01	1.43E+03	8.51E+01	Ni-3	2.11E+04	3.00E+00	1.48E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

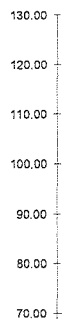
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
NI-63	0.06	7.22	1.96E+00	3.25E+00	2.11E+00	3.25E+00	1.02	OK				NA	OK

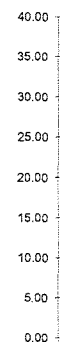
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01053	Ni063	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



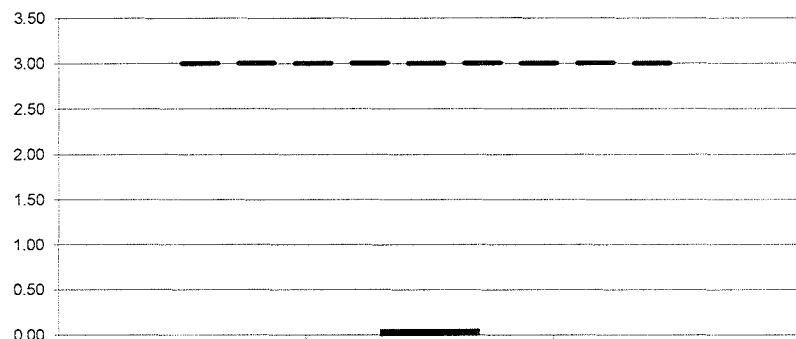
	Ni-63
- Lower Error	93.16
- Upper Error	111.04
◆ %R	102.10
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	Ni-63
- Lower Error	12.97
- Upper Error	1.46
◆ RPD	7.22
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ Ni-63	0.00	0.06	0.00
■ UCL	3	3	3

No Matrix Spike

APTIM FEDERAL SERVICES LLC

PO: 208345

Project: 501513 SSSB Decommissioning

**LEVEL II
REPORT OF ANALYSIS**

WORK ORDER #22-01054-OR

January 31, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**



EBERLINE

ANALYTICAL

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-49291

January 31, 2022

Guy Gallelo, Jr.
APTIM
16406 US Route 224 E, Annex
Findlay, OH 45840

CASE NARRATIVE

Work Order # 22-01054-OR

SAMPLE RECEIPT

This work order contains four wipe samples received 01/18/2022. Two samples were analyzed for Tritium. Two samples were analyzed for Nickel-63.

<u>CLIENT ID</u>	<u>LAB ID</u>
501513-9C-SM-16	22-01054-04
501513-9C-SM-16	22-01054-05
501513-9C-SM-01D	22-01054-06
501513-9C-SM-01D	22-01054-07

ANALYTICAL METHODS

Tritium was performed using Method LANL ER-210 Modified. Nickel-63 was performed using Method ASTM 3500-Ni Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

TRITIUM

Smears were received from client equilibrated in deionized water. Equilibrates were placed in liquid scintillation vials and smears were subsequently rinsed with Tritium free water which was added to scintillation vials. Scintillation cocktail was added. Samples were counted by beta liquid scintillation.

ANALYTICAL RESULTS CONTINUED

TRITIUM CONTINUED

Samples demonstrated acceptable results for all Tritium analyses. The Tritium method blank demonstrated an acceptable result. Results for the Tritium replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Tritium laboratory control sample demonstrated an acceptable percent recovery.

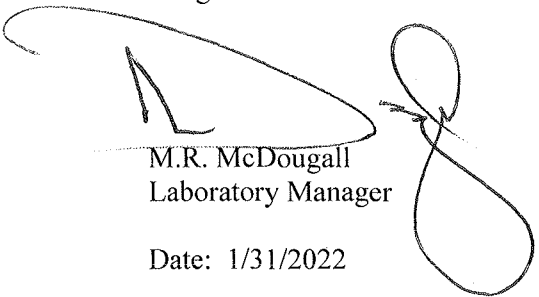
NICKEL-63

Smears were leached in Nitric acid to dissolve any Nickel-63 activity present. Acid was neutralized with Sodium Hydroxide to a pH of 4.0 followed by dilution with deionized water as appropriate. Scintillation cocktail was added, and Nickel-63 activity was determined by energy window specific beta liquid scintillation. The laboratory control sample and blank were analyzed using the same selective technique.

Samples demonstrated acceptable results for all Nickel-63 analyses. The Nickel-63 method blank demonstrated an acceptable result. Results for the Nickel-63 replicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Nickel-63 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 1/31/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01054				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SM				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01054-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	1.92E+02	6.93E+00			pCi/s
22-01054-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	1.76E+02	7.21E+00	1.22E+01	5.35E+00	pCi/s
22-01054-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	2.27E+00	3.16E+00	3.17E+00	5.35E+00	pCi/s
22-01054-03	DUP	501513-9C-SM-16	01/13/22 13:12	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	3.04E+00	6.29E+00	6.29E+00	1.07E+01	pCi/s
22-01054-04	DO	501513-9C-SM-16	01/13/22 13:12	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	1.52E+00	6.24E+00	6.24E+00	1.08E+01	pCi/s
22-01054-06	TRG	501513-9C-SM-01D	01/13/22 10:31	1/18/2022	1/20/2022	22-01054	Tritium	LANL ER-210 Modified	3.89E+00	3.47E+00	3.48E+00	5.78E+00	pCi/s
22-01054-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	1.44E+03	4.32E+01			pCi/s
22-01054-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	1.44E+03	1.19E+01	8.56E+01	2.68E+00	pCi/s
22-01054-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	9.72E-01	1.58E+00	1.58E+00	2.67E+00	pCi/s
22-01054-03	DUP	501513-9C-SM-16	01/13/22 13:01	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	1.19E+00	3.54E+00	3.54E+00	6.05E+00	pCi/s
22-01054-05	DO	501513-9C-SM-16	01/13/22 13:01	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	6.57E-01	3.42E+00	3.42E+00	5.86E+00	pCi/s
22-01054-07	TRG	501513-9C-SM-01D	01/13/22 10:28	1/18/2022	1/19/2022	22-01054	Nickel-63	ASTM 3500-Ni Modified	3.81E-01	1.59E+00	1.59E+00	2.72E+00	pCi/s

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

**COC Continuation Page**

COC Ref. Document # 5010513-COC-037

Page 4 of 4

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: *SSSB Mobile, AL*

REC'D JAN 18 2022

22-01054

[illegible]

REC 88 1-18-72 © 1016,



Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2WORK ORDER # 22-01054

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS

NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.REMARKS: _____

_____SIGNATURE: Ronald P. SpencerDATE: 1-18-22

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01054	H0003	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
H-3		91.24%	6.95%	100.00%	3.60%	1.92E+02	6.93E+00	1.76E+02	1.22E+01	H-5a	3.98E+03	3.60E+00	1.07E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

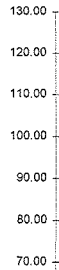
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
H-3	0.34	66.53	1.52E+00	6.24E+00	3.04E+00	6.29E+00	0.91	OK				NA	OK

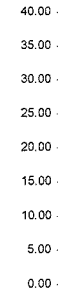
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01054	H0003	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



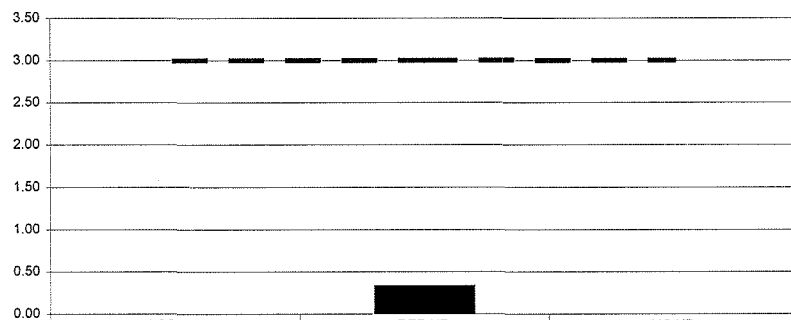
	H-3
- Lower Error	80.69
- Upper Error	101.79
◆ %R	91.24
- - LCL	75
- - Mean	100
- - UCL	125

Replicate Sample RPD



	H-3
- Lower Error	157.92
- Upper Error	-24.86
◆ RPD	66.53
- - CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
H-3	0.00	0.34	0.00
UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01054	Ni063	1	pCi	s	APTIM Federal Services LLC

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
NI-63	100.27%	5.94%	100.00%	3.00%	1.44E+03	4.32E+01	1.44E+03	8.56E+01	Ni-3	2.11E+04	3.00E+00	1.52E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

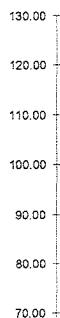
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
NI-63	0.21	57.44	6.57E-01	3.42E+00	1.19E+00	3.54E+00	1.00	OK			NA	OK

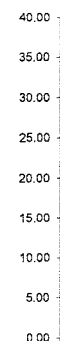
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01054	Ni063	1	pCi	s	APTIM Federal Services LLC

LCS % Recovery



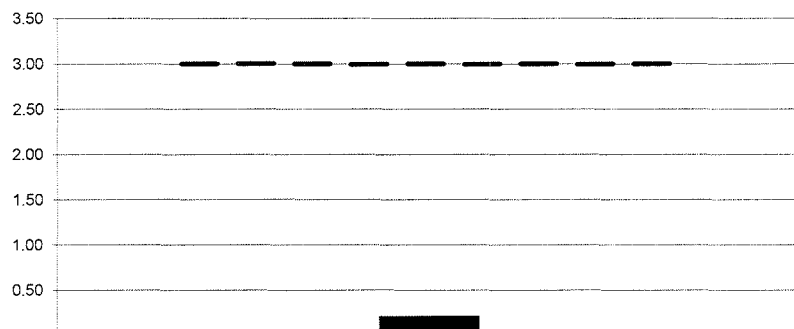
	Ni-63
- Lower Error	91.33
- Upper Error	109.20
◆ %R	100.27
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	Ni-63
- Lower Error	165.88
- Upper Error	-50.99
◆ RPD	57.44
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ NI-63	0.00	0.21	0.00
■ UCL	3	3	3

No Matrix Spike

ATTACHMENT 8

PAINT SAMPLE RESULTS SUMMARY

[illegible]

ATTACHMENT 9

LABORATORY ANALYTICAL REPORT – PAINT SAMPLES

APTIM FEDERAL SERVICES LLC

PO: 208345

Project: 501513 SSSB Decommissioning

**LEVEL II
REPORT OF ANALYSIS**

WORK ORDER #22-01055-OR

January 31, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**



EBERLINE

ANALYTICAL

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-49292

January 31, 2022

Guy Gallelo, Jr.
APTIM
16406 US Route 224 E, Annex
Findlay, OH 45840

CASE NARRATIVE

Work Order # 22-01055-OR

SAMPLE RECEIPT

This work order contains sixteen paint chip samples received 01/18/2022. Samples were analyzed for Tritium, Carbon-14, Nickel-63, and by Gamma Spectroscopy.

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>CLIENT ID</u>	<u>LAB ID</u>
501513-9C-PA-01	22-01055-04	501513-9C-PA-09	22-01055-12
501513-9C-PA-02	22-01055-05	501513-9C-PA-10	22-01055-13
501513-9C-PA-03	22-01055-06	501513-9C-PA-11	22-01055-14
501513-9C-PA-04	22-01055-07	501513-9C-PA-12	22-01055-15
501513-9C-PA-05	22-01055-08	501513-9C-PA-13	22-01055-16
501513-9C-PA-06	22-01055-09	501513-9C-PA-14	22-01055-17
501513-9C-PA-07	22-01055-10	501513-9C-PA-15	22-01055-18
501513-9C-PA-08	22-01055-11	501513-9C-PA-16	22-01055-19

ANALYTICAL METHODS

Tritium was performed using Method LANL ER-210 Modified. Carbon-14 was performed using EPA Method 520.0 Modified. Nickel-63 was performed using Method ASTM 3500-Ni Modified. Gamma Spectroscopy was performed using EPA Method 901.1 Modified.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

TRITIUM

A representative aliquot of each sample was equilibrated with Tritium free water. Aliquots were taken from equilibrates and transferred to liquid scintillation vials. Cocktail was added. Samples were then counted by beta liquid scintillation using energy specific windows for Tritium.

ANALYTICAL RESULTS CONTINUED

TRITIUM CONTINUED

Samples demonstrated acceptable results for all Tritium analyses. The Tritium method blank demonstrated an acceptable result. Results for the Tritium duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Tritium laboratory control sample demonstrated an acceptable percent recovery.

CARBON-14

A representative aliquot of each sample was placed into a 1-liter reaction vessel. A carbonate solution was added. Samples were oxidized using Potassium Permanganate. Sulfuric Acid was added, and Carbon-14/Carbon Dioxide was evolved. Carbon-14/Carbon Dioxide was captured into Harvey™, Carb-Sorb cocktail. Carbon-14 beta emissions were determined by beta liquid scintillation using an energy selective window.

Samples demonstrated acceptable results for all Carbon-14 analyses. The Carbon-14 method blank demonstrated an acceptable result. Results for the Carbon-14 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Carbon-14 laboratory control sample demonstrated an acceptable percent recovery.

NICKEL-63

A representative aliquot of each sample was leached in 8.0 molar Nitric Acid. Samples were then placed into scintillation vials and acid was neutralized with Sodium Hydroxide. Scintillation cocktail was added, and Nickel-63 activity was determined by energy window specific beta liquid scintillation.

Samples demonstrated acceptable results for all Nickel-63 analyses. The Nickel-63 method blank demonstrated an acceptable result. In this case the method blank was used as process blank. Results for the Nickel-63 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Nickel-63 laboratory control sample demonstrated an acceptable percent recovery.

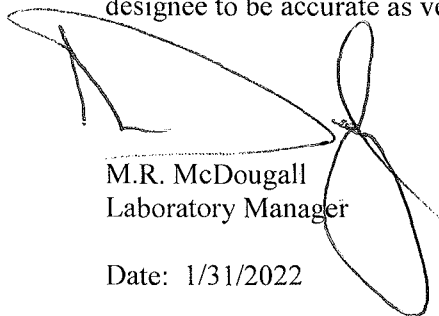
GAMMA SPECTROSCOPY

Samples for Gamma Spectroscopy analysis were prepared by transferring a known mass/aliquot of each pulverized and homogenized sample to a standard geometry container. Samples were counted on a High Purity Germanium (HPGe) gamma ray detector.

Samples demonstrated acceptable results for all gamma-emitting radionuclides as reported. Although some results were reported from the Gamma Apex Nuclides Identified Report, all results except Potassium-40 (some), Bismuth-214 and Radium-226 sample fraction -12 (Client ID: 501513-9C-PA-09) are less than the method detection limits. The method blank demonstrated acceptable results for all radionuclides as reported. Results for the Bismuth-214 and Lead-212 replicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Potassium-40 replicate demonstrated a slightly high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Cobalt-60 and Cesium-137 laboratory control sample demonstrated an acceptable percent recovery.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 1/31/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	2.66E+02	1.04E+01			pCi/g
22-01055-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	1.62E+02	6.66E+00			pCi/g
22-01055-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	2.75E+02	1.56E+01	2.10E+01	2.11E+00	pCi/g
22-01055-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	1.75E+02	1.71E+01	1.93E+01	1.90E+00	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	-2.61E-02	1.53E-01	1.53E-01	2.55E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-8.64E-03	4.43E-02	4.43E-02	6.71E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	2.48E-02	5.45E-02	5.45E-02	7.83E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	-4.66E-02	8.31E-02	8.31E-02	1.24E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	1.30E-02	2.79E-02	2.79E-02	5.66E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	-1.07E-02	3.63E-02	3.63E-02	4.96E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	7.12E-03	3.83E-02	3.83E-02	6.44E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-2.29E-02	4.56E-02	4.56E-02	6.90E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-3.18E-02	1.50E-01	1.50E-01	1.16E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.80E-02	1.26E-01	1.26E-01	5.90E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	9.47E-03	2.97E-02	2.97E-02	8.01E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	1.91E-01	3.96E-01	3.96E-01	8.37E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-1.42E-02	4.94E-02	4.94E-02	7.64E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-2.01E-02	3.74E-02	3.74E-02	5.50E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.42E-01	4.82E-01	4.83E-01	7.03E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	-9.61E-04	4.78E-02	4.78E-02	7.64E-02	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	5.02E-02	6.49E-02	6.49E-02	1.16E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	-4.66E-02	8.31E-02	8.31E-02	1.24E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	-2.61E-02	1.53E-01	1.53E-01	2.55E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	4.10E-02	8.60E-02	8.61E-02	1.54E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	6.64E-01	4.94E-01	4.96E-01	7.65E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	1.39E-01	1.08E-01	1.09E-01	2.20E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	2.45E-01	1.55E-01	1.56E-01	2.80E-01	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	3.17E-02	9.07E-02	9.07E-02	1.69E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelio, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	2.16E-01	4.27E-01	4.27E-01	7.53E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	3.31E-03	1.08E-01	1.08E-01	1.72E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-1.11E-01	2.20E-01	2.20E-01	2.58E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	2.18E-01	2.42E-01	2.43E-01	4.26E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	3.49E-02	7.98E-02	7.99E-02	1.50E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	0.00E+00	1.28E-01	1.28E-01	1.93E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-1.85E-01	1.65E-01	1.66E-01	1.67E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.08E-02	1.25E-01	1.25E-01	1.93E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	2.28E-01	3.35E-01	3.35E-01	3.94E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.15E-01	1.72E-01	1.72E-01	1.93E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	1.39E-01	1.83E-01	1.83E-01	2.70E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	3.39E+00	1.63E+00	1.64E+00	2.08E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-2.95E-02	1.17E-01	1.17E-01	1.61E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	1.20E-01	7.70E-02	7.73E-02	1.76E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	3.96E+00	1.91E+00	1.92E+00	3.20E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.40E-01	1.97E-01	1.98E-01	3.22E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	1.92E-01	1.96E-01	1.97E-01	3.23E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	2.18E-01	2.42E-01	2.43E-01	4.26E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	2.16E-01	4.27E-01	4.27E-01	7.53E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/13/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-2.35E-02	2.00E-01	2.00E-01	3.41E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	1.38E+00	1.98E+00	1.99E+00	2.80E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	2.01E-01	3.00E-01	3.00E-01	5.27E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	-3.87E-01	6.61E-01	6.61E-01	7.77E-01	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-1.97E-01	3.20E-01	3.20E-01	4.17E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



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			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	-8.06E-02	4.28E-01	4.28E-01	6.51E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-1.10E-03	9.98E-02	9.98E-02	1.59E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-3.57E-02	1.91E-01	1.91E-01	2.41E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	2.79E-01	2.25E-01	2.25E-01	4.18E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	3.20E-02	1.06E-01	1.06E-01	1.73E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	5.40E-02	9.64E-02	9.64E-02	1.88E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-1.56E-01	1.43E-01	1.44E-01	1.57E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-2.14E-02	1.13E-01	1.13E-01	1.65E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-2.61E-01	4.63E-01	4.64E-01	3.94E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.44E-01	4.10E-01	4.10E-01	1.98E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-6.10E-02	2.32E-01	2.32E-01	2.91E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	4.94E+00	1.93E+00	1.94E+00	2.32E+00	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-1.13E-02	1.17E-01	1.17E-01	1.69E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-1.93E-02	7.32E-02	7.32E-02	1.40E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.00E+00	2.15E+00	2.15E+00	3.17E+00	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.59E-01	2.16E-01	2.16E-01	3.59E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	2.63E-01	2.53E-01	2.54E-01	4.16E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	2.79E-01	2.25E-01	2.25E-01	4.18E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	-8.06E-02	4.28E-01	4.28E-01	6.51E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	1.89E-01	1.91E-01	1.92E-01	3.89E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	2.06E+00	1.83E+00	1.83E+00	2.76E+00	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	4.57E-01	3.57E-01	3.58E-01	5.63E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	9.85E-02	5.80E-01	5.80E-01	7.99E-01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-2.29E-01	2.72E-01	2.73E-01	3.46E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	6.60E-01	6.02E-01	6.03E-01	1.20E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	9.56E-02	1.49E-01	1.49E-01	2.72E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	1.18E-01	2.56E-01	2.56E-01	3.76E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	5.50E-01	5.04E-01	5.04E-01	8.23E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	6.09E-03	1.53E-01	1.53E-01	2.93E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	4.42E-02	1.92E-01	1.92E-01	3.39E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	1.08E-01	1.85E-01	1.85E-01	3.16E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.43E-01	2.17E-01	2.17E-01	2.80E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-4.02E-01	5.94E-01	5.94E-01	6.41E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.96E-01	2.88E-01	2.88E-01	3.24E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	3.25E-02	3.10E-01	3.10E-01	4.45E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	3.75E+00	2.75E+00	2.76E+00	4.13E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-5.86E-03	1.80E-01	1.80E-01	2.89E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-4.58E-02	1.83E-01	1.83E-01	2.72E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	1.87E+00	3.13E+00	3.13E+00	4.61E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.49E-01	2.75E-01	2.76E-01	4.52E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	3.03E-01	3.81E-01	3.81E-01	6.38E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	5.50E-01	5.04E-01	5.04E-01	8.23E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	6.60E-01	6.02E-01	6.03E-01	1.20E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	7.27E-02	4.86E-01	4.86E-01	7.80E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	8.48E-01	2.35E+00	2.35E+00	3.42E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	5.64E-01	5.14E-01	5.15E-01	9.45E-01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.74E-01	8.14E-01	8.14E-01	1.25E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	2.20E-01	3.75E-01	3.75E-01	7.07E-01	pCi/g

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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	-1.01E-01	4.52E-01	4.52E-01	6.82E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	4.61E-02	1.27E-01	1.27E-01	1.95E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-4.79E-01	2.35E-01	2.36E-01	2.76E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	3.06E-01	2.24E-01	2.25E-01	8.64E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-5.02E-02	1.19E-01	1.19E-01	1.80E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	-2.28E-02	1.22E-01	1.22E-01	1.40E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-8.26E-02	1.47E-01	1.47E-01	1.76E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	8.99E-03	1.26E-01	1.26E-01	1.84E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-9.75E-02	2.98E-01	2.99E-01	4.37E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	1.05E-02	3.06E-01	3.06E-01	2.20E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-5.47E-02	2.19E-01	2.19E-01	3.07E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	3.60E+00	1.44E+00	1.45E+00	1.49E+00	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-8.63E-02	1.05E-01	1.05E-01	1.45E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	2.07E-02	1.11E-01	1.11E-01	1.83E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	-1.02E-01	1.65E+00	1.65E+00	2.45E+00	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.65E-01	1.74E-01	1.74E-01	4.19E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	3.33E-01	3.14E-01	3.14E-01	5.17E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	3.06E-01	2.24E-01	2.25E-01	8.64E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	-1.01E-01	4.52E-01	4.52E-01	6.82E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-2.31E-01	3.33E-01	3.33E-01	3.93E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	4.47E+00	1.77E+00	1.79E+00	3.06E+00	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	4.44E-01	2.55E-01	2.56E-01	5.42E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	3.60E-01	5.67E-01	5.68E-01	9.00E-01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	3.12E-02	2.76E-01	2.76E-01	4.11E-01	pCi/g

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			APTIM					Purchase Order:	208345				
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			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	9.74E-01	8.72E-01	8.73E-01	1.75E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-6.90E-02	2.23E-01	2.23E-01	3.43E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-2.73E-01	3.15E-01	3.16E-01	3.92E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	2.89E-01	4.80E-01	4.81E-01	8.46E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	6.06E-02	2.11E-01	2.11E-01	3.84E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.17E-01	2.46E-01	2.46E-01	4.62E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	8.19E-03	2.49E-01	2.49E-01	3.73E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	1.18E-01	2.33E-01	2.33E-01	4.11E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-4.26E-01	8.42E-01	8.42E-01	5.74E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-2.28E-01	7.04E-01	7.05E-01	2.99E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-3.79E-02	3.38E-01	3.38E-01	4.52E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	4.61E+00	2.22E+00	2.24E+00	7.34E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	1.95E-01	1.37E-01	1.37E-01	1.71E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	2.36E-01	2.16E-01	2.17E-01	3.79E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	7.53E-01	2.78E+00	2.78E+00	3.91E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	3.55E-01	2.88E-01	2.88E-01	5.06E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	4.90E-01	4.42E-01	4.43E-01	7.89E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	2.89E-01	4.80E-01	4.81E-01	8.46E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	9.74E-01	8.72E-01	8.73E-01	1.75E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-2.91E-01	5.17E-01	5.18E-01	7.70E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	3.24E+00	2.68E+00	2.68E+00	4.09E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	1.64E-02	5.77E-01	5.77E-01	9.74E-01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.17E-01	8.51E-01	8.51E-01	1.36E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	7.53E-02	4.92E-01	4.92E-01	7.87E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	3.05E-01	5.39E-01	5.40E-01	1.00E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	6.32E-04	1.71E-01	1.71E-01	2.42E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-6.35E-01	3.25E-01	3.27E-01	3.70E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	2.99E-01	3.43E-01	3.43E-01	5.69E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	4.28E-01	2.61E-01	2.62E-01	4.02E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.35E-02	1.66E-01	1.66E-01	1.97E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-3.42E-02	8.48E-02	8.49E-02	2.06E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	6.73E-02	1.76E-01	1.76E-01	2.77E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-4.43E-02	4.04E-01	4.04E-01	5.28E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	9.54E-02	4.36E-01	4.36E-01	2.83E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-8.18E-02	2.92E-01	2.92E-01	4.20E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	6.14E+00	2.58E+00	2.60E+00	3.23E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	4.98E-03	1.29E-01	1.29E-01	2.22E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-4.54E-02	1.42E-01	1.42E-01	2.24E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	1.87E+00	2.17E+00	2.17E+00	3.47E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	5.95E-01	3.73E-01	3.75E-01	6.01E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	5.12E-01	3.17E-01	3.18E-01	7.75E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	2.99E-01	3.43E-01	3.43E-01	5.69E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	3.05E-01	5.39E-01	5.40E-01	1.00E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-3.00E-01	4.47E-01	4.48E-01	5.47E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	4.41E+00	2.41E+00	2.42E+00	4.06E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	1.85E-01	4.87E-01	4.87E-01	7.55E-01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	6.54E-01	7.68E-01	7.68E-01	1.25E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-3.34E-01	3.48E-01	3.48E-01	4.66E-01	pCi/g

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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	2.81E-01	6.08E-01	6.08E-01	1.05E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	2.06E-02	1.41E-01	1.41E-01	2.31E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	1.31E-02	2.21E-01	2.21E-01	3.18E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	4.89E-01	3.31E-01	3.32E-01	6.85E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-1.72E-02	1.51E-01	1.51E-01	2.36E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.63E-01	1.49E-01	1.49E-01	3.18E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	1.07E-01	1.59E-01	1.59E-01	2.47E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-9.59E-02	1.69E-01	1.69E-01	2.45E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-8.34E-01	7.43E-01	7.45E-01	5.30E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-4.10E-02	4.39E-01	4.39E-01	2.68E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-2.71E-01	2.62E-01	2.63E-01	3.55E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	3.14E+00	2.80E+00	2.81E+00	4.48E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	1.87E-02	1.75E-01	1.75E-01	2.43E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-7.73E-02	1.63E-01	1.63E-01	2.37E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.51E+00	2.59E+00	2.59E+00	3.87E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.85E-01	2.84E-01	2.85E-01	4.69E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	2.27E-01	3.14E-01	3.15E-01	5.23E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	4.89E-01	3.31E-01	3.32E-01	6.85E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	2.81E-01	6.08E-01	6.08E-01	1.05E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	2.95E-02	3.87E-01	3.87E-01	6.07E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	2.97E+00	1.93E+00	1.94E+00	2.96E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	-7.42E-03	4.72E-01	4.72E-01	7.45E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	-3.61E-01	6.82E-01	6.82E-01	9.95E-01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	2.46E-01	1.96E-01	1.97E-01	2.63E-01	pCi/g

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			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
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			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	3.25E-01	9.71E-01	9.71E-01	1.74E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-1.62E-01	2.93E-01	2.93E-01	4.28E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-6.19E-02	3.81E-01	3.81E-01	5.15E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	4.99E-01	5.39E-01	5.39E-01	1.02E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-3.45E-02	1.77E-01	1.77E-01	3.82E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.79E-01	2.36E-01	2.36E-01	5.01E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-2.62E-02	2.97E-01	2.97E-01	4.63E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	1.53E-01	2.86E-01	2.86E-01	5.22E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-2.34E-01	8.42E-01	8.42E-01	7.91E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	6.81E-01	7.68E-01	7.68E-01	3.91E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-4.02E-01	4.64E-01	4.65E-01	5.63E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	5.27E+00	3.30E+00	3.31E+00	4.20E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-6.92E-02	2.61E-01	2.61E-01	4.21E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-8.41E-03	2.75E-01	2.75E-01	4.21E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	3.47E+00	3.18E+00	3.18E+00	4.87E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	3.44E-01	3.38E-01	3.38E-01	5.91E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	4.58E-01	4.97E-01	4.98E-01	8.22E-01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	4.99E-01	5.39E-01	5.39E-01	1.02E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	3.25E-01	9.71E-01	9.71E-01	1.74E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-3.58E-01	6.87E-01	6.87E-01	1.04E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	5.14E+00	3.46E+00	3.47E+00	5.29E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	1.38E-01	6.64E-01	6.64E-01	1.12E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	9.69E-01	1.01E+00	1.01E+00	1.71E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	5.65E-01	6.36E-01	6.37E-01	1.30E+00	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	5.63E-01	4.16E-01	4.17E-01	8.66E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-3.04E-02	1.11E-01	1.11E-01	1.64E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	1.42E-01	2.05E-01	2.05E-01	2.97E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	3.45E-01	2.41E-01	2.42E-01	6.06E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	5.72E-02	7.67E-02	7.67E-02	1.69E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	7.68E-02	7.20E-02	7.21E-02	1.69E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	6.58E-03	3.65E-02	3.65E-02	1.61E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.44E-02	1.32E-01	1.32E-01	1.99E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-8.39E-02	4.80E-01	4.80E-01	3.98E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.87E-01	4.72E-01	4.72E-01	1.97E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	1.07E-01	2.14E-01	2.14E-01	3.05E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	4.47E+00	2.13E+00	2.14E+00	2.85E+00	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-6.97E-03	9.75E-02	9.75E-02	1.87E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-3.49E-02	1.01E-01	1.01E-01	1.52E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	1.21E+00	2.30E+00	2.30E+00	3.26E+00	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.80E-01	2.18E-01	2.18E-01	3.55E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	1.33E-01	2.94E-01	2.94E-01	4.05E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	3.45E-01	2.41E-01	2.42E-01	6.06E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	5.63E-01	4.16E-01	4.17E-01	8.66E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-2.45E-02	1.99E-01	1.99E-01	3.49E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	1.12E+00	2.06E+00	2.06E+00	2.93E+00	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	3.37E-01	3.62E-01	3.62E-01	6.52E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.97E-01	6.52E-01	6.52E-01	9.14E-01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-1.44E-01	2.40E-01	2.40E-01	3.04E-01	pCi/g

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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	1.88E-02	4.53E-01	4.53E-01	7.23E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	2.51E-02	1.39E-01	1.39E-01	1.96E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-3.83E-01	2.29E-01	2.30E-01	2.87E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	6.44E-01	2.61E-01	2.63E-01	3.42E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-6.05E-02	9.17E-02	9.17E-02	1.40E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.24E-02	1.05E-01	1.05E-01	1.45E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	2.32E-02	7.79E-02	7.79E-02	1.66E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	7.10E-03	4.74E-02	4.74E-02	1.97E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-5.78E-02	2.84E-01	2.84E-01	4.20E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-2.50E-01	3.83E-01	3.84E-01	2.11E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-1.65E-01	2.29E-01	2.29E-01	3.15E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	4.49E+00	2.14E+00	2.16E+00	2.98E+00	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-3.70E-02	1.10E-01	1.10E-01	1.71E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	6.66E-02	9.80E-02	9.81E-02	1.85E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.77E+00	1.75E+00	1.75E+00	2.89E+00	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.52E-01	1.61E-01	1.62E-01	2.84E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	3.31E-01	2.88E-01	2.88E-01	4.99E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	6.44E-01	2.61E-01	2.63E-01	3.42E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	1.88E-02	4.53E-01	4.53E-01	7.23E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	2.38E-01	3.08E-01	3.08E-01	5.00E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	4.25E+00	1.85E+00	1.87E+00	3.16E+00	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	3.94E-01	2.42E-01	2.42E-01	5.00E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.87E-01	4.70E-01	4.70E-01	9.39E-01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-1.20E-01	2.44E-01	2.44E-01	3.68E-01	pCi/g

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			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	-5.08E-02	9.69E-01	9.69E-01	1.57E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	6.74E-02	2.39E-01	2.39E-01	4.05E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	1.39E-01	3.60E-01	3.60E-01	5.26E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	-1.46E-01	6.33E-01	6.33E-01	9.39E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-1.50E-02	2.18E-01	2.18E-01	3.58E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	-1.20E-01	3.33E-01	3.33E-01	4.14E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	3.87E-01	2.46E-01	2.47E-01	4.33E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.21E-01	2.78E-01	2.78E-01	4.12E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-3.33E-01	1.01E+00	1.01E+00	9.46E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	3.56E-02	8.14E-01	8.14E-01	4.78E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	2.94E-01	3.29E-01	3.30E-01	5.83E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	5.38E+00	5.03E+00	5.03E+00	8.11E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	2.37E-02	2.74E-01	2.74E-01	4.42E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-1.76E-02	2.34E-01	2.34E-01	3.65E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	4.33E+00	4.19E+00	4.20E+00	6.30E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	4.51E-01	3.80E-01	3.81E-01	6.36E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	2.78E-01	5.28E-01	5.28E-01	8.48E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	-1.46E-01	6.33E-01	6.33E-01	9.39E-01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	-5.08E-02	9.69E-01	9.69E-01	1.57E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-7.17E-01	7.55E-01	7.56E-01	1.03E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	5.09E+00	3.05E+00	3.06E+00	4.91E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	5.22E-01	7.56E-01	7.56E-01	1.33E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	-2.29E-03	1.04E+00	1.04E+00	1.59E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-2.71E-02	5.25E-01	5.25E-01	8.31E-01	pCi/g

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EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	4.82E-01	9.14E-01	9.14E-01	1.75E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	6.09E-02	2.56E-01	2.56E-01	4.33E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-3.43E-01	3.72E-01	3.72E-01	4.62E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	1.78E-01	6.02E-01	6.02E-01	9.30E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-1.51E-01	3.08E-01	3.09E-01	4.56E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	7.36E-02	3.02E-01	3.02E-01	3.91E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	1.04E-01	2.38E-01	2.38E-01	4.25E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	2.22E-02	2.95E-01	2.95E-01	4.92E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	2.23E-01	9.14E-01	9.14E-01	7.31E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	1.09E-01	6.99E-01	6.99E-01	3.74E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-1.84E-01	4.12E-01	4.13E-01	5.22E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	5.13E+00	3.58E+00	3.59E+00	5.06E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	1.62E-02	3.08E-01	3.08E-01	5.14E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-4.35E-02	2.61E-01	2.61E-01	4.24E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.14E+00	3.38E+00	3.38E+00	4.92E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.99E-01	3.66E-01	3.66E-01	6.13E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	1.18E-01	4.85E-01	4.85E-01	8.09E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	1.78E-01	6.02E-01	6.02E-01	9.30E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	4.82E-01	9.14E-01	9.14E-01	1.75E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	5.62E-02	5.83E-01	5.83E-01	9.84E-01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	2.01E+00	3.35E+00	3.35E+00	4.84E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	5.49E-01	7.73E-01	7.74E-01	1.40E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	-1.46E-01	9.87E-01	9.87E-01	1.53E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	3.65E-02	2.88E-01	2.88E-01	7.71E-01	pCi/g

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			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	4.71E-01	3.42E-01	3.43E-01	6.82E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-6.65E-02	1.08E-01	1.08E-01	1.40E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-1.46E-01	1.75E-01	1.75E-01	2.02E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	4.08E-01	2.04E-01	2.05E-01	3.07E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	-3.59E-02	1.01E-01	1.01E-01	1.31E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.88E-02	1.12E-01	1.12E-01	1.13E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-2.92E-01	1.87E-01	1.87E-01	1.43E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	4.56E-02	1.03E-01	1.03E-01	1.77E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	1.57E-02	3.53E-01	3.53E-01	3.21E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-1.40E-01	2.42E-01	2.42E-01	1.62E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	9.82E-02	1.90E-01	1.90E-01	2.67E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	2.69E+00	1.43E+00	1.44E+00	1.95E+00	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	6.55E-02	9.19E-02	9.20E-02	1.69E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	-3.98E-02	9.26E-02	9.26E-02	1.19E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.33E+00	1.63E+00	1.63E+00	2.55E+00	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	2.54E-01	1.56E-01	1.56E-01	2.45E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	2.48E-01	1.56E-01	1.56E-01	3.27E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	4.08E-01	2.04E-01	2.05E-01	3.07E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	4.71E-01	3.42E-01	3.43E-01	6.82E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-4.42E-02	1.93E-01	1.93E-01	3.13E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	1.61E+00	1.63E+00	1.63E+00	2.36E+00	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	7.42E-02	2.96E-01	2.96E-01	4.77E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	2.30E-01	4.96E-01	4.96E-01	7.07E-01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	0.00E+00	9.16E-02	9.16E-02	2.93E-01	pCi/g

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			APTIM					Purchase Order:	208345				
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			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	1.50E+00	2.13E+00	2.13E+00	3.92E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-5.24E-01	4.03E-01	4.04E-01	9.51E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	7.31E-02	7.82E-01	7.82E-01	1.13E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	9.89E-01	1.17E+00	1.17E+00	2.06E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	4.15E-02	5.34E-01	5.34E-01	8.87E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	1.44E-01	5.08E-01	5.09E-01	9.45E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	5.91E-01	5.57E-01	5.58E-01	1.01E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.26E-01	2.96E-01	2.96E-01	1.05E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	1.02E+00	2.00E+00	2.00E+00	1.82E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	6.31E-01	1.43E+00	1.43E+00	9.21E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	2.12E-01	8.89E-01	8.89E-01	1.29E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	1.20E+00	7.44E+00	7.44E+00	1.26E+01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-4.10E-01	6.49E-01	6.50E-01	9.29E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	5.82E-01	4.79E-01	4.80E-01	8.29E-01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	8.81E+00	9.67E+00	9.68E+00	1.44E+01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	6.54E-01	7.77E-01	7.78E-01	1.29E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	1.04E-01	1.08E+00	1.08E+00	1.70E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	9.89E-01	1.17E+00	1.17E+00	2.06E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	1.50E+00	2.13E+00	2.13E+00	3.92E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-9.81E-02	1.44E+00	1.44E+00	2.25E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	6.96E+00	6.95E+00	6.96E+00	1.04E+01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	-1.88E-01	1.87E+00	1.87E+00	2.88E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	-4.40E-01	2.30E+00	2.30E+00	3.44E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-1.59E-01	1.03E+00	1.03E+00	1.55E+00	pCi/g

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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	1.57E-01	1.06E+00	1.08E+00	1.84E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-1.35E-01	2.60E-01	2.60E-01	3.87E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-1.91E-01	3.89E-01	3.89E-01	5.10E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	5.82E-01	5.87E-01	5.88E-01	9.59E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	9.69E-02	1.95E-01	1.95E-01	3.87E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	-1.47E-02	2.11E-01	2.11E-01	3.62E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	-8.29E-02	1.65E-01	1.65E-01	4.13E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	-1.05E-01	2.98E-01	2.98E-01	4.33E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-3.77E-01	8.13E-01	8.13E-01	6.77E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	-4.09E-01	8.27E-01	8.28E-01	3.35E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	-3.64E-01	4.21E-01	4.21E-01	5.07E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	5.69E+00	2.67E+00	2.68E+00	8.56E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	-3.55E-01	3.10E-01	3.11E-01	3.01E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	8.54E-02	2.74E-01	2.74E-01	4.56E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.51E+00	3.15E+00	3.15E+00	4.66E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	3.94E-01	3.59E-01	3.60E-01	6.20E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	4.40E-01	4.82E-01	4.83E-01	8.50E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	5.82E-01	5.87E-01	5.88E-01	9.59E-01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	1.57E-01	1.06E+00	1.06E+00	1.84E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-1.53E-01	6.91E-01	6.91E-01	1.07E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	4.82E+00	3.17E+00	3.18E+00	4.90E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	-1.64E-01	7.62E-01	7.62E-01	1.20E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.24E+00	9.64E-01	9.66E-01	1.68E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	1.95E-01	4.81E-01	4.82E-01	9.47E-01	pCi/g

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			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Actinium-228	EPA 901.1 Modified	7.54E-01	1.01E+00	1.01E+00	1.98E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Silver-110m	EPA 901.1 Modified	9.84E-02	2.85E-01	2.85E-01	4.37E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Americium-241	EPA 901.1 Modified	-1.15E-01	6.54E-01	6.54E-01	8.05E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Bismuth-214	EPA 901.1 Modified	5.93E-01	6.85E-01	6.86E-01	1.22E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Cobalt-58	EPA 901.1 Modified	9.36E-03	3.39E-01	3.39E-01	5.40E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Cobalt-60	EPA 901.1 Modified	-1.87E-01	3.50E-01	3.50E-01	4.94E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Cesium-134	EPA 901.1 Modified	-2.15E-01	3.88E-01	3.88E-01	4.98E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Cesium-137	EPA 901.1 Modified	1.75E-01	2.83E-01	2.83E-01	5.62E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Europium-152	EPA 901.1 Modified	8.78E-01	1.02E+00	1.02E+00	1.18E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Europium-154	EPA 901.1 Modified	-1.41E-01	7.10E-01	7.10E-01	6.14E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Europium-155	EPA 901.1 Modified	-2.41E-01	6.88E-01	6.88E-01	8.58E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Potassium-40	EPA 901.1 Modified	7.46E+00	3.61E+00	3.63E+00	3.69E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Manganese-54	EPA 901.1 Modified	-2.71E-01	3.49E-01	3.49E-01	4.59E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-C1055	Niobium-94	EPA 901.1 Modified	1.60E-01	3.37E-01	3.37E-01	4.83E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	9.07E+00	7.71E+00	7.72E+00	1.26E+01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	6.45E-01	6.01E-01	6.02E-01	9.89E-01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	9.73E-01	5.36E-01	5.39E-01	1.03E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	5.93E-01	6.85E-01	6.86E-01	1.22E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	7.54E-01	1.01E+00	1.01E+00	1.98E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	-2.02E-01	7.06E-01	7.06E-01	1.13E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	1.13E+00	6.30E+00	6.30E+00	8.53E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	1.44E+00	1.44E+00	1.45E+00	1.95E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	1.65E+00	1.75E+00	1.75E+00	2.64E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-3.68E-01	7.29E-01	7.29E-01	8.41E-01	pCi/g

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Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Actinium-228	EPA 901.1 Modified	8.23E-01	1.03E+00	1.03E+00	1.91E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Silver-110m	EPA 901.1 Modified	-1.04E-01	3.00E-01	3.00E-01	4.52E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Americium-241	EPA 901.1 Modified	-5.49E-02	3.76E-01	3.76E-01	5.37E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Bismuth-214	EPA 901.1 Modified	9.77E-01	5.53E-01	5.55E-01	1.07E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Cobalt-58	EPA 901.1 Modified	3.27E-02	2.82E-01	2.82E-01	4.50E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Cobalt-60	EPA 901.1 Modified	2.49E-01	2.79E-01	2.79E-01	4.09E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Cesium-134	EPA 901.1 Modified	1.21E-01	3.02E-01	3.02E-01	4.64E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Cesium-137	EPA 901.1 Modified	2.97E-01	2.76E-01	2.77E-01	5.20E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-152	EPA 901.1 Modified	-1.91E-01	6.07E-01	6.07E-01	9.54E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-154	EPA 901.1 Modified	2.01E-01	6.93E-01	6.93E-01	4.90E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Europium-155	EPA 901.1 Modified	6.80E-02	4.30E-01	4.30E-01	6.21E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Potassium-40	EPA 901.1 Modified	7.68E+00	3.21E+00	3.23E+00	2.43E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Manganese-54	EPA 901.1 Modified	3.23E-02	2.66E-01	2.66E-01	4.36E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Niobium-94	EPA 901.1 Modified	1.37E-02	2.70E-01	2.70E-01	4.05E-01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-210	EPA 901.1 Modified	2.37E+00	4.68E+00	4.68E+00	6.86E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-212	EPA 901.1 Modified	6.01E-01	7.05E-01	7.05E-01	1.17E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Lead-214	EPA 901.1 Modified	6.34E-01	6.81E-01	6.82E-01	1.13E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Radium-226	EPA 901.1 Modified	9.77E-01	5.53E-01	5.55E-01	1.07E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Radium-228	EPA 901.1 Modified	8.23E-01	1.03E+00	1.03E+00	1.91E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Antimony-125	EPA 901.1 Modified	4.44E-01	6.38E-01	6.38E-01	1.11E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Thorium-234	EPA 901.1 Modified	-2.57E+00	3.57E+00	3.57E+00	4.90E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Thallium-208	EPA 901.1 Modified	2.54E-01	8.06E-01	8.06E-01	1.07E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Uranium-235	EPA 901.1 Modified	7.97E-01	1.11E+00	1.11E+00	1.78E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/19/2022	22-01055	Zinc-65	EPA 901.1 Modified	-1.71E-02	5.74E-01	5.74E-01	9.61E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	1.34E+03	3.76E+01			pCi/g
22-01055-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	1.24E+03	1.26E+01	1.73E+02	3.66E+00	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-1.27E+00	2.10E+00	2.11E+00	3.68E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	8.16E-01	2.01E+00	2.02E+00	3.43E+00	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-2.98E-01	1.62E+00	1.63E+00	2.81E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-1.59E-01	1.74E+00	1.74E+00	3.01E+00	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-8.39E-02	1.84E+00	1.84E+00	3.17E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-8.90E-02	1.95E+00	1.95E+00	3.36E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	0.00E+00	1.96E+00	1.96E+00	3.38E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-7.21E-01	1.96E+00	1.96E+00	3.41E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/22/2022	22-01055	Carbon-14	EPA 520.0 Modified	-6.40E-01	1.99E+00	1.99E+00	3.45E+00	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-8.20E-01	1.98E+00	1.98E+00	3.45E+00	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-4.91E-01	2.14E+00	2.14E+00	3.71E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-4.67E-01	2.03E+00	2.04E+00	3.53E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	9.87E-01	2.00E+00	2.00E+00	3.39E+00	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-1.09E+00	1.96E+00	1.96E+00	3.43E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-1.20E+00	1.98E+00	1.99E+00	3.48E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-8.41E-01	1.65E+00	1.66E+00	2.89E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-2.72E-01	1.98E+00	1.98E+00	3.43E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/23/2022	22-01055	Carbon-14	EPA 520.0 Modified	-1.70E-01	1.86E+00	1.86E+00	3.21E+00	pCi/g

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EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621

Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.93E+02	6.94E+00			pCi/g
22-01055-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.96E+02	7.66E+00	1.34E+01	5.60E+00	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	0.00E+00	3.20E+00	3.20E+00	5.56E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	2.08E+01	3.25E+01	3.25E+01	5.50E+01	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	3.80E+01	3.32E+01	3.33E+01	5.52E+01	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	9.27E+00	3.13E+01	3.14E+01	5.38E+01	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	-7.66E+00	3.17E+01	3.17E+01	5.56E+01	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	-5.32E+00	2.95E+01	2.95E+01	5.15E+01	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.84E+00	3.08E+01	3.08E+01	5.34E+01	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.77E+00	2.97E+01	2.97E+01	5.15E+01	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.74E+01	2.97E+01	2.98E+01	5.05E+01	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	2.92E+01	3.16E+01	3.16E+01	5.29E+01	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.85E+00	3.11E+01	3.11E+01	5.38E+01	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	2.25E+01	3.22E+01	3.22E+01	5.45E+01	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	9.00E+00	3.04E+01	3.04E+01	5.23E+01	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	4.44E+01	3.02E+01	3.03E+01	4.95E+01	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	8.95E+00	3.02E+01	3.02E+01	5.20E+01	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	0.00E+00	3.09E+01	3.09E+01	5.37E+01	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	3.71E+01	3.24E+01	3.25E+01	5.39E+01	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/21/2022	22-01055	Tritium	LANL ER-210 Modified	1.86E+00	3.11E+01	3.11E+01	5.39E+01	pCi/g

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601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

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			Guy Gallelo, Jr					SDG:	22-01055				
			APTIM					Purchase Order:	208345				
			16406 US Route 224 E, Annex					Analysis Category:	ENVIRONMENTAL				
			Findlay, OH 45840					Sample Matrix:	SO				
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-01055-01	LCS	KNOWN	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	1.50E+03	4.49E+01			pCi/g
22-01055-01	LCS	SPIKE	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	1.56E+03	1.29E+01	9.24E+01	2.93E+00	pCi/g
22-01055-02	MBL	BLANK	01/18/22 00:00	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	0.00E+00	1.64E+00	1.64E+00	2.84E+00	pCi/g
22-01055-03	DUP	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-7.01E+00	2.06E+00	2.10E+00	3.95E+00	pCi/g
22-01055-04	DO	501513-9C-PA-01	01/14/22 14:05	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-3.72E+00	2.20E+00	2.21E+00	4.00E+00	pCi/g
22-01055-05	TRG	501513-9C-PA-02	01/14/22 11:18	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-6.59E+00	1.69E+00	1.74E+00	3.30E+00	pCi/g
22-01055-06	TRG	501513-9C-PA-03	01/14/22 14:10	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-8.15E+00	2.39E+00	2.44E+00	4.59E+00	pCi/g
22-01055-07	TRG	501513-9C-PA-04	01/14/22 15:54	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-1.04E+00	1.74E+00	1.75E+00	3.07E+00	pCi/g
22-01055-08	TRG	501513-9C-PA-05	01/17/22 09:30	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-4.31E-01	1.46E+00	1.46E+00	2.55E+00	pCi/g
22-01055-09	TRG	501513-9C-PA-06	01/17/22 10:15	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-1.59E+00	1.31E+00	1.32E+00	2.35E+00	pCi/g
22-01055-10	TRG	501513-9C-PA-07	01/14/22 10:50	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-1.33E+00	1.66E+00	1.66E+00	2.94E+00	pCi/g
22-01055-11	TRG	501513-9C-PA-08	01/14/22 16:15	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-3.22E-01	1.64E+00	1.64E+00	2.85E+00	pCi/g
22-01055-12	TRG	501513-9C-PA-09	01/17/22 10:30	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	1.32E+00	1.54E+00	1.55E+00	2.60E+00	pCi/g
22-01055-13	TRG	501513-9C-PA-10	01/14/22 14:35	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	1.50E-01	1.55E+00	1.55E+00	2.67E+00	pCi/g
22-01055-14	TRG	501513-9C-PA-11	01/17/22 10:45	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-2.50E-01	1.28E+00	1.28E+00	2.22E+00	pCi/g
22-01055-15	TRG	501513-9C-PA-12	01/14/22 16:05	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	8.32E-01	1.74E+00	1.74E+00	2.95E+00	pCi/g
22-01055-16	TRG	501513-9C-PA-13	01/17/22 13:00	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-2.12E+00	1.75E+00	1.75E+00	3.14E+00	pCi/g
22-01055-17	TRG	501513-9C-PA-14	01/17/22 14:15	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-2.12E+00	1.75E+00	1.76E+00	3.14E+00	pCi/g
22-01055-18	TRG	501513-9C-PA-15	01/14/22 13:58	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-9.03E-01	1.66E+00	1.66E+00	2.91E+00	pCi/g
22-01055-19	TRG	501513-9C-PA-16	01/17/22 10:50	1/18/2022	1/21/2022	22-01055	Nickel-63	ASTM 3500-Ni Modified	-8.37E-01	1.69E+00	1.69E+00	2.97E+00	pCi/g

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EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 Fax 865/483-4621



22-01055

22-010548-1-18-22

CHAIN OF CUSTODY

Ref. Document # 5010513-COC-037

Page 1 of 4

REC'D JAN 18 2021 21:38

Project Number: 501513

Project Name / Location: SSSB Decomisioning

Purchase Order #: 208345

Project Contact: Michael Carr

(Name & phone #)

Send Report To: Guy Gallelo

Phone/Fax Number: guy.gallelo@aptim.com

Address:

City:

Shipment Date: 1/18/2022

Waybill/Airbill Number: 7757 7518 8017

Lab Destination: Eberline-Cakridge

Lab Contact Name / ph. #: Mike McDougall 865-481-0863 ext 128

Sampler's Name(s): BR, EC, JP

Collection Information

Sample ID Number	Sample Description	Date	Time	G/C	Matrix	# of containers	Container type	Preservative					Gross Alpha / Beta	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spectroscopy	Carbon-14 (C-14)	Turn Around Time Requested
								HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice						
501513-9C-SM-01	MARSAME Wipe; Tank 9C #1	1-13-2022	1030	G	WP	1	Vial							X				7-BD
501513-9C-SM-01	MARSAME Wipe; Tank 9C #1	1-13-2022	1028	G	WP	1	Vial								X			7-BD
501513-9C-PA-01	MARSAME Paint Sample; Tank 9C #1	1-14-2022	1405	C	CP	1	Bag							X	X	X	X	7-BD
501513-9C-SM-02	MARSAME Wipe; Tank 9C #2	1-13-2022	1052	G	WP	1	Vial							X				7-BD
501513-9C-SM-02	MARSAME Wipe; Tank 9C #2	1-13-2022	1050	G	WP	1	Vial								X			7-BD
501513-9C-PA-02	MARSAME Paint Sample; Tank 9C #2	1-14-2022	1118	C	CP	1	Bag							X	X	X	X	7-BD
501513-9C-SM-03	MARSAME Wipe; Tank 9C #3	1-13-2022	1020	G	WP	1	Vial							X				7-BD
501513-9C-SM-03	MARSAME Wipe; Tank 9C #3	1-13-2022	1019	G	WP	1	Vial								X			7-BD
501513-9C-PA-03	MARSAME Paint Sample; Tank 9C #3	1-14-2022	1410	C	CP	1	Bag							X	X	X	X	7-BD

Special Instructions:

QC/Data Package Level Required:

I II III IV/Project Specific:

G/C Codes

C = Composite

G = Grab

Matrix Codes

DW = Drinking Water

SO = Soil

GW = Ground Water

SL = Sludge

WW = Waste Water

CP = Chip Samples

SW = Surface Water

WP = Wipe Samples

LIQ = Other Liquid

SOL = Other Solid

AS = Air Sample

SED = Sediment

Relinquished By:

John Peden

Date: 1-17-2022

Time: 1445

Received By:

Bryon Rogers

Date: 1-17-2022

Time: 1445

Relinquished By:

Bryon Rogers

Date: 1-17-2022

Time: 1612

Received By:

Kathleen Spencer

Date: 1-18-22

Time: 1016

Relinquished By:

Date:

Time:

Received By:

Date:

Time:



COC Continuation Page

COC Ref. Document # 5010513-COC-037

Page 2 of 4

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

		Collection Information			Matrix	# of containers	Container type	Preservative						Gross Alpha	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spec	Carbon-14 (C-14)					Turn Around
Sample ID Number	Sample Description	Date	Time	G/C				HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice											
501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1146	G	WP	1	Vial							X									7-BD
501513-9C-SM-04	MARSAME Wipe; Tank 9C #4	1-13-2022	1145	G	WP	1	Vial								X								7-BD
501513-9C-PA-04	MARSAME Paint Sample; Tank 9C #4	1-14-2022	1554	C	CP	1	Bag							X	X	X	X						7-BD
501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial							X									7-BD
501513-9C-SM-05	MARSAME Wipe; Tank 9C #5	1-13-2022	1410	G	WP	1	Vial								X								7-BD
501513-9C-PA-05	MARSAME Paint Sample; Tank 9C #5	1-17-2022	0930	C	CP	1	Bag							X	X	X	X						7-BD
501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1339	G	WP	1	Vial							X									7-BD
501513-9C-SM-06	MARSAME Wipe; Tank 9C #6	1-13-2022	1336	G	WP	1	Vial								X								7-BD
501513-9C-PA-06	MARSAME Paint Sample; Tank 9C #6	1-17-2022	1015	C	CP	1	Bag							X	X	X	X						7-BD
501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1114	G	WP	1	Vial							X									7-BD
501513-9C-SM-07	MARSAME Wipe; Tank 9C #7	1-13-2022	1112	G	WP	1	Vial								X								7-BD
501513-9C-PA-07	MARSAME Paint Sample; Tank 9C #7	1-14-2022	1050	C	CP	1	Bag							X	X	X	X						7-BD
501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial							X									7-BD
501513-9C-SM-08	MARSAME Wipe; Tank 9C #8	1-13-2022	1430	G	WP	1	Vial								X								7-BD
501513-9C-PA-08	MARSAME Paint Sample; Tank 9C #8	1-14-2022	1615	C	CP	1	Bag							X	X	X	X						7-BD
501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1350	G	WP	1	Vial							X									7-BD
501513-9C-SM-09	MARSAME Wipe; Tank 9C #9	1-13-2022	1349	G	WP	1	Vial								X								7-BD
501513-9C-PA-09	MARSAME Paint Sample; Tank 9C #9	1-17-2022	1030	C	CP	1	Bag							X	X	X	X						7-BD

Rec 1-18-22 1016



COC Continuation Page

COC Ref. Document # 5010513-COC-037

Page 3 of 4

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

Sample ID Number	Sample Description	Collection Information			Matrix	# of containers	Container type	Preservative						Gross Alpha	Tritium (H3)	Nickel-63 (Ni-63)	Gamma Spec	Carbon-14 (C-14)					Turn Around
		Date	Time	G/C				HCL	NaOH	HNO ₃	H ₂ SO ₄	Ice											
501513-9C-SM-10	MARSAME Wipe; Tank 9C #10	1-13-2022	1139	G	WP	1	Vial								X								7-BD
501513-9C-SM-10	MARSAME Wipe; Tank 9C #10	1-13-2022	1137	G	WP	1	Vial									X							7-BD
501513-9C-PA-10	MARSAME Paint Sample; Tank 9C #10	1-14-2022	1435	C	CP	1	Bag								X	X	X	X					7-BD
501513-9C-SM-11	MARSAME Wipe; Tank 9C #11	1-13-2022	1400	G	WP	1	Vial								X								7-BD
501513-9C-SM-11	MARSAME Wipe; Tank 9C #11	1-13-2022	1400	G	WP	1	Vial									X							7-BD
501513-9C-PA-11	MARSAME Paint Sample; Tank 9C #11	1-17-2022	1045	C	CP	1	Bag								X	X	X	X					7-BD
501513-9C-SM-12	MARSAME Wipe; Tank 9C #12	1-13-2022	1505	G	WP	1	Vial								X								7-BD
501513-9C-SM-12	MARSAME Wipe; Tank 9C #12	1-13-2022	1505	G	WP	1	Vial									X							7-BD
501513-9C-PA-12	MARSAME Paint Sample; Tank 9C #12	1-14-2022	1605	C	CP	1	Bag								X	X	X	X					7-BD
501513-9C-SM-13	MARSAME Wipe; Tank 9C #13	1-13-2022	1321	G	WP	1	Vial								X								7-BD
501513-9C-SM-13	MARSAME Wipe; Tank 9C #13	1-13-2022	1319	G	WP	1	Vial									X							7-BD
501513-9C-PA-13	MARSAME Paint Sample; Tank 9C #13	1-17-2022	1300	C	CP	1	Bag								X	X	X	X					7-BD
501513-9C-SM-14	MARSAME Wipe; Tank 9C #14	1-13-2022	1327	G	WP	1	Vial								X								7-BD
501513-9C-SM-14	MARSAME Wipe; Tank 9C #14	1-13-2022	1327	G	WP	1	Vial									X							7-BD
501513-9C-PA-14	MARSAME Paint Sample; Tank 9C #14	1-17-2022	1415	C	CP	1	Bag								X	X	X	X					7-BD
501513-9C-SM-15	MARSAME Wipe; Tank 9C #15	1-13-2022	1445	G	WP	1	Vial								X								7-BD
501513-9C-SM-15	MARSAME Wipe; Tank 9C #15	1-13-2022	1445	G	WP	1	Vial									X							7-BD
501513-9C-PA-15	MARSAME Paint Sample; Tank 9C #15	1-14-2022	1358	C	CP	1	Bag								X	X	X	X					7-BD

Rec'd 1-18-22 @ 1016



APTIM

COC Ref. Document # 5010513-COC-037

Page 4 of 4

Project Number: 501513

Shipment Date: 1/18/2022

Project Name / Location: SSSB Mobile, AL

REC'D JAN 18 2022

~~22-01054~~

[illegible]

See SS 1-18-72 (C) 1016,



Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 22-01055

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	Y	N	<u>N/A</u>

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: Randolph Spencer

DATE: 1-18-22

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	H0003	1	pCi	g	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
H-3		101.61%	6.83%	100.00%	3.60%	1.93E+02	6.94E+00	1.96E+02	1.34E+01	H-5a	3.98E+03	3.60E+00	1.08E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

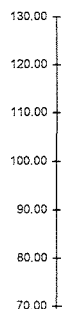
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
H-3	0.72	58.34	3.80E+01	3.33E+01	2.08E+01	3.25E+01	1.02	OK				NA	OK

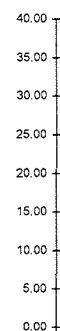
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	H0003	1	pCi	g	APTIM Federal Services LLC

LCS % Recovery



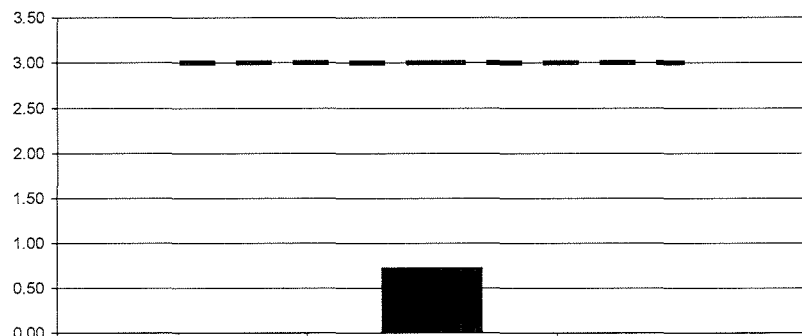
	H-3
- Lower Error	91.18
- Upper Error	112.05
◆ %R	101.61
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	H-3
- Lower Error	90.91
- Upper Error	25.77
◆ RPD	58.34
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
H-3	0.00	0.72	0.00
UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	C0014	1	pCi	g	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
C-14		92.28%	13.96%	100.00%	2.80%	1.34E+03	3.76E+01	1.24E+03	1.73E+02	C-3a	2.91E+03	2.80E+00	1.02E+00

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

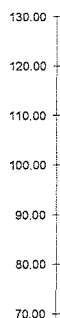
Replicate Sample

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
C-14	0.84	429.96	-2.98E-01	1.63E+00	8.16E-01	2.02E+00	0.92	OK				NA	OK

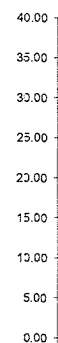
WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	C0014	1	pCi	g	APTIM Federal Services LLC

LCS % Recovery



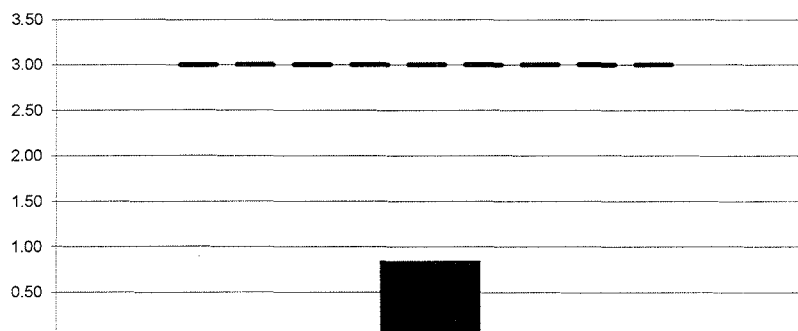
	C-14
- Lower Error	75.52
- Upper Error	109.04
◆ %R	92.28
- LCL	75
- Mean	100
- UCL	125

Replicate Sample RPD



	C-14
- Lower Error	1941.17
- Upper Error	-1081.25
◆ RPD	429.96
- CL	35

Normalized Difference



	LCS ND	REP ND	MS ND
■ C-14	0.00	0.84	0.00
■ UCL	3	3	3

No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	Ni063	1	pCi	g	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
NI-63		104.06%	5.94%	100.00%	3.00%	1.50E+03	4.49E+01	1.56E+03	9.24E+01	Ni-3	2.11E+04	3.00E+00	1.58E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

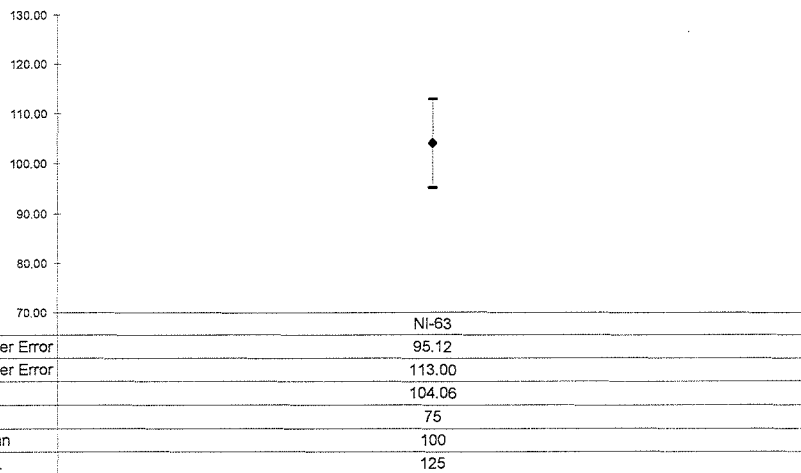
Replicate Sample

QC Summary

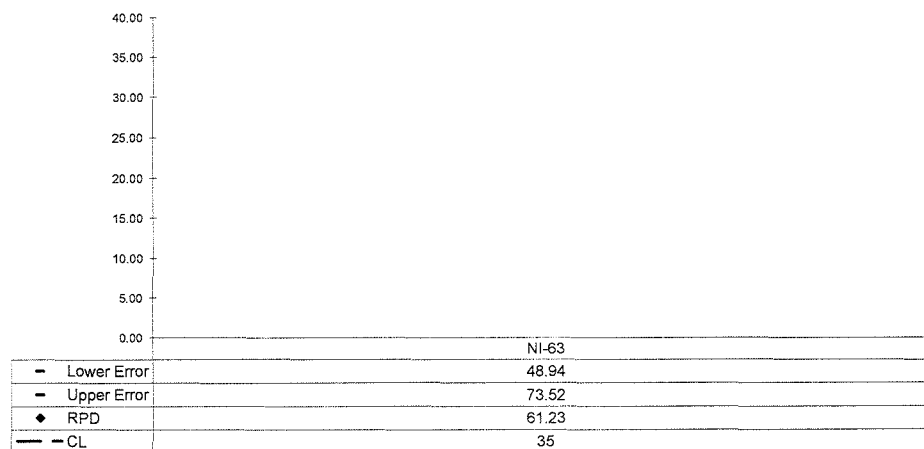
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
NI-63	2.11	61.23	-3.72E+00	2.21E+00	-7.01E+00	2.10E+00	1.04	OK				NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	Ni063	1	pCi	g	APTIM Federal Services LLC

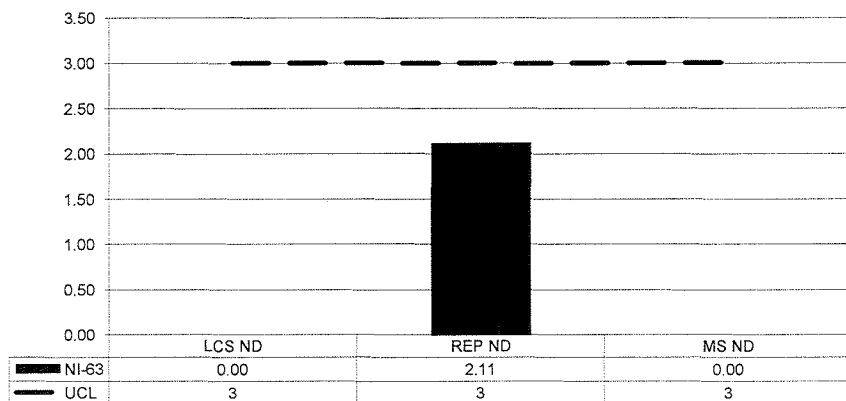
LCS % Recovery



Replicate Sample RPD



Normalized Difference



No Matrix Spike

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	Gamma	1	pCi	g	APTIM Federal Services LLC

Laboratory Control Sample

Analyte		LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
CO-60		103.28%	7.64%	100.00%	3.90%	2.66E+02	1.04E+01	2.75E+02	2.10E+01	GAS-2001	2.66E+02	1.04E+01	3.68E+02
CS-137		107.53%	11.03%	100.00%	4.10%	1.62E+02	6.66E+00	1.75E+02	1.93E+01	GAS-2001	1.62E+02	6.66E+00	3.68E+02

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

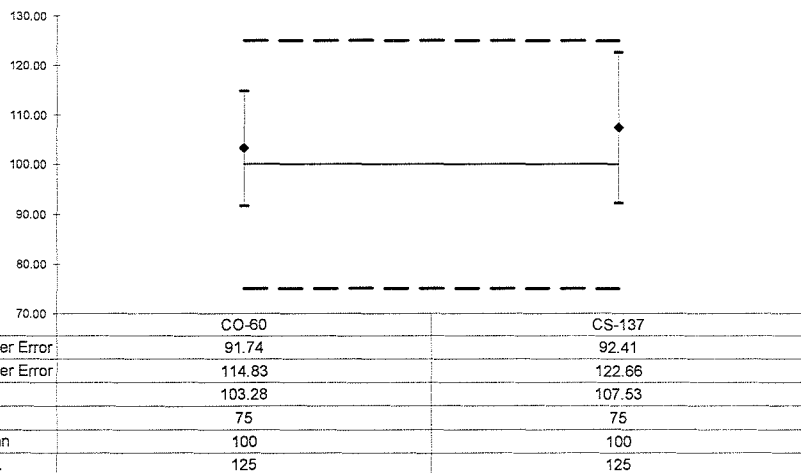
Replicate Sample

QC Summary

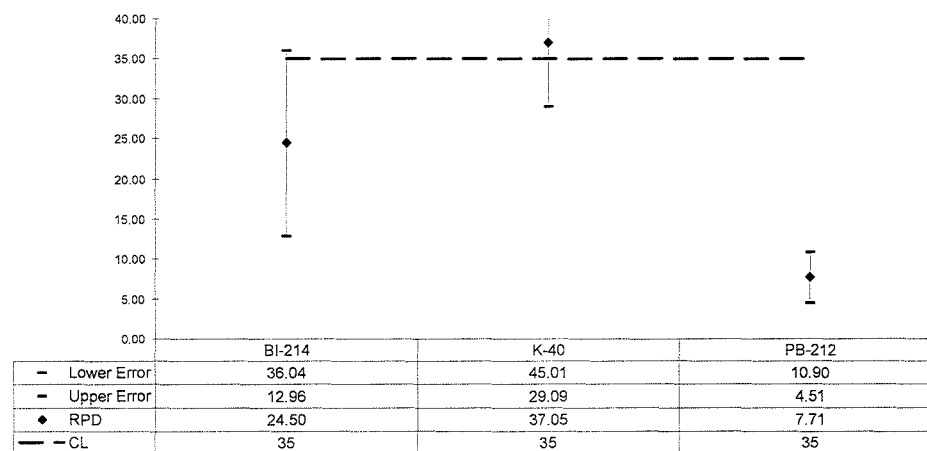
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R		MS % R	MS ND	Rep RPD	Rep ND
BI-214	0.36	24.50	2.79E-01	2.25E-01	2.18E-01	2.43E-01	1.03	OK		<CS-137	BI-214>	NA	
K-40	1.19	37.05	4.94E+00	1.94E+00	3.39E+00	1.64E+00	1.08	OK		<CO-60	K-40>	NA	OK
PB-212	0.13	7.71	2.59E-01	2.16E-01	2.40E-01	1.98E-01					PB-212>	NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-01055	Gamma	1	pCi	g	APTIM Federal Services LLC

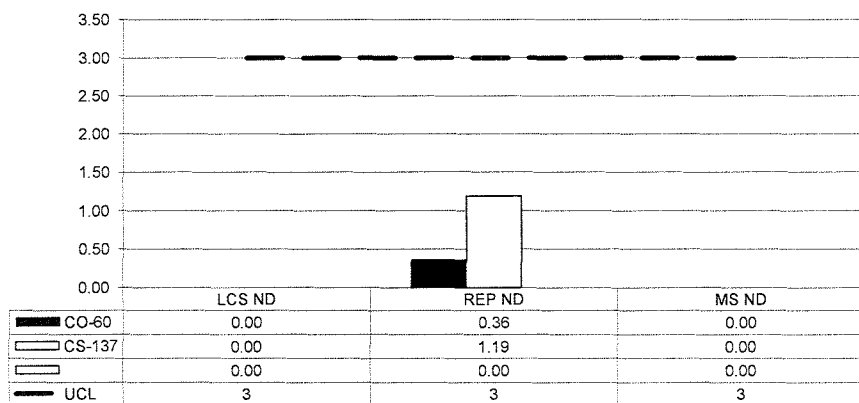
LCS % Recovery



Replicate Sample RPD



Normalized Difference



No Matrix Spike