Naval Facilities Engineering Command Southwest
BRAC PMO West
San Diego, CA

Air Monitoring Summary Report

March-April 2022

Remedial Action Parcel E-2, Phase III
Hunters Point Naval Shipyard
San Francisco, CA

June 2022

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Prepared for:

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Contract Number: N69450-14-D-0018; Task Order No. 0002

1.0 INTRODUCTION

This Air Monitoring Summary Report (AMSR) was prepared by KEMRON Environmental Services, Inc. (KEMRON), for the United States Department of the Navy (Navy) under Southwest Environmental Multiple Award Contract (EMAC) Number N69450-14-D-0018, Contract Task Order (CTO)-0002.

This AMSR documents the Parcel E-2 air monitoring activities conducted by KEMRON and Leisnoi KEMRON Joint Venture (LKJV) at Hunters Point Naval Shipyard (HPNS) in accordance with the Final Dust Control Plan (DCP), included as Appendix D of the *Remedial Action Work Plan, Final Cover, Wetlands, and Landfill Gas Control and Containment System Remedial Action Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California* (KEMRON, 2018). The Remedial Action Work Plan (RAWP) incorporated the requirements from the *Final Design Basis Report, Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California (ERRG, 2014).*

This AMSR includes the air monitoring activities conducted from 28 February 2022 to 28 April 2022. KEMRON remobilized heavy equipment and crew in late February after demobilizing in December 2021 due to extremely wet weather conditions. Earth moving activities and air monitoring resumed on 28 February 2022. Intrusive work (excavating anchor trench) requiring monitoring for radionuclides began 4 April 2022. This report provides the following:

- Air monitoring locations
- Equipment and test methods used to analyze air monitoring samples
- Air monitoring sample result comparison criteria

2.0 AIR MONITORING LOCATIONS

Air monitoring stations were established in upwind and downwind location relative to active earthmoving activities. Based on meteorological data, the prevalent wind direction at HPNS is predominantly from west to the east. Locations of the air monitoring stations are presented on Figure 1.

Wind direction was monitored daily during the reporting period presented in this report using a wind sock. Atmospheric parameters were recorded at the beginning and end of each work day and included in KEMRON's daily quality control reports. Monitoring stations remained stationary while sampling was conducted.

3.0 EQUIPMENT AND ANALYTICAL METHODS

Each air monitoring station included three different pieces of equipment as follows:

1. Asbestos was sampled using SKC Quick Take 30 sample pump.
2. Particulate matter less than 10 microns in diameter (PM10) was sampled using Tisch Environmental High Volume Air Sampler, Model 6070V.
3. Total Suspended Particulates (TSP), which was also analyzed for arsenic, lead and manganese, was sampled using Tisch Environmental High Volume Air Sampler, Model 5170V.
4. Radionuclides of concern (ROCs) were analyzed onsite using a calibrated Ludlum Model 3030 alpha/beta sample counter.

During this period, liner installation activities were conducted on clean imported fill soil as well as in radiologically controlled areas (RCAs) around the anchor trenches. Therefore, samples for radionuclides were also collected during this reporting per the approved DCP. Analytical methods used were in accordance with the Final DCP/RAWP (KEMRON, 2018) and Field Change Request 002 (FCR-002, KEMRON, 2020).

Asbestos was analyzed in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400, from the *NIOSH Manual of Analytical Methods* (NIOSH, 1994). Method 7400 requires that samples were collected on three-piece cellulose ester filters fitted with conductive cowlings at a sampling rate of between 0.5 liters per minute (L/min) and 16 L/min. Each sample was collected over a period not to exceed 24 hours.

PM10 was sampled in accordance with the U.S. Environmental Protection Agency (EPA) reference sampling method for PM10, described in 40 CFR 50, Subpart J. Each sample was collected on a filter over a period not to exceed 24 hours. The filter was then weighted to determine the amount of PM10 collected.

TSP was sampled with a high-volume (39 to 60 cubic feet per minute [cfm]) air sampler in accordance with EPA reference sampling method for TSP, described in Title 40 Code of Federal Regulations (CFR), Part 50, Subpart B. Each sample was collected on a filter over a period not to exceed 24 hours. The filter was then weighted to determine the amount of TSP collected. Once the filter weight was determined, the sample was analyzed for manganese, arsenic, and lead in accordance with SW-846 Method 6020 per FCR-002 (KEMRON 2020).

The ROCs, Radium-226, Strontium-90, Cesium-137, and Cobalt-60 were sampled and analyzed per the revised Radiation Protection Plan (RPP, KEMRON, 2022) provided in Attachment 1.

4.0 EVALUATION OF AIR MONITORING DATA

Analytical results from air monitoring samples were compared with the threshold criteria provided below:

- 0.5 milligrams per cubic meter (mg/m^3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).

- 200 micrograms per cubic meter (ug/m^3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m^3 for arsenic (Cal/OSHA).
- 1.5 ug/m^3 for lead, 30-day time-weighted average (TWA) (California Ambient Air Quality Standard).
- 50 ug/m^3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).
- ROC air monitoring of total activity was calculated and compared to the most restrictive derived airborne concentration (DAC) values presented in the RPP and included in Attachment 1.

The downwind air results are compared to the upwind results to identify the contribution of site activities to the threshold criteria.

5.0 AIR MONITORING RESULTS

Remediation action activities conducted during this reporting period did not result in site contributions in excess of the established threshold criteria. Please refer to the attached tables for asbestos, metals, PM10 and TSP results and Attachment 1 for the results of the ROCs.

6.0 REFERENCES

ERRG, 2014. *Final Design Basis Report, Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California.* August.

KEMRON Environmental Services, Inc., 2018. *Final Remedial Action Work Plan*, *Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California.* December.

KEMRON Environmental Services, Inc., 2020. *Field Change Request 002, Hunters Point Naval Shipyard Parcel E-2 Remedial Action, San Francisco, California.* December.

KEMRON Environmental Services, Inc., 2022. *Radiation Protection Plan*, *Parcel E-2, Hunters Point Naval Shipyard, San Francisco, California.* May.

Figure 1

Potential Downwind Air Sampling Location

Potential Upwind Air Sampling Location

Wind Sock

Proposed Hot Spot Excavation by Tier:

Tier 1 - Soil concentrations 10 times > remediation goals at near-shore locations (within tidally influenced zone) with corresponding groundwater concentrations consistently exceeding aquatic water quality goals

Tier 2 - Soil concentrations 10 times > remediation goals at near-shore locations (within tidally influenced zone) with corresponding grab groundwater concentrations exceeding aquatic water quality goals

Tier 3 - Soil concentrations 100 times > remediation goals

Tier 4 - Grab groundwater concentrations (within Panhandle Area tidally influenced zone) exceeding aquatic water quality goals at locations with no corresponding soil data

Tier 5 - Source of volatile organic compounds that impact groundwater in adjacent Parcel E

East Adjacent Area

Panhandle Area

Shoreline Area

Landfill Area

Previous Excavated Areas:

Metal Slag

PCB Hot Spot Area, Phase 1 (completed, 2005-2007)

PCB Hot Spot Area, Phase 2 (completed, 2010-2012)

Ship Shielding Area (completed, 2012)

Radiological Screening Area

Storm Line (Above Groundwater)

Storm Lin (Below Groundwater)

Groundwater Flow

Area with Temporary BMPs

Nearshore Slurry Wall

Catch Basin Discharge Point

Meteorological Station

HDPE Barrier Wall and Extraction Trench

Grouted Section of HDPE Barrier Wall

Sheet Pile Wall

UCSF Property

Parcel E-2

Other Parcel Boundary

Building

Road

NAVFAC Naval Facilities Engineering Command

Parcel E-2 Final Cover Installation
Hunters Point Naval Shipyard
San Francisco, California

Figure 1
Air Monitoring Locations

G:\ArcGIS\Navy\HPS\PROJECTS\Parcel_E\Parcel_E2\Air_Sampling_Map.mxd 2/5/2014 [14:05 PM] EANDERSON, ITSI

Tables

	Sample Date	2/28/2022		2/28/2022		Site Contribution (E2DW minus E2UW)	Limit
	StationName	E2UW		E2DW			
	ReportingUnits	Result	Qualifier	Result	Qualifier		
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0043	U	0.0013	J	-0.003	5
Manganese	ug/m3	0.036		0.071		0.035	200
Lead	ug/m3	0.0096		0.016		0.006	1.5
Particulate Matter as PM 10	ug/m3	53		40		-13.000	50
Total Suspended Particulates	mg/m3	0.0719		0.1313		0.059	0.5

	Sample Date	3/1/2022		3/1/2022		Site Contribution (E2DW minus E2UW)	Limit
	StationName	E2UW		E2DW			
	ReportingUnits	Result	Qualifier	Result	Qualifier		
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.003	U	0.0032	U	0.000	5
Manganese	ug/m3	0.025		0.033		0.008	200
Lead	ug/m3	0.0095		0.0089		-0.001	1.5
Particulate Matter as PM 10	ug/m3	33		26		-7.000	50
Total Suspended Particulates	mg/m3	0.0438		0.0556		0.012	0.5

	Sample Date	3/2/2022		3/2/2022		Site Contribution (E2DW minus E2UW)	Limit
	StationName	E2UW		E2DW			
	ReportingUnits	Result	Qualifier	Result	Qualifier		
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0027	U	0.0029	U	0.000	5
Manganese	ug/m3	0.024		0.022		-0.002	200
Lead	ug/m3	0.0074		0.0068		-0.001	1.5
Particulate Matter as PM 10	ug/m3	30		26		-4.000	50
Total Suspended Particulates	mg/m3	0.0502		0.0472		-0.003	0.5

	Sample Date	3/3/2022		3/3/2022		Site Contribution (E2DW minus E2UW)	Limit
	StationName	E2UW		E2DW			
	ReportingUnits	Result	Qualifier	Result	Qualifier		
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0049	U	0.0054	U	0.001	5
Manganese	ug/m3	0.019		0.012		-0.007	200
Lead	ug/m3	0.0067		0.0043		-0.002	1.5
Particulate Matter as PM 10	ug/m3	23		10		-13.000	50
Total Suspended Particulates	mg/m3	0.0332		0.0472		0.014	0.5

	Sample Date	3/7/2022		3/7/2022		Site Contribution (E2DW minus E2UW)	Limit
	StationName	E2UW		E2DW			
	Reporting Units	Result	Qualifier	Result	Qualifier		
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0029	U	0.001	J	-0.002	5
Manganese	ug/m3	0.017		0.051		0.034	200
Lead	ug/m3	0.0052		0.0082		0.003	1.5
Particulate Matter as PM 10	ug/m3	27		50		23.000	50
Total Suspended Particulates	mg/m3	0.0324		0.098		0.066	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	3/8/2022		3/8/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0026	U	0.0006	J	-0.002	5
Manganese	ug/m3	0.023		0.041		0.018	200
Lead	ug/m3	0.0076		0.012		0.004	1.5
Particulate Matter as PM 10	ug/m3	37		35		-2.000	50
Total Suspended Particulates	mg/m3	0.0472		0.0698		0.023	0.5

	Sample Date	3/9/2022		3/9/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0008	J	0.0008	J	0.000	5
Manganese	ug/m3	0.052		0.042		-0.010	200
Lead	ug/m3	0.016		0.0093		-0.007	1.5
Particulate Matter as PM 10	ug/m3	76		42		-34.000	50
Total Suspended Particulates	mg/m3	0.1061		0.1061		0.000	0.5

	Sample Date	3/10/2022		3/10/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0026	U	0.0028	U	0.000	5
Manganese	ug/m3	0.038		0.03		-0.008	200
Lead	ug/m3	0.0084		0.0049		-0.004	1.5
Particulate Matter as PM 10	ug/m3	40		16		-24.000	50
Total Suspended Particulates	mg/m3	0.0688		0.0511		-0.018	0.5

	Sample Date	3/14/2022		3/14/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.003	U	0.0008	J	-0.002	5
Manganese	ug/m3	0.034		0.062		0.028	200
Lead	ug/m3	0.013		0.015		0.002	1.5
Particulate Matter as PM 10	ug/m3	47		83		36.000	50
Total Suspended Particulates	mg/m3	0.0685		0.1227		0.054	0.5

	Sample Date	3/15/2022		3/15/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0055	U	0.0061	U	0.001	5
Manganese	ug/m3	0.019		0.027		0.008	200
Lead	ug/m3	0.0065		0.0067		0.000	1.5
Particulate Matter as PM 10	ug/m3	16		14		-2.000	50
Total Suspended Particulates	mg/m3	0.0266		0.0483		0.022	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	3/16/2022		3/16/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.003	U	0.000	5
Manganese	ug/m3	0.027		0.043		0.016	200
Lead	ug/m3	0.01		0.014		0.004	1.5
Particulate Matter as PM 10	ug/m3	46		32		-14.000	50
Total Suspended Particulates	mg/m3	0.0589		0.1033		0.044	0.5

	Sample Date	3/17/2022		3/17/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.003	U	0.000	5
Manganese	ug/m3	0.024		0.027		0.003	200
Lead	ug/m3	0.01		0.0058		-0.004	1.5
Particulate Matter as PM 10	ug/m3	36		25		-11.000	50
Total Suspended Particulates	mg/m3	0.0529		0.0719		0.019	0.5

	Sample Date	3/18/2022		3/18/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0056	U	0.0058	U	0.000	5
Manganese	ug/m3	0.022		0.011		-0.011	200
Lead	ug/m3	0.0068		0.0035		-0.003	1.5
Particulate Matter as PM 10	ug/m3	39		26		-13.000	50
Total Suspended Particulates	mg/m3	0.036		0.0247		-0.011	0.5

	Sample Date	3/21/2022		3/21/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.003	U	0.0034	U	0.000	5
Manganese	ug/m3	0.039		0.032		-0.007	200
Lead	ug/m3	0.016		0.012		-0.004	1.5
Particulate Matter as PM 10	ug/m3	67		49		-18.000	50
Total Suspended Particulates	mg/m3	0.0883		0.1066		0.018	0.5

	Sample Date	3/22/2022		3/22/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.0029	U	0.000	5
Manganese	ug/m3	0.024		0.04		0.016	200
Lead	ug/m3	0.0089		0.0098		0.001	1.5
Particulate Matter as PM 10	ug/m3	39		34		-5.000	50
Total Suspended Particulates	mg/m3	0.0515		0.091		0.040	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	3/23/2022		3/23/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.0029	U	0.000	5
Manganese	ug/m3	0.034		0.021		-0.013	200
Lead	ug/m3	0.011		0.0048		-0.006	1.5
Particulate Matter as PM 10	ug/m3	27		26		-1.000	50
Total Suspended Particulates	mg/m3	0.0454		0.0463		0.001	0.5

	Sample Date	3/24/2022		3/24/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0029	U	0.003	U	0.000	5
Manganese	ug/m3	0.043		0.044		0.001	200
Lead	ug/m3	0.011		0.01		-0.001	1.5
Particulate Matter as PM 10	ug/m3	45		21		-24.000	50
Total Suspended Particulates	mg/m3	0.0683		0.0886		0.020	0.5

	Sample Date	3/29/2022		3/29/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.003	U	0.0008	J	-0.002	5
Manganese	ug/m3	0.025		0.044		0.019	200
Lead	ug/m3	0.0076		0.0077		0.000	1.5
Particulate Matter as PM 10	ug/m3	29		18		-11.000	50
Total Suspended Particulates	mg/m3	0.0461		0.0881		0.042	0.5

	Sample Date	3/30/2022		3/30/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0008	J	0.003	U	0.002	5
Manganese	ug/m3	0.05		0.029		-0.021	200
Lead	ug/m3	0.016		0.0067		-0.009	1.5
Particulate Matter as PM 10	ug/m3	62		20		-42.000	50
Total Suspended Particulates	mg/m3	0.0991		0.0819		-0.017	0.5

	Sample Date	3/31/2022		3/31/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0027	U	0.0011	J	-0.002	5
Manganese	ug/m3	0.033		0.064		0.031	200
Lead	ug/m3	0.0085		0.016		0.008	1.5
Particulate Matter as PM 10	ug/m3	50		27		-23.000	50
Total Suspended Particulates	mg/m3	0.0748		0.1267		0.052	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	4/1/2022		4/1/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0035	U	0.004	U	0.001	5
Manganese	ug/m3	0.021		0.031		0.010	200
Lead	ug/m3	0.0049		0.0076		0.003	1.5
Particulate Matter as PM 10	ug/m3	49		34		-15.000	50
Total Suspended Particulates	mg/m3	0.0568		0.0943		0.038	0.5

	Sample Date	4/4/2022		4/4/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0008	J	0.0015	J	0.001	5
Manganese	ug/m3	0.063		0.088		0.025	200
Lead	ug/m3	0.016		0.024		0.008	1.5
Particulate Matter as PM 10	ug/m3	74		37		-37.000	50
Total Suspended Particulates	mg/m3	0.1048		0.1387		0.034	0.5

	Sample Date	4/5/2022		4/5/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0026	U	0.003	U	0.000	5
Manganese	ug/m3	0.038		0.04		0.002	200
Lead	ug/m3	0.011		0.0091		-0.002	1.5
Particulate Matter as PM 10	ug/m3	50		25		-25.000	50
Total Suspended Particulates	mg/m3	0.0738		0.0788		0.005	0.5

	Sample Date	4/6/2022		4/6/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.0029	U	0.000	5
Manganese	ug/m3	0.017		0.019		0.002	200
Lead	ug/m3	0.0036		0.0043		0.001	1.5
Particulate Matter as PM 10	ug/m3	37		27		-10.000	50
Total Suspended Particulates	mg/m3	0.0293		0.0331		0.004	0.5

	Sample Date	4/7/2022		4/7/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0006	J	0.0013	J	0.001	5
Manganese	ug/m3	0.038		0.087		0.049	200
Lead	ug/m3	0.0092		0.016		0.007	1.5
Particulate Matter as PM 10	ug/m3	50		39		-11.000	50
Total Suspended Particulates	mg/m3	0.0572		0.11		0.053	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	4/12/2022		4/12/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0025	U	0.0029	U	0.000	5
Manganese	ug/m3	0.04		0.042		0.002	200
Lead	ug/m3	0.01		0.013		0.003	1.5
Particulate Matter as PM 10	ug/m3	44		33		-11.000	50
Total Suspended Particulates	mg/m3	0.0731		0.0855		0.012	0.5

	Sample Date	4/13/2022		4/13/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0025	U	0.0029	U	0.000	5
Manganese	ug/m3	0.023		0.016		-0.007	200
Lead	ug/m3	0.007		0.0045		-0.003	1.5
Particulate Matter as PM 10	ug/m3	31		14		-17.000	50
Total Suspended Particulates	mg/m3	0.0438		0.0377		-0.006	0.5

	Sample Date	4/15/2022		4/15/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.004	U J1	0.0042	U	0.000	5
Manganese	ug/m3	0.016	J1	0.011		-0.005	200
Lead	ug/m3	0.0066	J1	0.0047		-0.002	1.5
Particulate Matter as PM 10	ug/m3	24		16		-8.000	50
Total Suspended Particulates	mg/m3	0.0313		0.0272		-0.004	0.5

	Sample Date	4/18/2022		4/18/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0028	U	0.003	U	0.000	5
Manganese	ug/m3	0.014		0.02		0.006	200
Lead	ug/m3	0.0045		0.0052		0.001	1.5
Particulate Matter as PM 10	ug/m3	21		15		-6.000	50
Total Suspended Particulates	mg/m3	0.0286		0.0299		0.001	0.5

	Sample Date	4/19/2022		4/19/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0032	U	0.0031	U	0.000	5
Manganese	ug/m3	0.019		0.024		0.005	200
Lead	ug/m3	0.017		0.011		-0.006	1.5
Particulate Matter as PM 10	ug/m3	21		21		0.000	50
Total Suspended Particulates	mg/m3	0.0306		0.0439		0.013	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

	Sample Date	4/20/2022		4/20/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0029	U	0.0032	U	0.000	5
Manganese	ug/m3	0.022		0.034		0.012	200
Lead	ug/m3	0.0094		0.0079		-0.002	1.5
Particulate Matter as PM 10	ug/m3	36		28		-8.000	50
Total Suspended Particulates	mg/m3	0.0459		0.0462		0.000	0.5

	Sample Date	4/25/2022		4/25/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0008	J	0.0008	J	0.000	5
Manganese	ug/m3	0.06		0.047		-0.013	200
Lead	ug/m3	0.014		0.018		0.004	1.5
Particulate Matter as PM 10	ug/m3	73		35		-38.000	50
Total Suspended Particulates	mg/m3	0.1074		0.1159		0.009	0.5

	Sample Date	4/26/2022		4/26/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0031	U	0.0009	J	-0.002	5
Manganese	ug/m3	0.048		0.057		0.009	200
Lead	ug/m3	0.016		0.021		0.005	1.5
Particulate Matter as PM 10	ug/m3	69		37		-32.000	50
Total Suspended Particulates	mg/m3	0.1021		0.1126		0.011	0.5

	Sample Date	4/27/2022		4/27/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0007	J	0.0009	J	0.000	5
Manganese	ug/m3	0.06		0.063		0.003	200
Lead	ug/m3	0.02		0.019		-0.001	1.5
Particulate Matter as PM 10	ug/m3	76		65		-11.000	50
Total Suspended Particulates	mg/m3	0.1098		0.1251		0.015	0.5

	Sample Date	4/28/2022		4/28/2022			
	StationName	E2UW		E2DW		Site Contribution (E2DW	
	Reporting Units	Result	Qualifier	Result	Qualifier	minus E2UW)	Limit
Asbestos	fibers/cc	0.001	U	0.001	U	0.000	0.1
Arsenic	ug/m3	0.0033	U	0.0017	U	-0.002	5
Manganese	ug/m3	0.048		0.033		-0.015	200
Lead	ug/m3	0.016		0.011		-0.005	1.5
Particulate Matter as PM 10	ug/m3	78		19		-59.000	50
Total Suspended Particulates	mg/m3	0.0784		0.0715		-0.007	0.5

Notes:
Qualifier of U indicates nondetect. Qualifier of J indicates estimated concentration.
E2UW = Parcel E2, Upwind Location E2DW = Parcel E2, Downwind Location
Analytical results are compared to the following standards presented in the Dust Control Plan (KEMRON, 2018) :
- 0.5 milligrams per cubic meter (mg/m3) for TSP (the Basewide HPNS level chosen to minimize overall permissible dust releases from the site).
- 200 micrograms per cubic meter (ug/m3) for manganese (California Occupational Safety and Health Administration [Cal/OSHA] permissible exposure limit [PEL]).
- 5 ug/m3 for arsenic (Cal/OSHA).
- 1.5 ug/m3 time-weighted average (TWA) 30-days for lead (California Ambient Air Quality Standard).
- 50 ug/m3 for PM10, 24-hour TWA (California Ambient Air Quality Standard).
- 0.1 fiber/cubic centimeter for asbestos, 8-hour TWA (Cal/OSHA).

Attachment 1

Air Monitoring of Radionuclides of Concern

May 27, 2022

HPNS Parcel E-2

Subject: Radiological Air Sampling Summary April 2022

As required by the scope of work, continuous air monitoring for radiological ROCs was performed during intrusive activities at Parcel E-2. Sampling was performed at eight (8) locations.

- Upwind on the Parcel, collocated with KEMRON Station E2UW
- Downwind on the Parcel, collocated with KEMRON Station E2DW
- Two monitors on the upwind side of an RCA
- Two monitors on the downwind side of an RCA
- One monitor on the RCA heavy equipment operator
- One monitor on the RCA laborer

Samples were collected over the course of one work week while intrusive activities were being performed. Samples were analyzed onsite using a calibrated Ludlum Model 3030 alpha/beta sample counter. Daily stop/start times and flow rates were recorded. With that information, total activity was calculated and compared to the most restrictive DAC values presented in the Radiation Protection Plan.

The highest activity sample results observed over the duration are presented below:

Table 1: Maximum Sample Results

Sample ID	Location	Activity (µCi/ml)	Activity as Percent of DAC	MDC (µCi/ml)	MDC as Percent of DAC	Relevant DAC (µCi/ml)
AS-LB-220420	RCA Laborer	4.30e-14	8.6%	4.63e-14	9.3%	Th-230: 5e-13
AS-P2-220428	RCA Perimeter Downwind	3.22e-12	0.04%	7.73e-13	0.01%	Sr-90: 8e-9

Air sample summary tables are presented in Attachment A and complete radiological records of each sample are included as Attachment B.

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Attachment 1A
Air Sample Summary Tables
April 2022

Location: Downwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-DW-220407	3.11E-15	0.6%	3.90E-15	0.78%	6.35E-14	0.001%	1.02E-13	0.001%
AS-DW-220415	3.29E-15	0.7%	1.89E-15	0.38%	6.85E-14	0.001%	1.15E-13	0.001%
AS-DW-220420	3.34E-15	0.7%	3.37E-15	0.67%	6.97E-14	0.001%	-5.40E-14	-0.001%
AS-DW-220428	2.49E-15	0.5%	1.46E-15	0.29%	5.15E-14	0.001%	9.80E-14	0.001%
Location: Upwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-UW-220407	3.11E-15	0.6%	8.80E-16	0.18%	6.35E-14	0.001%	8.06E-14	0.001%
AS-UW-220415	3.37E-15	0.7%	9.81E-16	0.20%	7.00E-14	0.001%	9.12E-14	0.001%
AS-UW-220420	3.38E-15	0.7%	3.72E-15	0.74%	7.05E-14	0.001%	8.09E-14	0.001%
AS-UW-220428	3.30E-15	0.7%	1.00E-15	0.20%	6.84E-14	0.001%	1.22E-13	0.002%
Location: Laborer (Breathing Zone)								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-LB-220407	4.52E-14	9.0%	2.49E-14	4.98%	9.94E-13	0.012%	8.78E-13	0.011%
AS-LB-220415	4.93E-14	9.9%	2.15E-14	4.30%	1.07E-12	0.013%	3.49E-13	0.004%
AS-LB-220420	4.63E-14	9.3%	4.30E-14	8.60%	1.11E-12	0.014%	-1.73E-12	-0.022%
AS-LB-220428	3.43E-14	6.9%	2.62E-14	5.24%	7.71E-13	0.010%	1.19E-12	0.015%
Location: Operator (Breathing Zone)								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-OP-220407	4.45E-14	8.9%	1.79E-14	3.58%	1.07E-12	0.013%	-1.57E-12	-0.020%
AS-OP-220415	4.85E-14	9.7%	5.60E-15	1.12%	1.05E-12	0.013%	-1.09E-13	-0.001%
AS-OP-220420	4.71E-14	9.4%	3.73E-14	7.46%	1.13E-12	0.014%	2.04E-13	0.003%
AS-OP-220428	3.43E-14	6.9%	7.15E-15	1.43%	7.71E-13	0.010%	2.20E-12	0.028%
Location: Perimeter #1 RCA Downwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-P1-220407	4.44E-14	8.9%	4.16E-14	8.32%	1.07E-12	0.013%	-8.97E-13	-0.011%
AS-P1-220415	4.79E-14	9.6%	1.69E-14	3.38%	1.05E-12	0.013%	1.01E-12	0.013%
AS-P1-220420	5.02E-14	10.0%	3.16E-14	6.32%	1.09E-12	0.014%	-7.73E-12	-0.097%
AS-P1-220428	3.72E-14	7.4%	-4.78E-16	-0.10%	7.79E-13	0.010%	9.23E-13	0.012%
Location: Perimeter #2 RCA Downwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-P2-220407	4.46E-14	8.9%	4.18E-14	8.36%	1.07E-12	0.013%	-6.98E-13	-0.009%
AS-P2-220415	4.75E-14	9.5%	1.06E-14	2.12%	1.04E-12	0.013%	1.53E-12	0.019%
AS-P2-220420	4.71E-14	9.4%	2.45E-14	4.90%	1.13E-12	0.014%	-2.49E-12	-0.031%
AS-P2-220428	3.44E-14	6.9%	2.39E-15	0.48%	7.73E-13	0.010%	3.22E-12	0.040%
Location: Perimeter #3 RCA Upwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-P3-220407	4.43E-14	8.9%	3.26E-14	6.52%	1.06E-12	0.013%	-6.37E-13	-0.008%
AS-P3-220415	4.81E-14	9.6%	3.33E-14	6.66%	1.05E-12	0.013%	1.32E-12	0.017%
AS-P3-220420	4.71E-14	9.4%	-7.73E-15	-1.55%	1.13E-12	0.014%	-1.26E-12	-0.016%
AS-P3-220428	3.43E-14	6.9%	2.38E-14	4.76%	7.71E-13	0.010%	2.13E-12	0.027%
Location: Perimeter #4 RCA Upwind								
Sample ID	Alpha (Th-232 DAC: 5E-13 µCi/mL)				Beta-Gamma (Sr-90 DAC: 8E-9 µCi/mL)			
	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC	MDC (µCi/mL)	MDC as a % of the DACeff	Activity (µCi/mL)	Acitivity as % of the DAC
AS-P4-220407	4.54E-14	9.1%	2.49E-14	4.98%	9.97E-13	0.012%	9.57E-13	0.012%
AS-P4-220415	4.77E-14	9.5%	4.22E-14	8.44%	1.04E-12	0.013%	2.00E-12	0.025%
AS-P4-220420	4.71E-14	9.4%	-1.29E-15	-0.26%	1.13E-12	0.014%	-1.31E-12	-0.016%
AS-P4-220428	3.43E-14	6.9%	2.15E-14	4.30%	7.71E-13	0.010%	2.19E-12	0.027%

Attachment 1B
Air Sample Records
April 2022

PermaFix® environmental services
A Nuclear Services and Waste Management Company

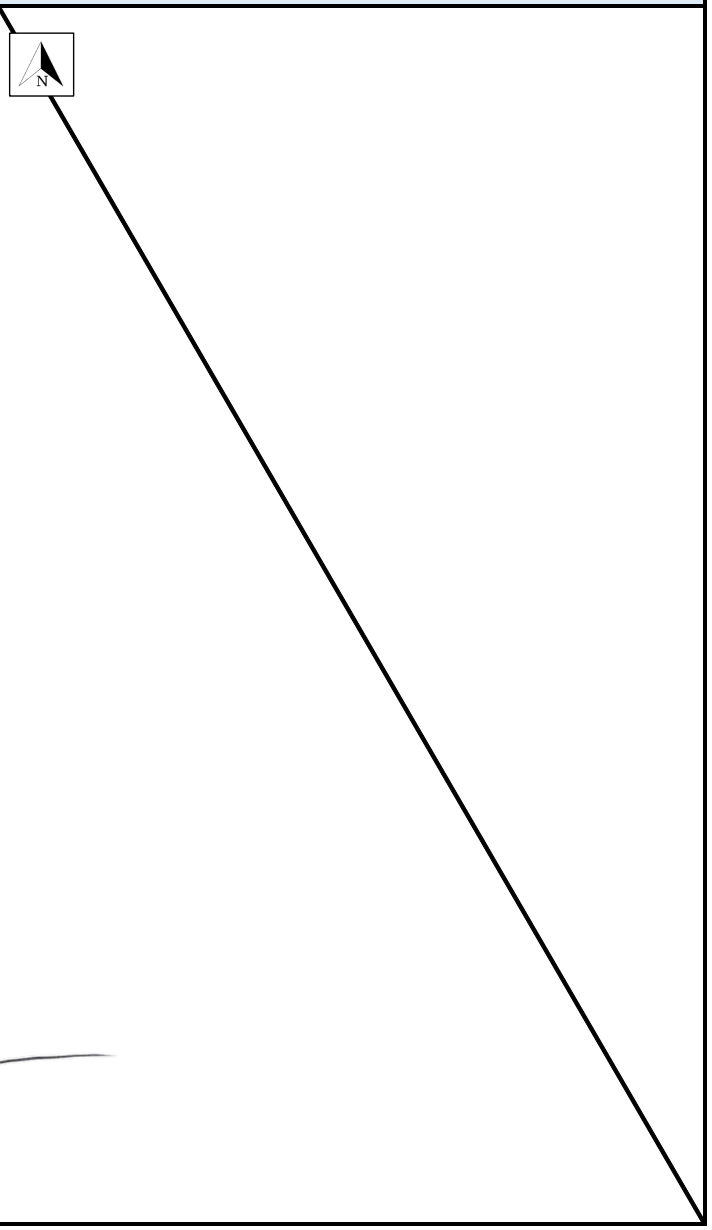
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Downwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-DW-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	2827	10/12/2022	60	2020

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/11/2022	5/8/2022		4/11/2022	5/8/2022	
Gross Sample Counts	16	20		2636	2388	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.27	0.33		43.93	39.80	
Gross Background Counts	8	58		2355	21283	
Background Count Time (min)	60	600		60	600	
Background CPM	0.13	0.10		39.25	35.47	
Net Sample CPM	0.13	0.24		4.68	4.33	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.21E+08	1.21E+08		1.21E+08	1.21E+08	
LLD (counts)	16	11		229	162	
MDC (µCi/mL)	4.44E-15	3.11E-15		8.96E-14	6.35E-14	
MDC as a % of the DAC_{eff}	0.8886%	0.6219%		0.0011%	0.0008%	
Activity (µCi/mL)	2.20E-15	3.90E-15		1.10E-13	1.02E-13	
Activity as a % of the DAC	0.4399%	0.7808%		0.0014%	0.0013%	
Estimated Weekly Dose [mrem]	4.40E-01	7.81E-01		1.38E-03	1.27E-03	

Approximate sampler location denoted below with △



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount _____

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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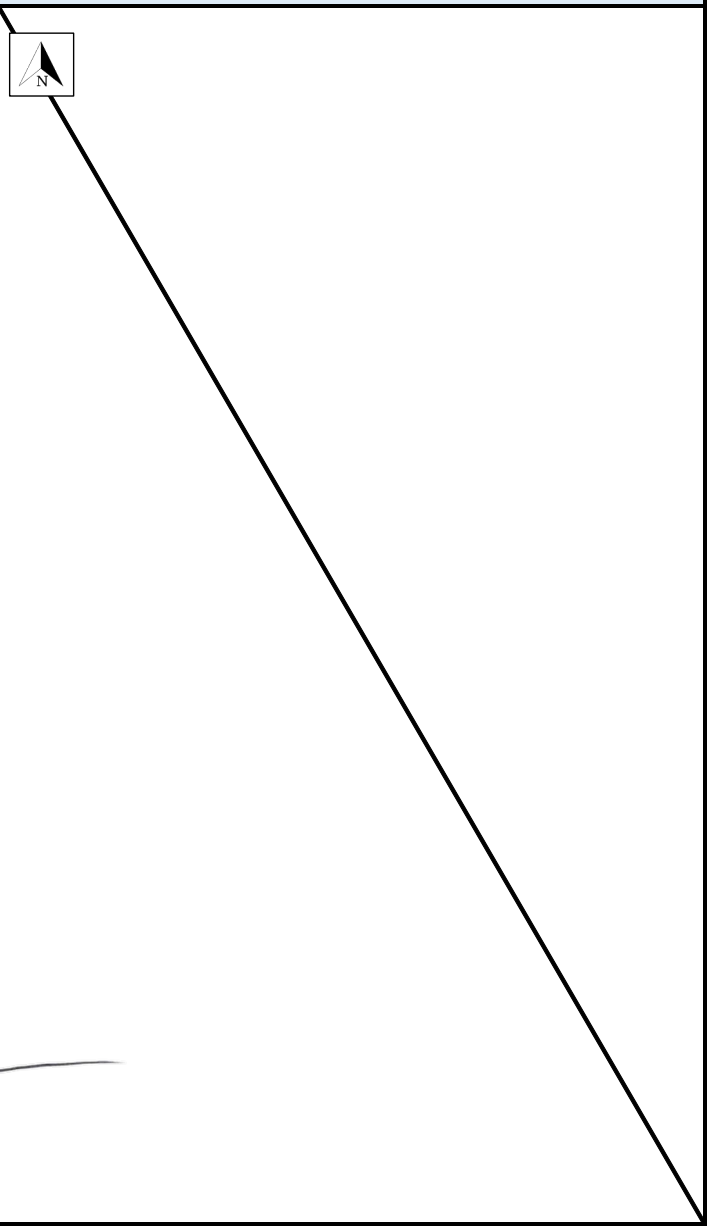
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Downwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-DW-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	2827	10/12/2022	60	1795

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/19/2022	5/7/2022		4/19/2022	5/7/2022	
Gross Sample Counts	13	11		2353	2210	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.22	0.18		39.22	36.83	
Gross Background Counts	4	49		2256	19487	
Background Count Time (min)	60	600		60	600	
Background CPM	0.07	0.08		37.60	32.48	
Net Sample CPM	0.15	0.10		1.62	4.36	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.08E+08	1.08E+08		1.08E+08	1.08E+08	
LLD (counts)	12	11		224	155	
MDC (µCi/mL)	3.81E-15	3.29E-15		9.87E-14	6.85E-14	
MDC as a % of the DAC_{eff}	0.7615%	0.6583%		0.0012%	0.0009%	
Activity (µCi/mL)	2.78E-15	1.89E-15		4.28E-14	1.15E-13	
Activity as a % of the DAC	0.5569%	0.3775%		0.0005%	0.0014%	
Estimated Weekly Dose [mrem]	5.57E-01	3.77E-01		5.34E-04	1.44E-03	

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount

Reviewed By/Date Chris Weddermann 5/25/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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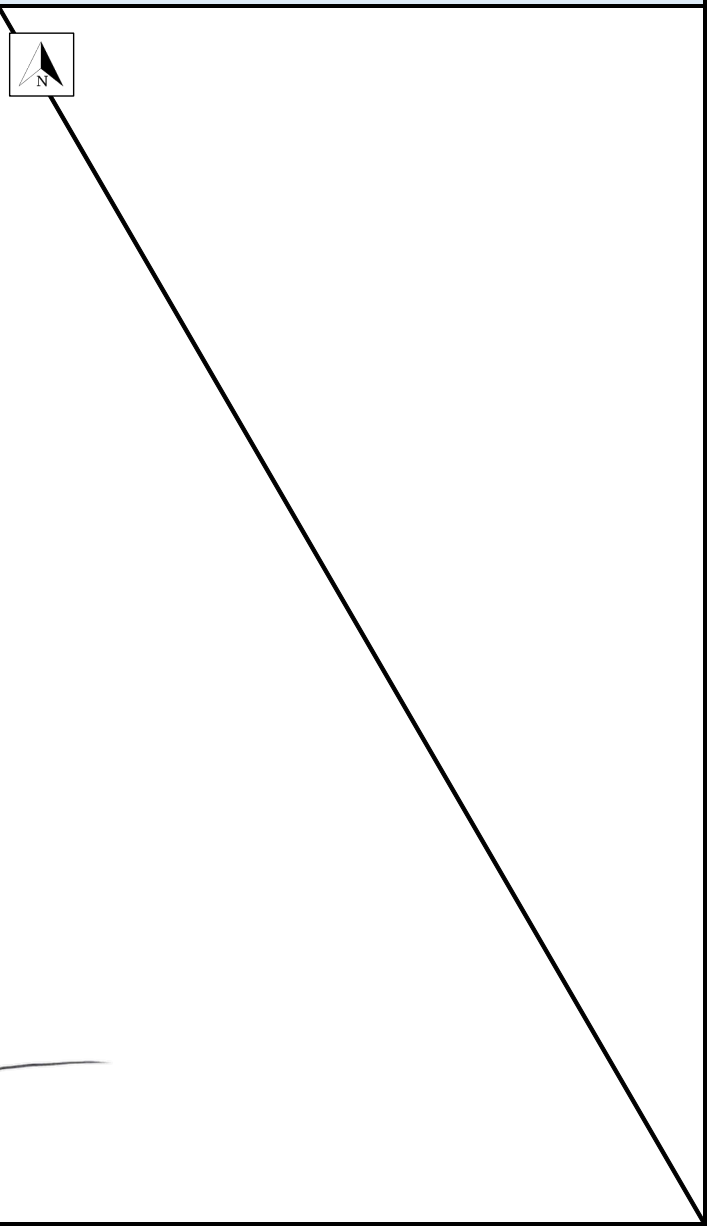
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Downwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-DW-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	2827	10/12/2022	60	1795

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/25/2022	5/6/2022		4/25/2022	5/6/2022	
Gross Sample Counts	20	16		1976	1901	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.33	0.27		32.93	31.68	
Gross Background Counts	7	51		2352	20235	
Background Count Time (min)	60	600		60	600	
Background CPM	0.12	0.09		39.20	33.73	
Net Sample CPM	0.22	0.18		-6.27	-2.04	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.08E+08	1.08E+08		1.08E+08	1.08E+08	
LLD (counts)	15	11		229	158	
MDC (µCi/mL)	4.74E-15	3.34E-15		1.01E-13	6.97E-14	
MDC as a % of the DAC_{eff}	0.9474%	0.6678%		0.0013%	0.0009%	
Activity (µCi/mL)	4.02E-15	3.37E-15		-1.66E-13	-5.40E-14	
Activity as a % of the DAC	0.8044%	0.6745%		-0.0021%	-0.0007%	
Estimated Weekly Dose [mrem]	8.04E-01	6.74E-01		-2.07E-03	-6.75E-04	

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount _____

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL **TB =** BKG Count Time **TS =** Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB) **RB =** BKG Count Rate **FE =** Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF **SAF =** Self Absorption Factor (0.998) **Sr90** 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF **Th232** 5E-13 µCi/mL

PermaFix® environmental services
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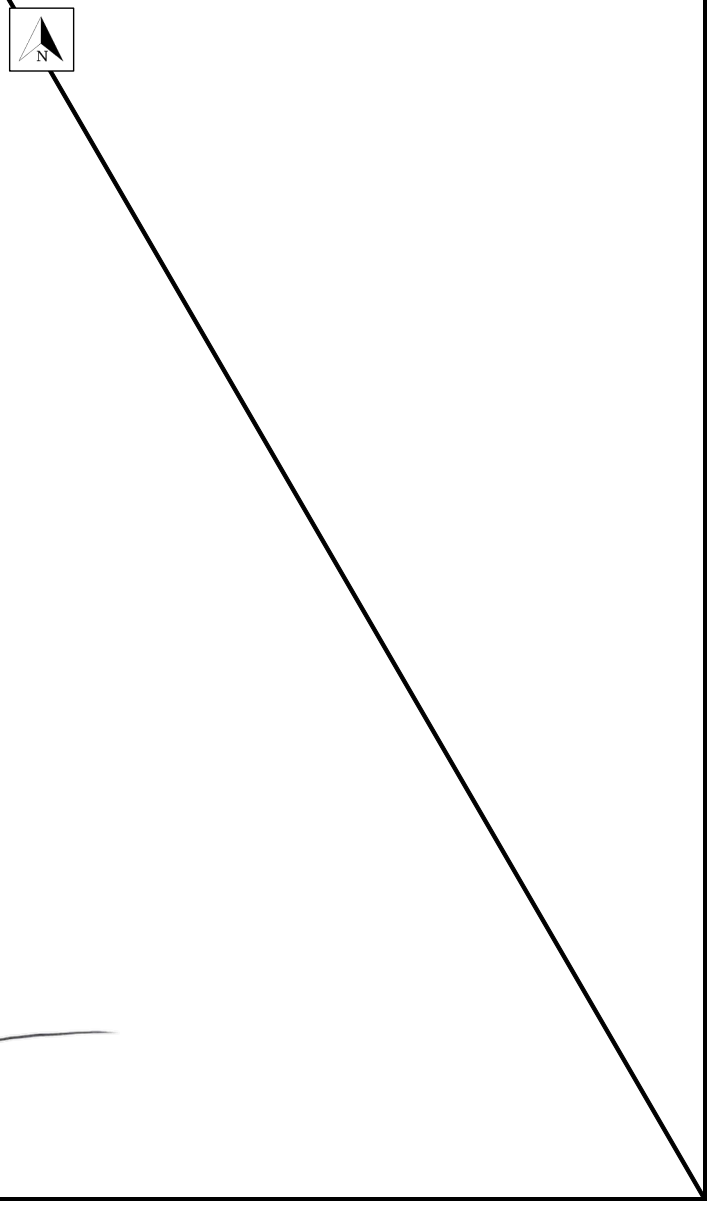
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Downwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-DW-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	2827	10/12/2022	60	2355

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	5/3/2022	5/9/2022		5/3/2022	5/9/2022	
Gross Sample Counts	13	11		2214	2192	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.22	0.18		36.90	36.53	
Gross Background Counts	3	48		2160	19002	
Background Count Time (min)	60	600		60	600	
Background CPM	0.05	0.08		36.00	31.67	
Net Sample CPM	0.17	0.10		0.90	4.86	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.41E+08	1.41E+08		1.41E+08	1.41E+08	
LLD (counts)	11	11		219	153	
MDC (µCi/mL)	2.61E-15	2.49E-15		7.36E-14	5.15E-14	
MDC as a % of the DAC_{eff}	0.5216%	0.4981%		0.0009%	0.0006%	
Activity (µCi/mL)	2.36E-15	1.46E-15		1.81E-14	9.80E-14	
Activity as a % of the DAC	0.4717%	0.2924%		0.0002%	0.0012%	
Estimated Weekly Dose [mrem]	4.72E-01	2.92E-01		2.27E-04	1.23E-03	

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount _____

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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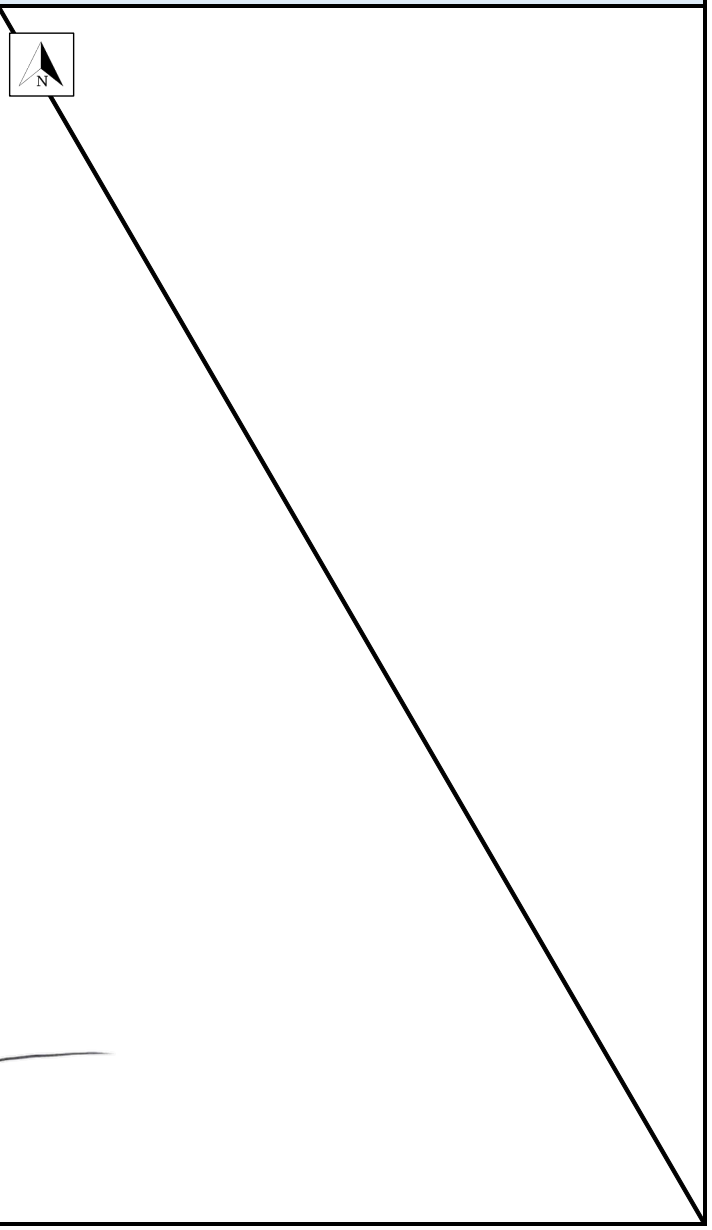
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Labor	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-LB-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	20080601021	3/10/2023	3	1875

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/19/2022	4/11/2022	5/8/2022	5/19/2022
Gross Sample Counts	19	13	20	2790	2296	4372
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.32	0.22	0.17	46.50	38.27	36.43
Gross Background Counts	8	58	58	2355	21283	20819
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.10	39.25	35.47	34.70
Net Sample CPM	0.18	0.12	0.07	7.25	2.80	1.74
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.63E+06	5.63E+06	5.63E+06	5.63E+06	5.63E+06	5.63E+06
LLD (counts)	16	11	15	229	162	236
MDC (µCi/mL)	9.57E-14	6.70E-14	4.52E-14	1.93E-12	1.37E-12	9.94E-13
MDC as a % of the DAC_{eff}	19.1464%	13.4002%	9.0488%	0.0241%	0.0171%	0.01%
Activity (µCi/mL)	6.52E-14	4.27E-14	2.49E-14	3.67E-12	1.42E-12	8.78E-13
Activity as a % of the DAC	13.0328%	8.5306%	4.9762%	0.0459%	0.0177%	0.01%
Estimated Weekly Dose [mrem]	1.30E+01	8.53E+00	4.98E+00	4.59E-02	1.77E-02	1.10E-02

Approximate sampler location denoted below with ▲



Comments: Final count results below 10% of most conservative DACs. Recounts performed to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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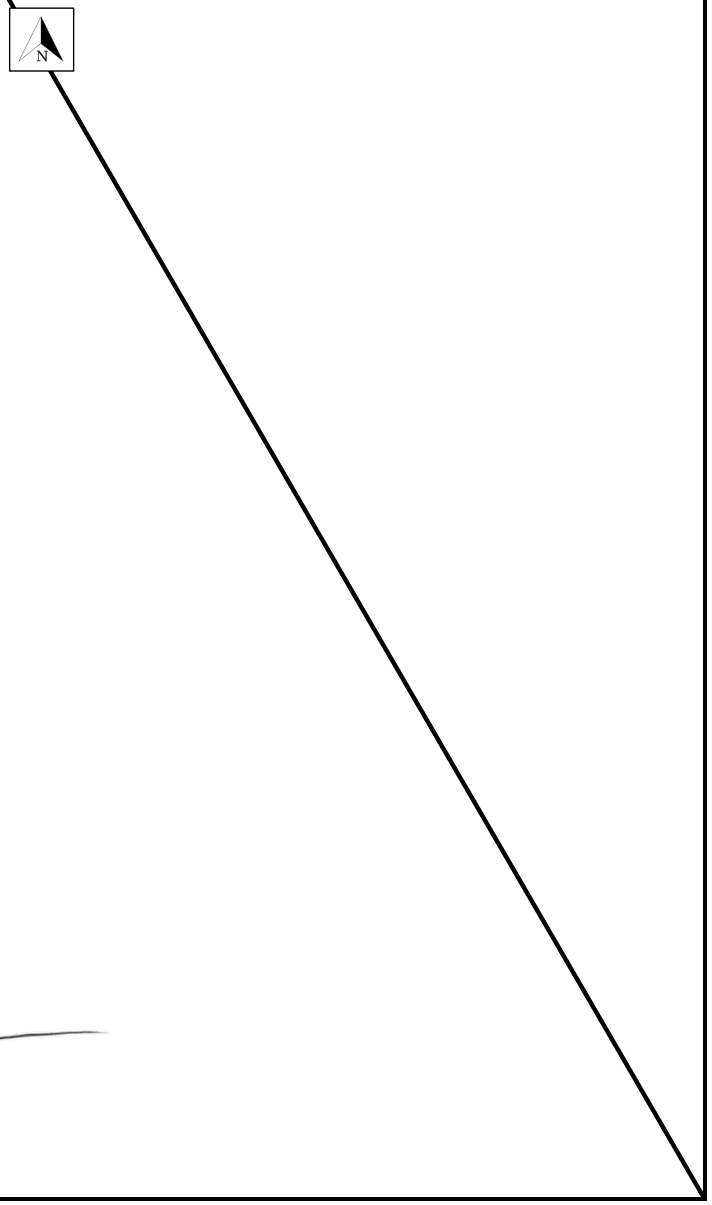
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Labor	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-LB-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	20080601021	3/10/2023	3	1755

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/19/2022	5/7/2022	5/20/2022	4/19/2022	5/7/2022	5/20/2022
Gross Sample Counts	12	10	19	2269	2175	4330
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.20	0.17	0.16	37.82	36.25	36.08
Gross Background Counts	4	49	61	2256	19487	21263
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.07	0.08	0.10	37.60	32.48	35.44
Net Sample CPM	0.13	0.09	0.06	0.22	3.77	0.65
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.27E+06	5.27E+06	5.27E+06	5.27E+06	5.27E+06	5.27E+06
LLD (counts)	12	11	16	224	155	238
MDC (µCi/mL)	7.79E-14	6.73E-14	4.93E-14	2.02E-12	1.40E-12	1.07E-12
MDC as a % of the DAC_{eff}	15.5765%	13.4659%	9.8659%	0.0252%	0.0175%	0.01%
Activity (µCi/mL)	5.06E-14	3.23E-14	2.15E-14	1.17E-13	2.04E-12	3.49E-13
Activity as a % of the DAC	10.1265%	6.4556%	4.3038%	0.0015%	0.0255%	0.00%
Estimated Weekly Dose [mrem]	1.01E+01	6.46E+00	4.30E+00	1.47E-03	2.55E-02	4.36E-03

Approximate sampler location denoted below with ▲



Comments: Final count results below 10% of most conservative DACs. Recounts performed to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

TB = BKG Count Time

TS = Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

RB = BKG Count Rate

FE = Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

SAF = Self Absorption Factor (0.998)

Sr90 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

Th232 5E-13 µCi/mL

PermaFix® environmental services
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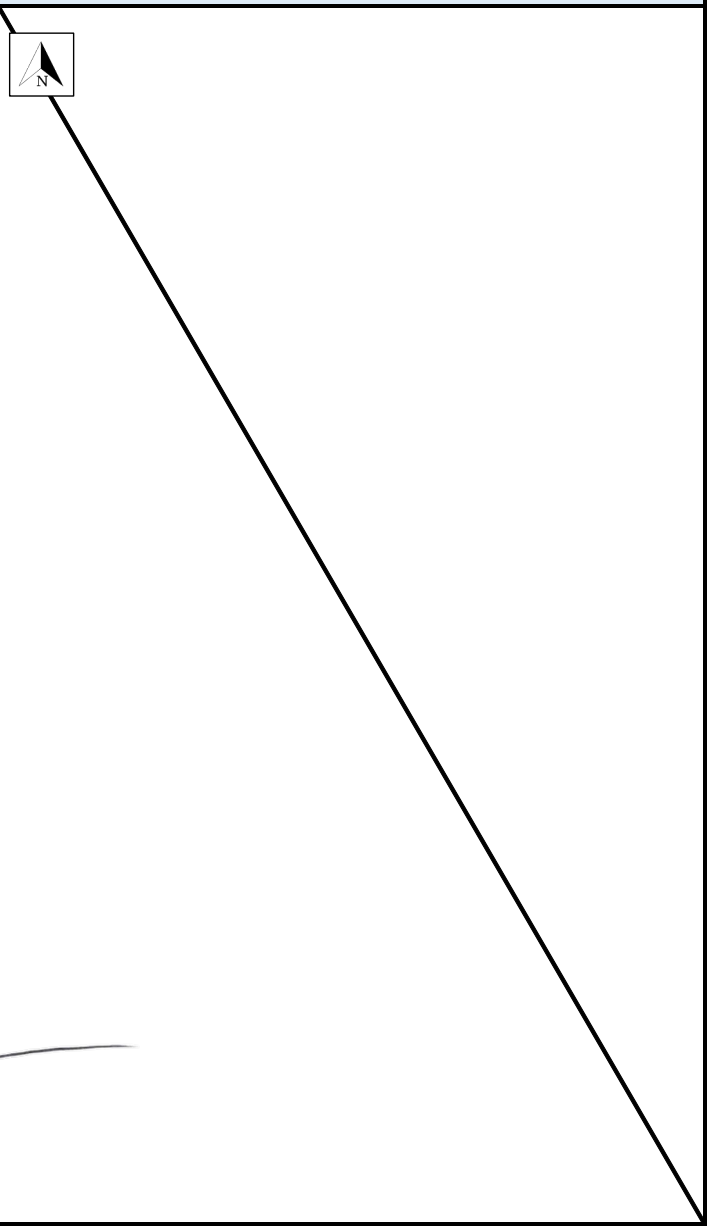
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Labor	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-LB-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	20080601021	3/10/2023	3	1755

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/25/2022	5/6/2022	5/21/2022	4/25/2022	5/6/2022	5/21/2022
Gross Sample Counts	18	15	24	2177	2020	4178
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.30	0.25	0.20	36.28	33.67	34.82
Gross Background Counts	7	51	52	2352	20235	22813
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.12	0.09	0.09	39.20	33.73	38.02
Net Sample CPM	0.18	0.17	0.11	-2.92	-0.06	-3.21
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.27E+06	5.27E+06	5.27E+06	5.27E+06	5.27E+06	5.27E+06
LLD (counts)	15	11	15	229	158	246
MDC (µCi/mL)	9.69E-14	6.83E-14	4.63E-14	2.06E-12	1.43E-12	1.11E-12
MDC as a % of the DAC_{eff}	19.3796%	13.6613%	9.2547%	0.0258%	0.0178%	0.01%
Activity (µCi/mL)	6.96E-14	6.27E-14	4.30E-14	-1.58E-12	-3.16E-14	-1.73E-12
Activity as a % of the DAC	13.9239%	12.5315%	8.6075%	-0.0197%	-0.0004%	-0.02%
Estimated Weekly Dose [mrem]	1.39E+01	1.25E+01	8.61E+00	-1.97E-02	-3.94E-04	-2.17E-02

Approximate sampler location denoted below with ▲



Comments: Final count results below 10% of most conservative DACs. Recounts performed to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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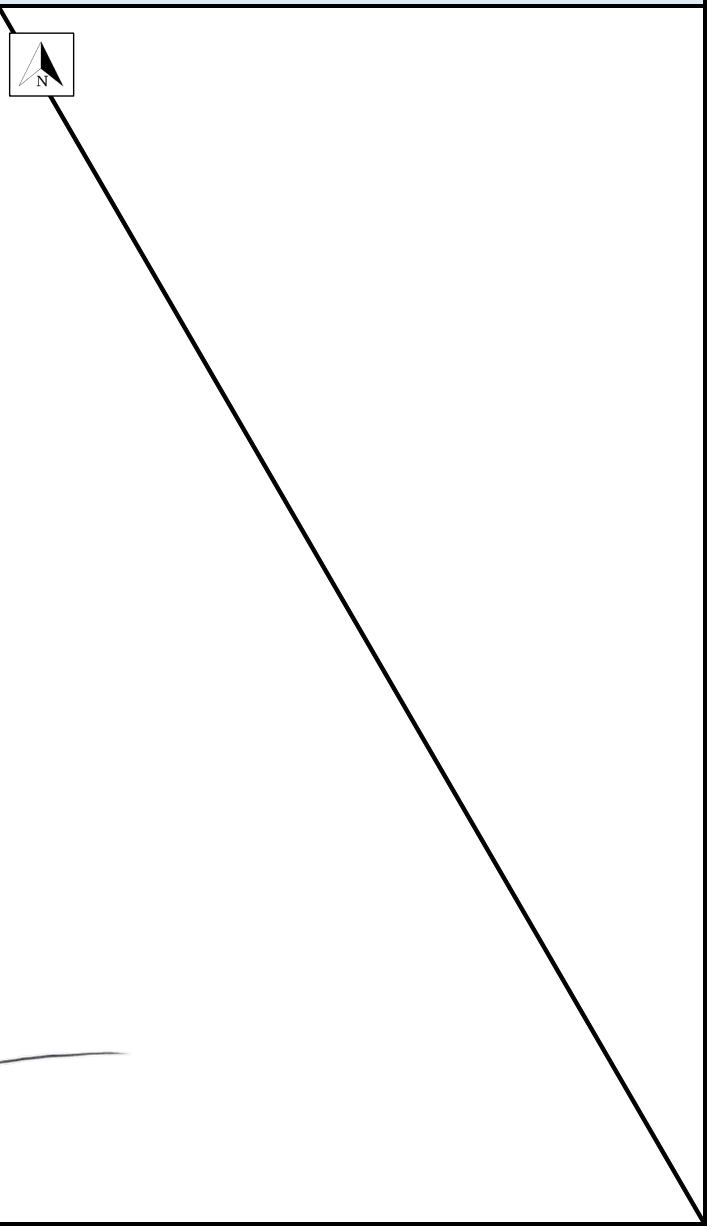
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Labor	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-LB-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	20080601021	3/10/2023	3	2330

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/2/2022	5/9/2022	5/22/2022	5/2/2022	5/9/2022	5/22/2022
Gross Sample Counts	14	11	21	2322	2283	4217
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.23	0.18	0.18	38.70	38.05	35.14
Gross Background Counts	8	48	50	2082	19002	19327
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.08	34.70	31.67	32.21
Net Sample CPM	0.10	0.10	0.09	4.00	6.38	2.93
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06
LLD (counts)	16	11	14	215	153	227
MDC (µCi/mL)	7.70E-14	5.03E-14	3.43E-14	1.46E-12	1.04E-12	7.71E-13
MDC as a % of the DAC_{eff}	15.4075%	10.0681%	6.8632%	0.0183%	0.0130%	0.01%
Activity (µCi/mL)	2.86E-14	2.96E-14	2.62E-14	1.63E-12	2.60E-12	1.19E-12
Activity as a % of the DAC	5.7206%	5.9113%	5.2439%	0.0204%	0.0325%	0.01%
Estimated Weekly Dose [mrem]	5.72E+00	5.91E+00	5.24E+00	2.04E-02	3.25E-02	1.49E-02

Approximate sampler location denoted below with ▲



Comments: Final count results below 10% of most conservative DACs. Recounts performed to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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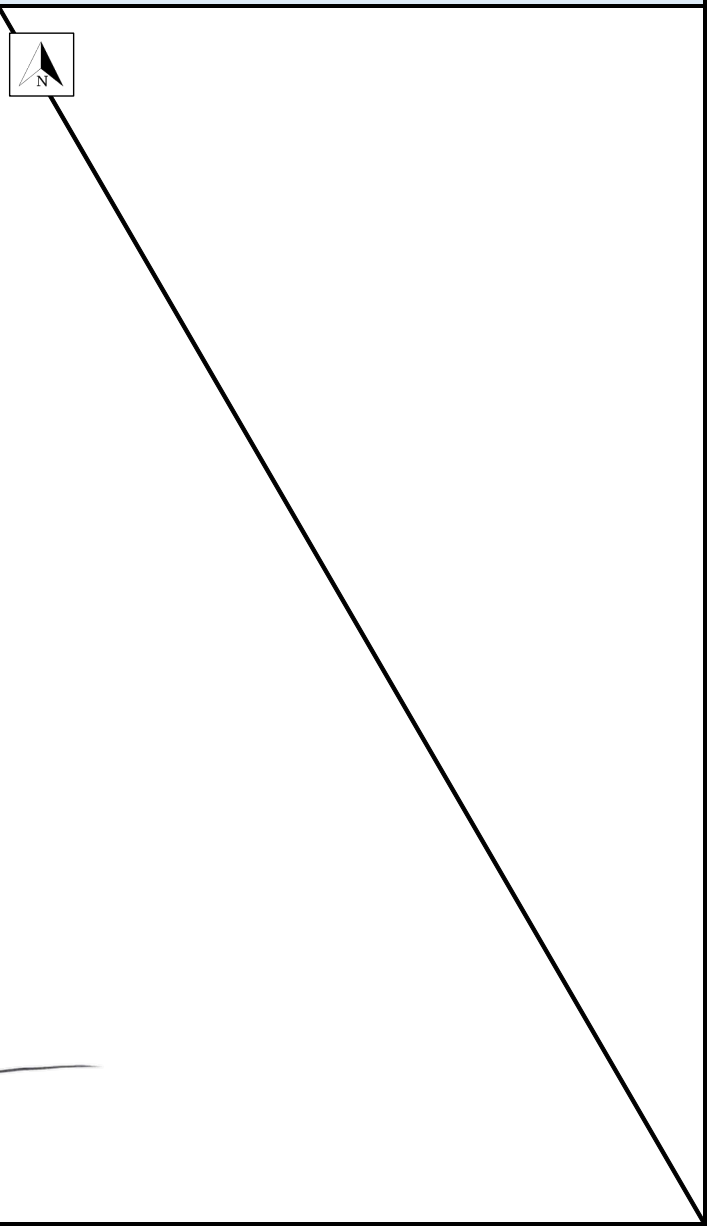
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Operator	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-OP-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	16671	3/10/2023	3	1865

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/18/2022	4/11/2022	5/8/2022	5/18/2022
Gross Sample Counts	17	8	17	2639	2187	4415
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.28	0.13	0.14	43.98	36.45	36.79
Gross Background Counts	8	58	55	2355	21283	23920
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.09	39.25	35.47	39.87
Net Sample CPM	0.15	0.04	0.05	4.73	0.98	-3.08
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.60E+06	5.60E+06	5.60E+06	5.60E+06	5.60E+06	5.60E+06
LLD (counts)	16	11	15	229	162	252
MDC (µCi/mL)	9.62E-14	6.74E-14	4.45E-14	1.94E-12	1.38E-12	1.07E-12
MDC as a % of the DAC_{eff}	19.2490%	13.4721%	8.9057%	0.0243%	0.0172%	0.0134%
Activity (µCi/mL)	5.36E-14	1.31E-14	1.79E-14	2.41E-12	4.98E-13	-1.57E-12
Activity as a % of the DAC	10.7204%	2.6205%	3.5735%	0.0301%	0.0062%	-0.0196%
Estimated Weekly Dose [mrem]	1.07E+01	2.62E+00	3.57E+00	3.01E-02	6.22E-03	-1.96E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

TB = BKG Count Time

TS = Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

RB = BKG Count Rate

FE = Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

SAF = Self Absorption Factor (0.998)

Sr90 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

Th232 5E-13 µCi/mL

PermaFix® environmental services
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Air Sampling Results Data Sheet

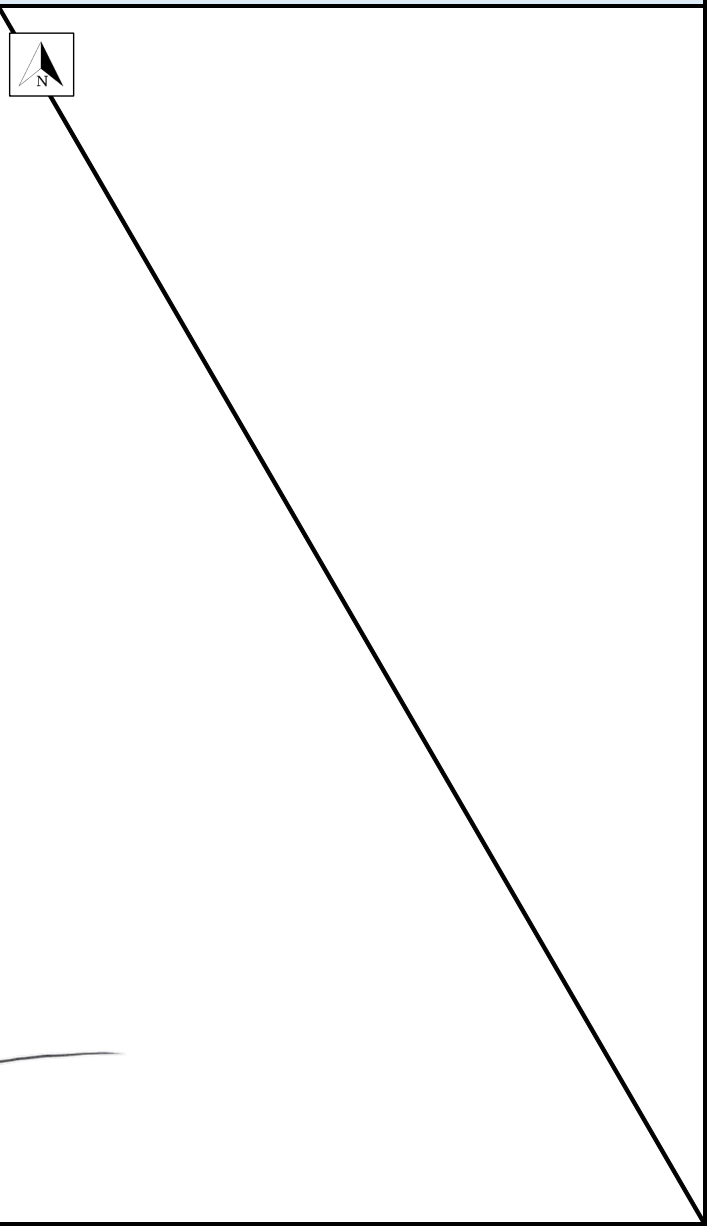
Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Operator	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-OP-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	16671	3/10/2023	3	1785

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/19/2022	5/7/2022	5/20/2022	4/19/2022	5/7/2022	5/20/2022
Gross Sample Counts	9	7	14	2234	2192	4228
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.15	0.12	0.12	37.23	36.53	35.23
Gross Background Counts	4	49	61	2256	19487	21263
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.07	0.08	0.10	37.60	32.48	35.44
Net Sample CPM	0.08	0.04	0.02	-0.37	4.06	-0.20
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.36E+06	5.36E+06	5.36E+06	5.36E+06	5.36E+06	5.36E+06
LLD (counts)	12	11	16	224	155	238
MDC (µCi/mL)	7.66E-14	6.62E-14	4.85E-14	1.99E-12	1.38E-12	1.05E-12
MDC as a % of the DAC_{eff}	15.3147%	13.2396%	9.7001%	0.0248%	0.0172%	0.01%
Activity (µCi/mL)	3.11E-14	1.31E-14	5.60E-15	-1.95E-13	2.16E-12	-1.09E-13
Activity as a % of the DAC	6.2227%	2.6135%	1.1201%	-0.0024%	0.0270%	0.00%
Estimated Weekly Dose [mrem]	6.22E+00	2.61E+00	1.12E+00	-2.44E-03	2.70E-02	-1.36E-03

Comments: Results below 10% of most conservative DACs. Recounts performed with longer background and sample count times to meet project MDC goals.

Approximate sampler location denoted below with ▲



Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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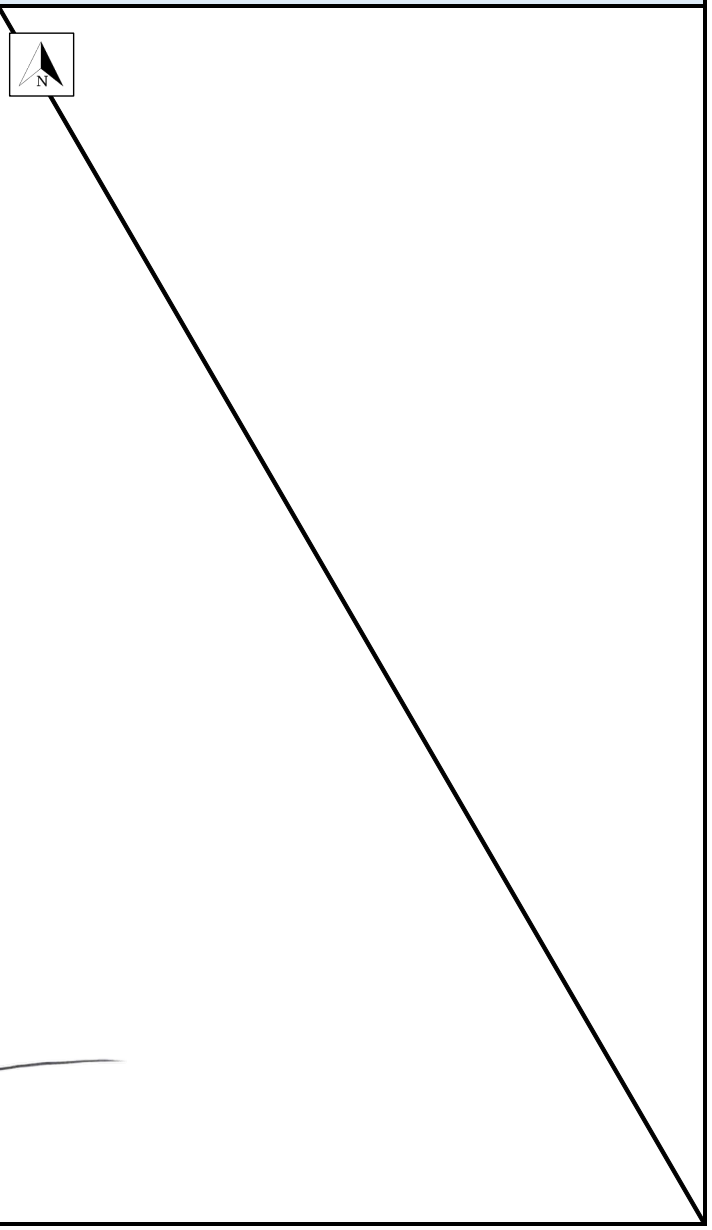
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Operator	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-OP-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	16671	3/10/2023	3	1725

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/25/2022	5/6/2022	5/21/2022	4/25/2022	5/6/2022	5/21/2022
Gross Sample Counts	16	12	22	2315	2228	4607
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.27	0.20	0.18	38.58	37.13	38.39
Gross Background Counts	7	51	52	2352	20235	22813
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.12	0.09	0.09	39.20	33.73	38.02
Net Sample CPM	0.15	0.12	0.10	-0.62	3.41	0.37
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06
LLD (counts)	15	11	15	229	158	246
MDC (µCi/mL)	9.86E-14	6.95E-14	4.71E-14	2.10E-12	1.45E-12	1.13E-12
MDC as a % of the DAC_{eff}	19.7167%	13.8989%	9.4157%	0.0262%	0.0181%	0.01%
Activity (µCi/mL)	5.80E-14	4.44E-14	3.73E-14	-3.39E-13	1.88E-12	2.04E-13
Activity as a % of the DAC	11.5904%	8.8860%	7.4694%	-0.0042%	0.0234%	0.00%
Estimated Weekly Dose [mrem]	1.16E+01	8.89E+00	7.47E+00	-4.24E-03	2.34E-02	2.55E-03

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed with increased sample and background count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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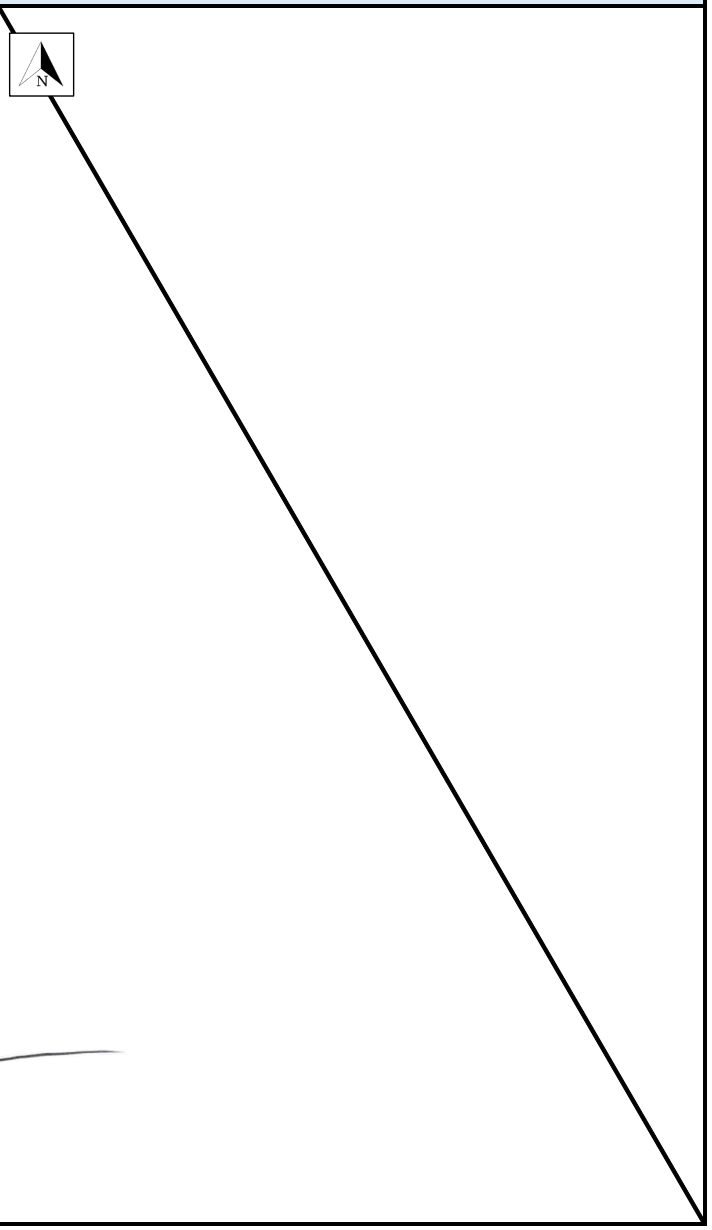
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Operator	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-OP-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Breathing Zone	Gil Air	16671	3/10/2023	3	2330

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/2/2022	5/9/2022	5/22/2022	5/2/2022	5/9/2022	5/22/2022
Gross Sample Counts	8	6	13	2416	2228	4512
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.13	0.10	0.11	40.27	37.13	37.60
Gross Background Counts	8	48	50	2082	19002	19327
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.08	34.70	31.67	32.21
Net Sample CPM	0.00	0.02	0.03	5.57	5.46	5.39
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06
LLD (counts)	16	11	14	215	153	227
MDC (µCi/mL)	7.70E-14	5.03E-14	3.43E-14	1.46E-12	1.04E-12	7.71E-13
MDC as a % of the DAC_{eff}	15.4075%	10.0681%	6.8632%	0.0183%	0.0130%	0.01%
Activity (µCi/mL)	0.00E+00	5.72E-15	7.15E-15	2.27E-12	2.23E-12	2.20E-12
Activity as a % of the DAC	0.0000%	1.1441%	1.4301%	0.0284%	0.0278%	0.03%
Estimated Weekly Dose [mrem]	0.00E+00	1.14E+00	1.43E+00	2.84E-02	2.78E-02	2.74E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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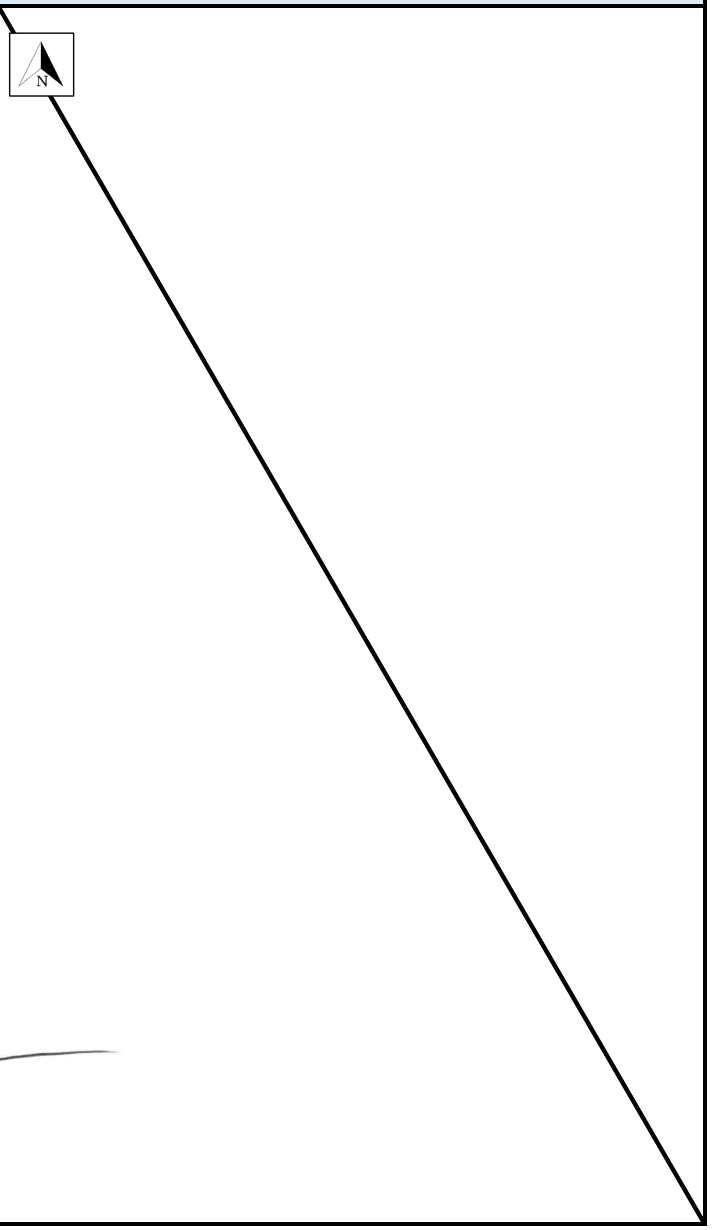
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #1 Downwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-P1-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20201001015	3/10/2023	3	1870

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/18/2022	4/11/2022	5/8/2022	5/18/2022
Gross Sample Counts	19	12	25	2801	2281	4572
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.32	0.20	0.21	46.68	38.02	38.10
Gross Background Counts	8	58	55	2355	21283	23920
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.09	39.25	35.47	39.87
Net Sample CPM	0.18	0.10	0.12	7.43	2.55	-1.77
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.61E+06	5.61E+06	5.61E+06	5.61E+06	5.61E+06	5.61E+06
LLD (counts)	16	11	15	229	162	252
MDC (µCi/mL)	9.60E-14	6.72E-14	4.44E-14	1.94E-12	1.37E-12	1.07E-12
MDC as a % of the DAC_{eff}	19.1976%	13.4360%	8.8819%	0.0242%	0.0172%	0.01%
Activity (µCi/mL)	6.53E-14	3.68E-14	4.16E-14	3.77E-12	1.29E-12	-8.97E-13
Activity as a % of the DAC	13.0676%	7.3654%	8.3158%	0.0472%	0.0162%	-0.01%
Estimated Weekly Dose [mrem]	1.31E+01	7.37E+00	8.32E+00	4.72E-02	1.62E-02	-1.12E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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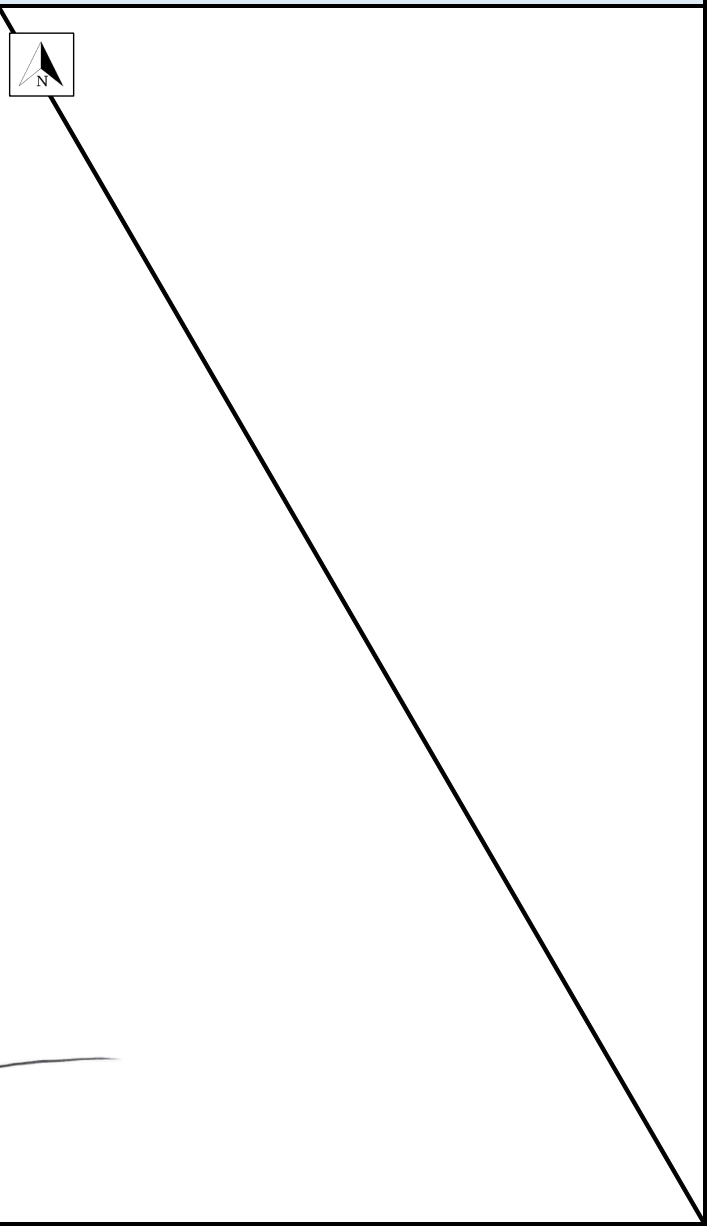
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #1 Downwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-P1-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20201001015	3/10/2023	3	1770

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/19/2022	5/7/2022	5/19/2022	4/19/2022	5/7/2022	5/19/2022
Gross Sample Counts	14	8	17	2560	2167	4392
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.23	0.13	0.14	42.67	36.12	36.60
Gross Background Counts	4	49	58	2256	19487	20829
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.07	0.08	0.10	37.60	32.48	34.72
Net Sample CPM	0.17	0.05	0.05	5.07	3.64	1.89
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.31E+06	5.31E+06	5.31E+06	5.31E+06	5.31E+06	5.31E+06
LLD (counts)	12	11	15	224	155	236
MDC (µCi/mL)	7.72E-14	6.68E-14	4.79E-14	2.00E-12	1.39E-12	1.05E-12
MDC as a % of the DAC_{eff}	15.4445%	13.3518%	9.5856%	0.0250%	0.0174%	0.01%
Activity (µCi/mL)	6.28E-14	1.95E-14	1.69E-14	2.72E-12	1.95E-12	1.01E-12
Activity as a % of the DAC	12.5508%	3.8908%	3.3887%	0.0340%	0.0244%	0.01%
Estimated Weekly Dose [mrem]	1.26E+01	3.89E+00	3.39E+00	3.40E-02	2.44E-02	1.26E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL **TB =** BKG Count Time **TS =** Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB) **RB =** BKG Count Rate **FE =** Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF **SAF =** Self Absorption Factor (0.998) **Sr90** 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF **Th232** 5E-13 µCi/mL

PermaFix® environmental services
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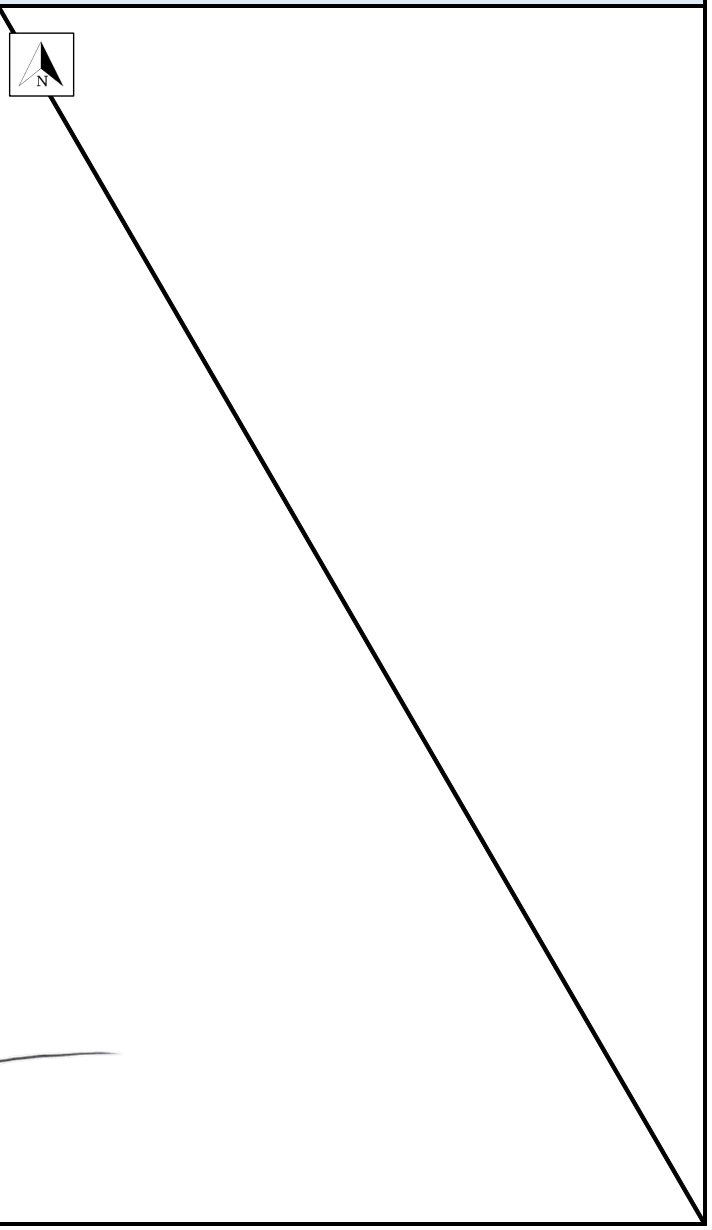
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #1 Downwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-P1-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20201001015	3/10/2023	3	1725

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2022	2/21/2023	2/21/2023	2/21/2022
Counting Date	4/25/2022	5/6/2022	5/20/2022	4/25/2022	5/6/2022	5/20/2022
Gross Sample Counts	15	11	22	2162	2078	4084
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.25	0.18	0.18	36.03	34.63	34.03
Gross Background Counts	7	51	61	2352	20235	21263
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.12	0.09	0.10	39.20	33.73	35.44
Net Sample CPM	0.13	0.10	0.08	-3.17	0.91	-1.41
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06
LLD (counts)	15	11	16	229	158	238
MDC (µCi/mL)	9.86E-14	6.95E-14	5.02E-14	2.10E-12	1.45E-12	1.09E-12
MDC as a % of the DAC_{eff}	19.7167%	13.8989%	10.0375%	0.0262%	0.0181%	0.01%
Activity (µCi/mL)	5.15E-14	3.80E-14	3.16E-14	-1.74E-12	5.00E-13	-7.73E-13
Activity as a % of the DAC	10.3026%	7.5982%	6.3103%	-0.0218%	0.0062%	-0.01%
Estimated Weekly Dose [mrem]	1.03E+01	7.60E+00	6.31E+00	-2.18E-02	6.25E-03	-9.67E-03

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed to using longer sample and background count times to achieve project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

DAC: Sr90 8E-09 µCi/mL

DAC: Th232 5E-13 µCi/mL

PermaFix® environmental services
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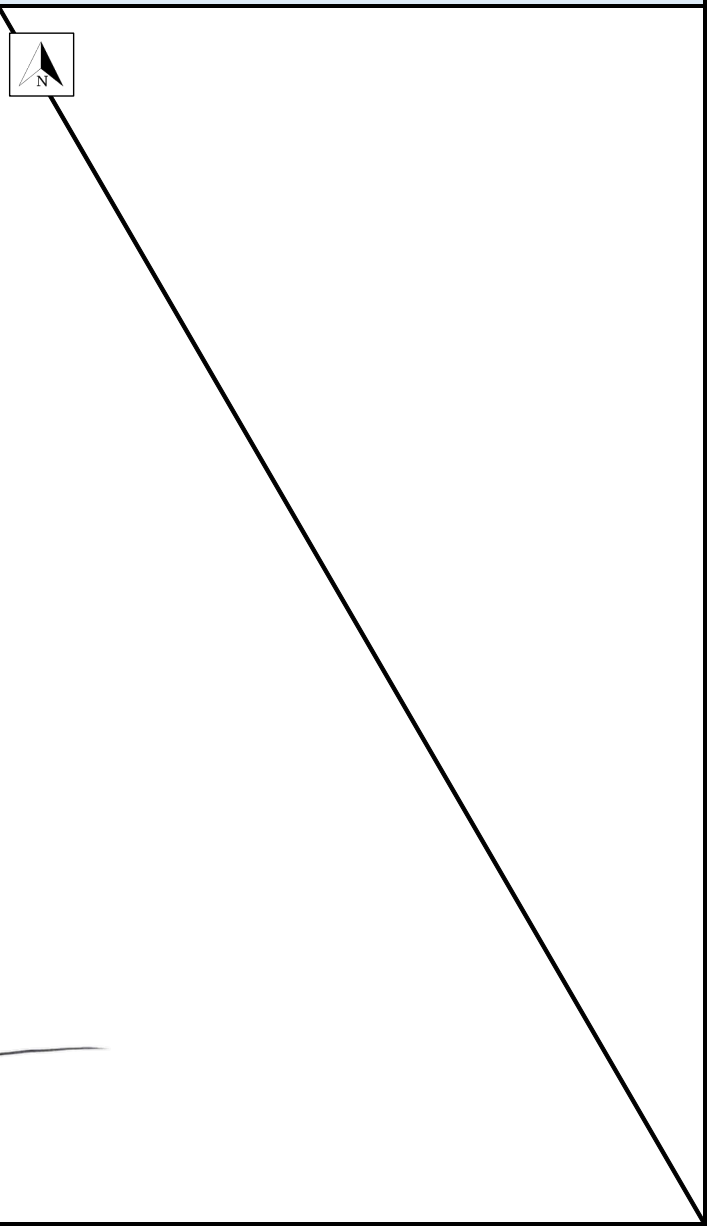
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #1 Downwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-P1-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20201001015	3/10/2023	3	2325

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/3/2022	5/9/2022	5/23/2022	5/3/2022	5/9/2022	5/23/2022
Gross Sample Counts	7	6	12	2240	2192	4205
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.12	0.10	0.10	37.33	36.53	35.04
Gross Background Counts	3	48	61	2160	19002	19668
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.05	0.08	0.10	36.00	31.67	32.78
Net Sample CPM	0.07	0.02	0.00	1.33	4.86	2.26
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.98E+06	6.98E+06	6.98E+06	6.98E+06	6.98E+06	6.98E+06
LLD (counts)	11	11	16	219	153	229
MDC (µCi/mL)	5.28E-14	5.04E-14	3.72E-14	1.49E-12	1.04E-12	7.79E-13
MDC as a % of the DAC_{eff}	10.5665%	10.0898%	7.4472%	0.0186%	0.0131%	0.01%
Activity (µCi/mL)	1.91E-14	5.73E-15	-4.78E-16	5.44E-13	1.99E-12	9.23E-13
Activity as a % of the DAC	3.8219%	1.1466%	-0.0955%	0.0068%	0.0248%	0.01%
Estimated Weekly Dose [mrem]	3.82E+00	1.15E+00	-9.55E-02	6.81E-03	2.48E-02	1.15E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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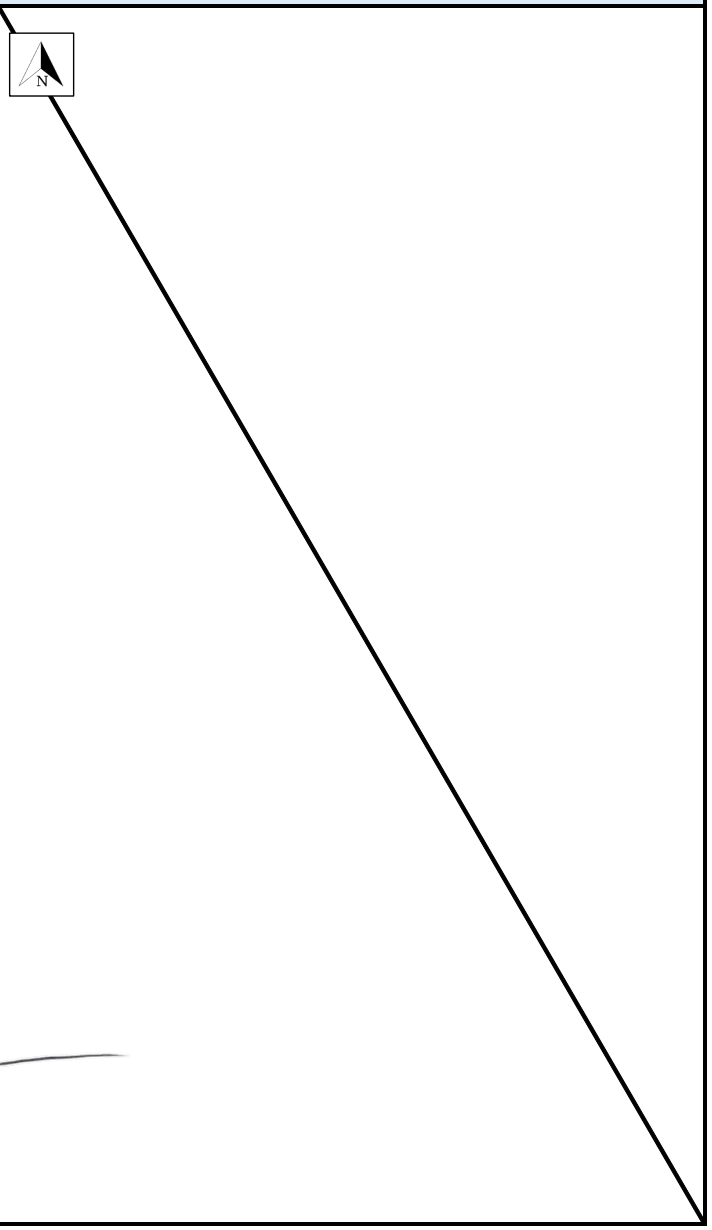
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #2 Downwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-P2-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14279	3/10/2023	3	1860

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/18/2022	4/11/2022	5/8/2022	5/18/2022
Gross Sample Counts	21	17	25	2722	2235	4620
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.35	0.28	0.21	45.37	37.25	38.50
Gross Background Counts	8	58	55	2355	21283	23920
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.09	39.25	35.47	39.87
Net Sample CPM	0.22	0.19	0.12	6.12	1.78	-1.37
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.58E+06	5.58E+06	5.58E+06	5.58E+06	5.58E+06	5.58E+06
LLD (counts)	16	11	15	229	162	252
MDC (µCi/mL)	9.65E-14	6.75E-14	4.46E-14	1.95E-12	1.38E-12	1.07E-12
MDC as a % of the DAC_{eff}	19.3008%	13.5083%	8.9297%	0.0243%	0.0172%	0.01%
Activity (µCi/mL)	7.76E-14	6.69E-14	4.18E-14	3.12E-12	9.08E-13	-6.98E-13
Activity as a % of the DAC	15.5266%	13.3768%	8.3605%	0.0390%	0.0113%	-0.01%
Estimated Weekly Dose [mrem]	1.55E+01	1.34E+01	8.36E+00	3.90E-02	1.13E-02	-8.72E-03

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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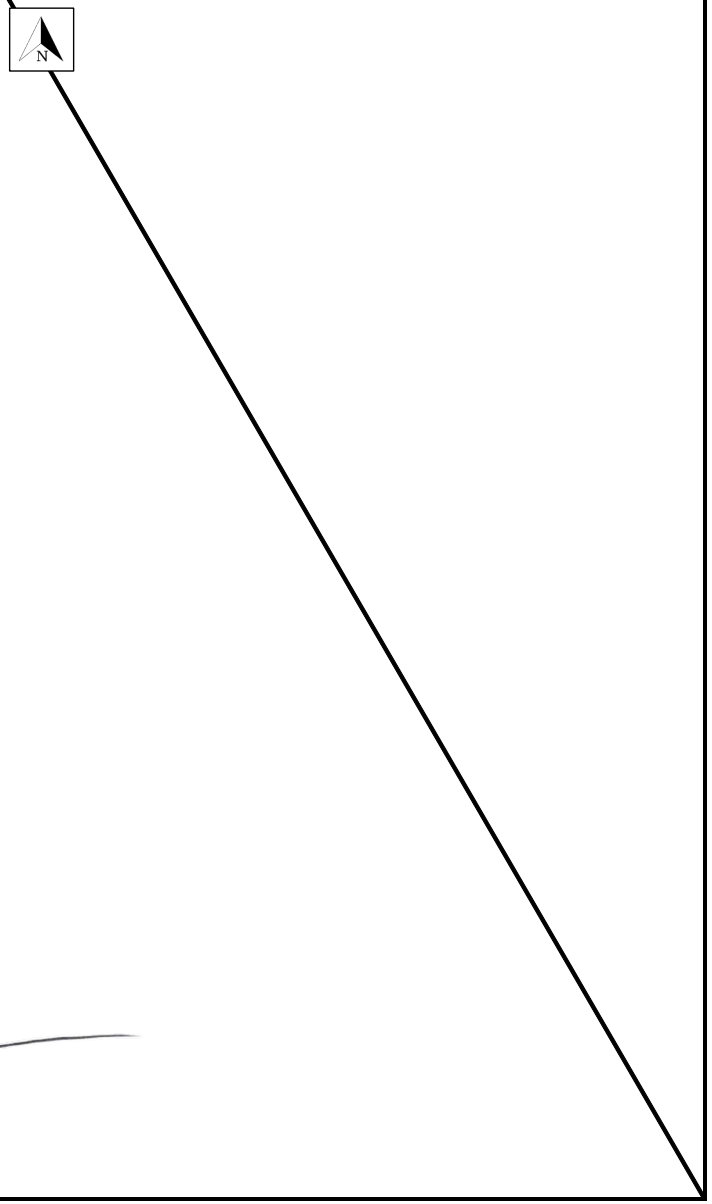
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #2 Downwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-P2-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14279	3/10/2023	3	1785

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/18/2022	5/7/2022	5/19/2022	4/18/2022	5/7/2022	5/19/2022
Gross Sample Counts	13	7	15	2364	2303	4510
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.22	0.12	0.13	39.40	38.38	37.58
Gross Background Counts	8	49	58	2320	19487	20829
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.10	38.67	32.48	34.72
Net Sample CPM	0.08	0.04	0.03	0.73	5.91	2.87
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.36E+06	5.36E+06	5.36E+06	5.36E+06	5.36E+06	5.36E+06
LLD (counts)	16	11	15	227	155	236
MDC (µCi/mL)	1.01E-13	6.62E-14	4.75E-14	2.01E-12	1.38E-12	1.04E-12
MDC as a % of the DAC_{eff}	20.1117%	13.2396%	9.5051%	0.0252%	0.0172%	0.01%
Activity (µCi/mL)	3.11E-14	1.31E-14	1.06E-14	3.90E-13	3.14E-12	1.53E-12
Activity as a % of the DAC	6.2227%	2.6135%	2.1157%	0.0049%	0.0393%	0.02%
Estimated Weekly Dose [mrem]	6.22E+00	2.61E+00	2.12E+00	4.88E-03	3.93E-02	1.91E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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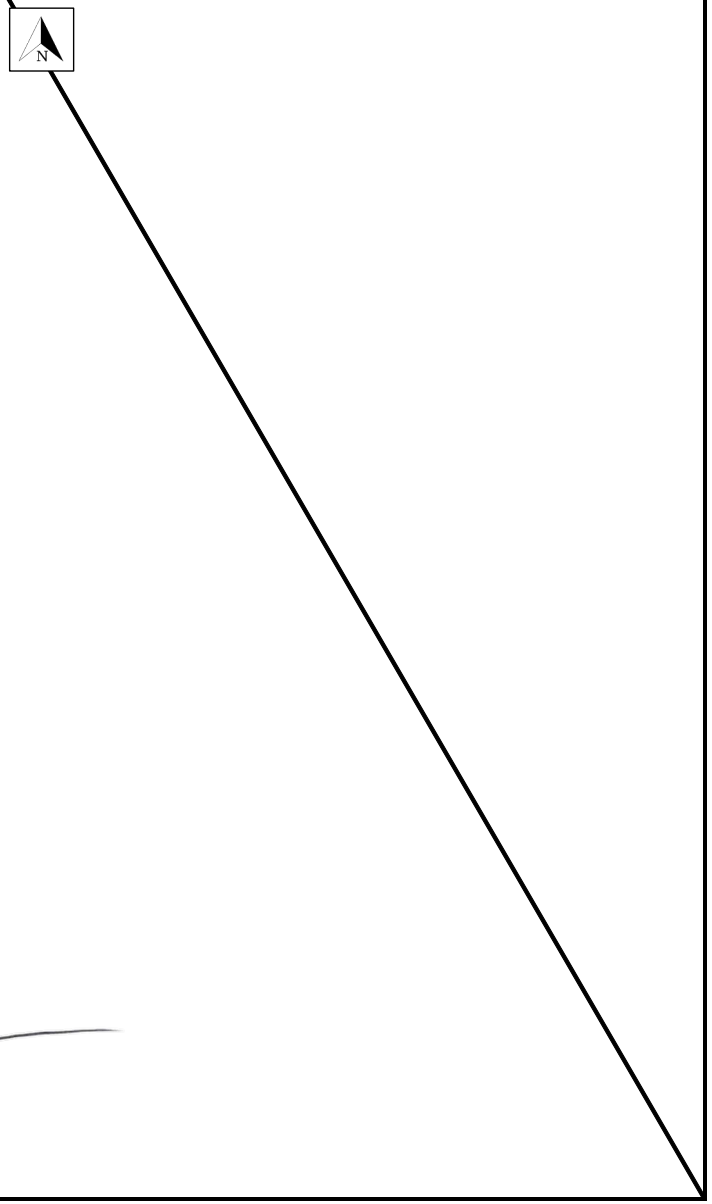
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #2 Downwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-P2-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14279	3/10/2023	3	1725

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/26/2022	5/6/2022	5/21/2022	4/26/2022	5/6/2022	5/21/2022
Gross Sample Counts	15	12	18	2228	2274	4020
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.25	0.20	0.15	37.13	37.90	33.50
Gross Background Counts	8	51	52	2347	20235	22813
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.09	0.09	39.12	33.73	38.02
Net Sample CPM	0.12	0.12	0.06	-1.98	4.18	-4.52
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06
LLD (counts)	16	11	15	228	158	246
MDC (µCi/mL)	1.04E-13	6.95E-14	4.71E-14	2.10E-12	1.45E-12	1.13E-12
MDC as a % of the DAC_{eff}	20.8113%	13.8989%	9.4157%	0.0262%	0.0181%	0.01%
Activity (µCi/mL)	4.51E-14	4.44E-14	2.45E-14	-1.09E-12	2.30E-12	-2.49E-12
Activity as a % of the DAC	9.0148%	8.8860%	4.8937%	-0.0136%	0.0287%	-0.03%
Estimated Weekly Dose [mrem]	9.01E+00	8.89E+00	4.89E+00	-1.36E-02	2.87E-02	-3.11E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL **TB =** BKG Count Time **TS =** Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB) **RB =** BKG Count Rate **FE =** Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF **SAF =** Self Absorption Factor (0.998) **Sr90** 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF **Th232** 5E-13 µCi/mL

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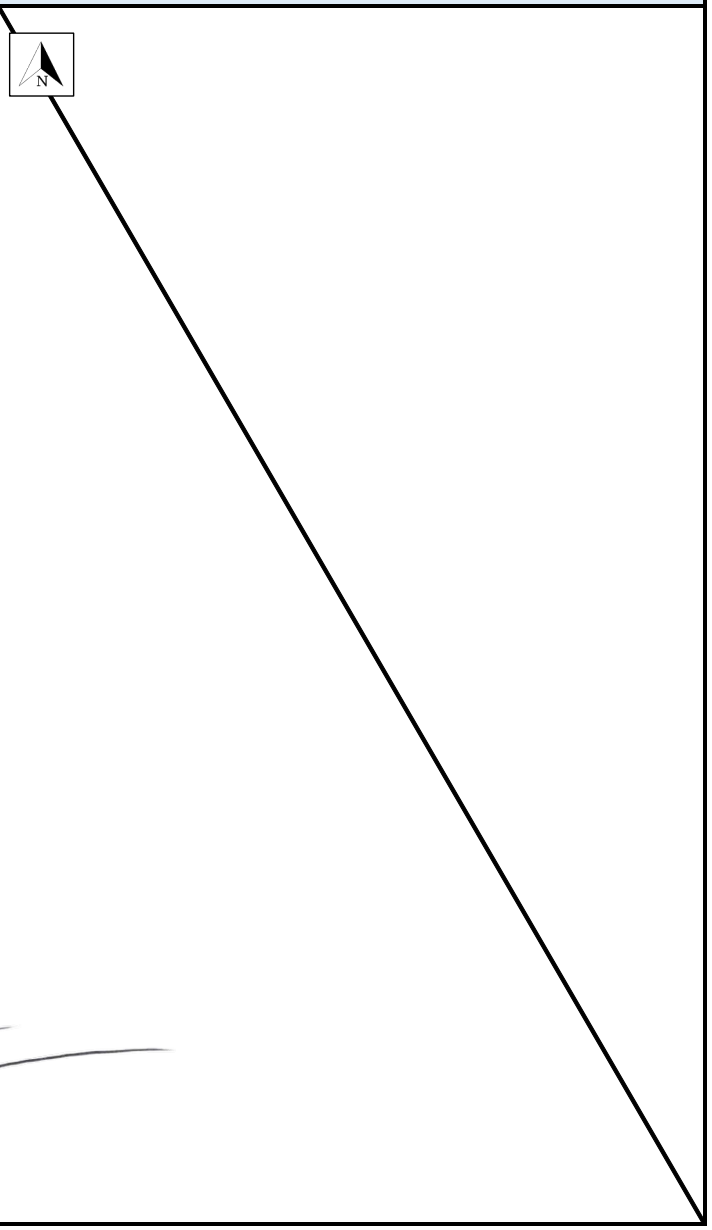
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #2 Downwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-P2-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14279	3/10/2023	3	2325

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/2/2022	5/9/2022	5/22/2022	5/2/2022	5/9/2022	5/22/2022
Gross Sample Counts	6	6	11	2436	2210	4812
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.10	0.10	0.09	40.60	36.83	40.10
Gross Background Counts	8	48	50	2082	19002	19327
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.08	34.70	31.67	32.21
Net Sample CPM	-0.03	0.02	0.01	5.90	5.16	7.89
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.98E+06	6.98E+06	6.98E+06	6.98E+06	6.98E+06	6.98E+06
LLD (counts)	16	11	14	215	153	227
MDC (µCi/mL)	7.72E-14	5.04E-14	3.44E-14	1.47E-12	1.04E-12	7.73E-13
MDC as a % of the DAC_{eff}	15.4406%	10.0898%	6.8780%	0.0183%	0.0131%	0.01%
Activity (µCi/mL)	-9.55E-15	5.73E-15	2.39E-15	2.41E-12	2.11E-12	3.22E-12
Activity as a % of the DAC	-1.9110%	1.1466%	0.4777%	0.0301%	0.0264%	0.04%
Estimated Weekly Dose [mrem]	-1.91E+00	1.15E+00	4.78E-01	3.01E-02	2.64E-02	4.03E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
A Nuclear Services and Waste Management Company

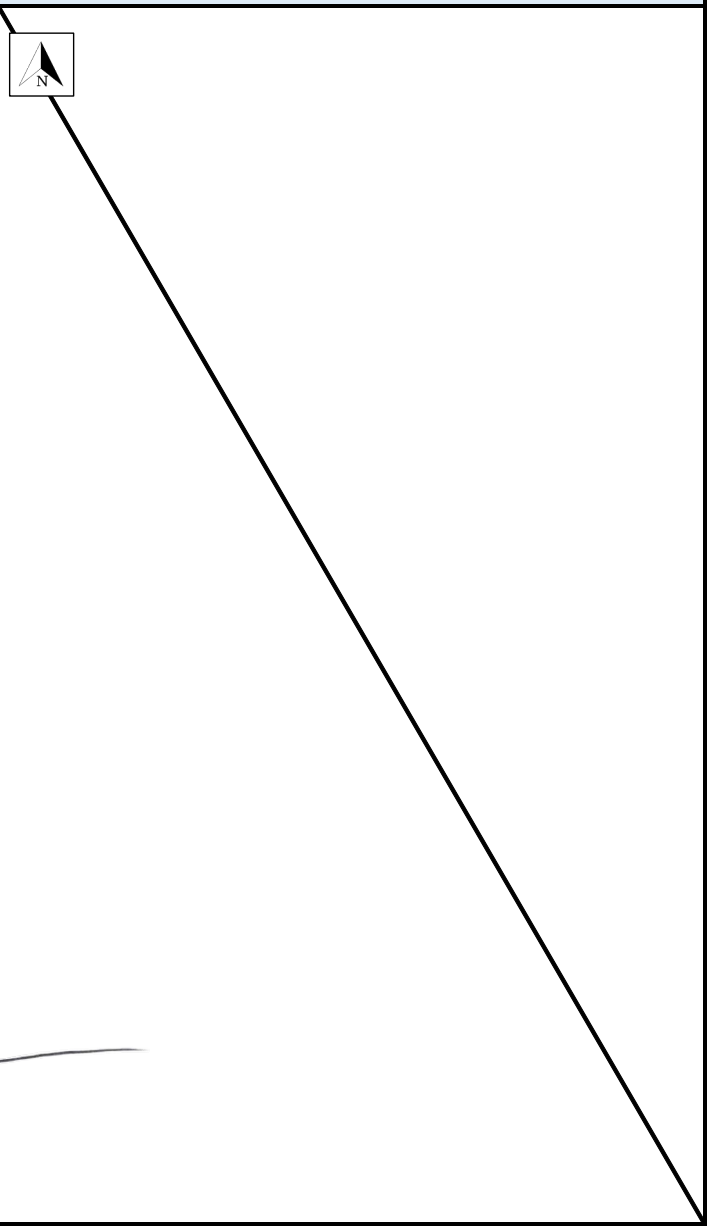
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #3 Upwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-P3-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20080601025	3/10/2023	3	1875

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/18/2022	4/11/2022	5/8/2022	5/18/2022
Gross Sample Counts	18	14	22	2744	2243	4633
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.30	0.23	0.18	45.73	37.38	38.61
Gross Background Counts	8	58	55	2355	21283	23920
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.09	39.25	35.47	39.87
Net Sample CPM	0.17	0.14	0.09	6.48	1.91	-1.26
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.63E+06	5.63E+06	5.63E+06	5.63E+06	5.63E+06	5.63E+06
LLD (counts)	16	11	15	229	162	252
MDC (µCi/mL)	9.57E-14	6.70E-14	4.43E-14	1.93E-12	1.37E-12	1.06E-12
MDC as a % of the DAC_{eff}	19.1464%	13.4002%	8.8583%	0.0241%	0.0171%	0.01%
Activity (µCi/mL)	5.92E-14	4.86E-14	3.26E-14	3.28E-12	9.68E-13	-6.37E-13
Activity as a % of the DAC	11.8480%	9.7154%	6.5164%	0.0410%	0.0121%	-0.01%
Estimated Weekly Dose [mrem]	1.18E+01	9.72E+00	6.52E+00	4.10E-02	1.21E-02	-7.96E-03

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
A Nuclear Services and Waste Management Company

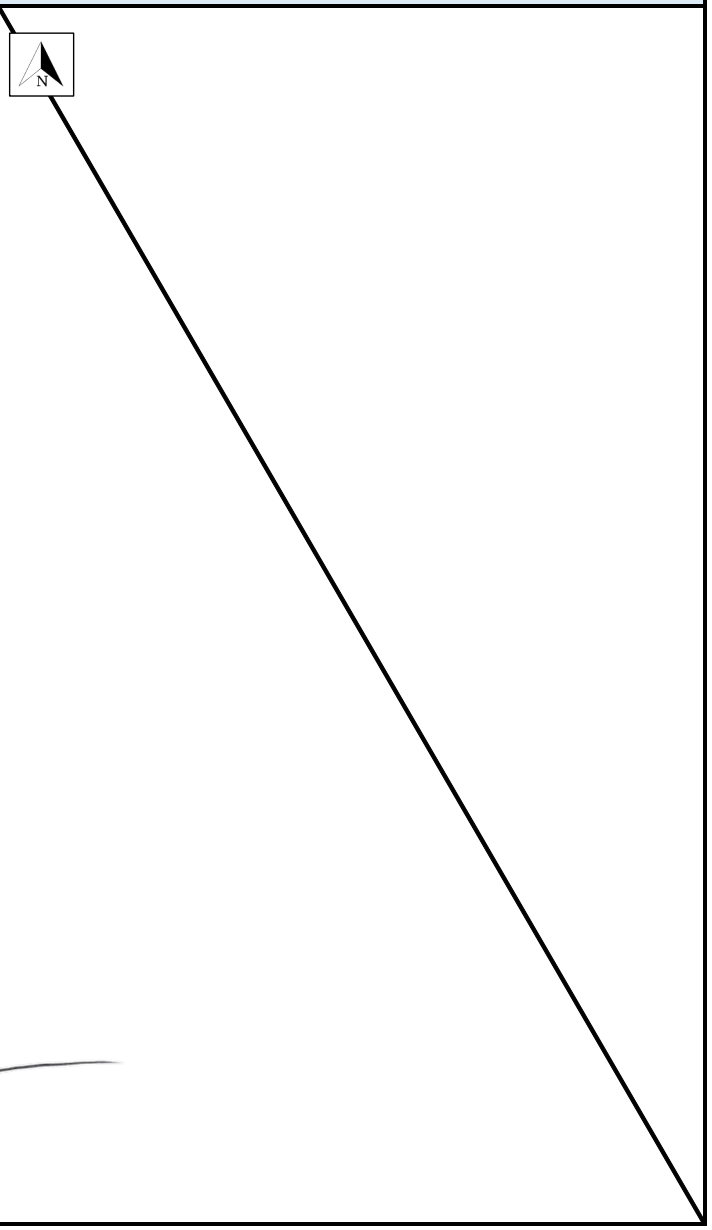
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #3 Upwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-P3-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20080601025	3/10/2023	3	1800

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/18/2022	5/7/2022	5/20/2022	4/18/2022	5/7/2022	5/20/2022
Gross Sample Counts	19	12	23	2164	2210	4552
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.32	0.20	0.19	36.07	36.83	37.93
Gross Background Counts	8	49	61	2322	19487	21263
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.10	38.70	32.48	35.44
Net Sample CPM	0.18	0.12	0.09	-2.63	4.36	2.50
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.40E+06	5.40E+06	5.40E+06	5.40E+06	5.40E+06	5.40E+06
LLD (counts)	16	11	16	227	155	238
MDC (µCi/mL)	9.97E-14	6.56E-14	4.81E-14	2.00E-12	1.37E-12	1.05E-12
MDC as a % of the DAC_{eff}	19.9441%	13.1293%	9.6193%	0.0250%	0.0171%	0.01%
Activity (µCi/mL)	6.79E-14	4.38E-14	3.33E-14	-1.39E-12	2.30E-12	1.32E-12
Activity as a % of the DAC	13.5758%	8.7626%	6.6645%	-0.0174%	0.0287%	0.02%
Estimated Weekly Dose [mrem]	1.36E+01	8.76E+00	6.66E+00	-1.74E-02	2.87E-02	1.64E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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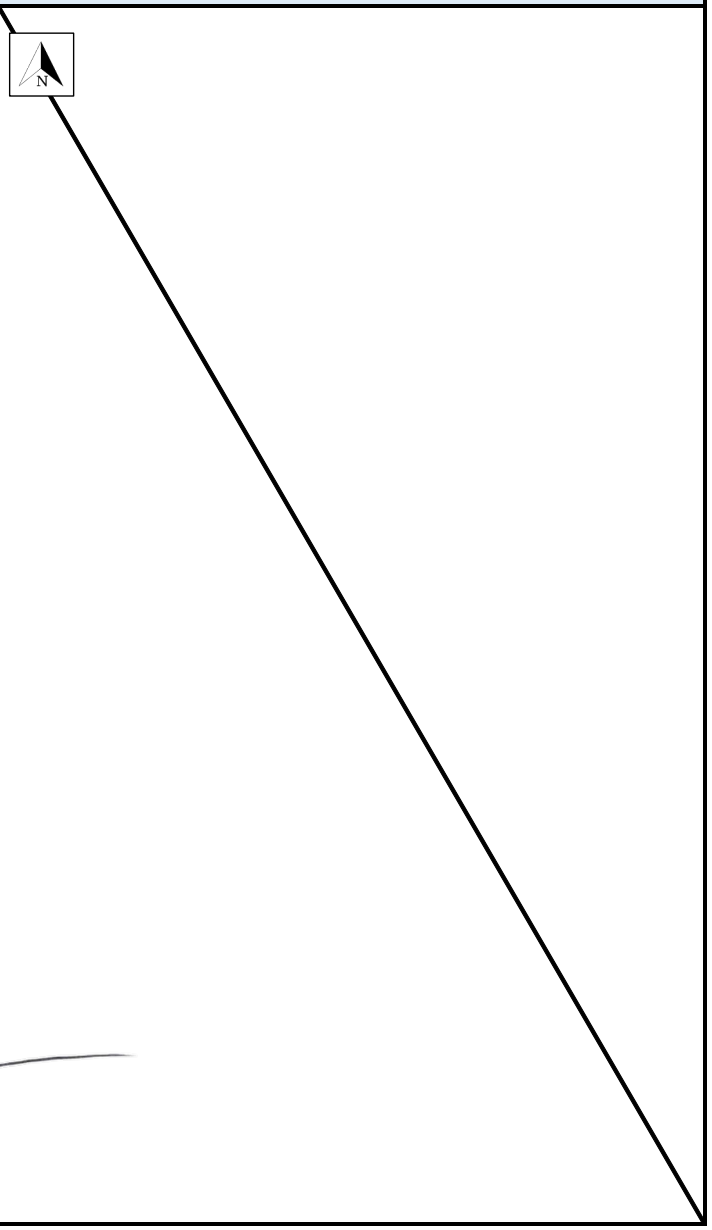
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #3 Upwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-P3-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20080601025	3/10/2023	3	1725

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/26/2022	5/6/2022	5/21/2022	4/26/2022	5/6/2022	5/21/2022
Gross Sample Counts	4	5	8	2272	2174	4288
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.07	0.08	0.07	37.87	36.23	35.73
Gross Background Counts	8	51	52	2347	20235	22813
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.09	0.09	39.12	33.73	38.02
Net Sample CPM	-0.07	0.00	-0.02	-1.25	2.51	-2.29
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06
LLD (counts)	16	11	15	228	158	246
MDC (µCi/mL)	1.04E-13	6.95E-14	4.71E-14	2.10E-12	1.45E-12	1.13E-12
MDC as a % of the DAC_{eff}	20.8113%	13.8989%	9.4157%	0.0262%	0.0181%	0.01%
Activity (µCi/mL)	-2.58E-14	-6.44E-16	-7.73E-15	-6.88E-13	1.38E-12	-1.26E-12
Activity as a % of the DAC	-5.1513%	-0.1288%	-1.5454%	-0.0086%	0.0173%	-0.02%
Estimated Weekly Dose [mrem]	-5.15E+00	-1.29E-01	-1.55E+00	-8.60E-03	1.73E-02	-1.57E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed with longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
A Nuclear Services and Waste Management Company

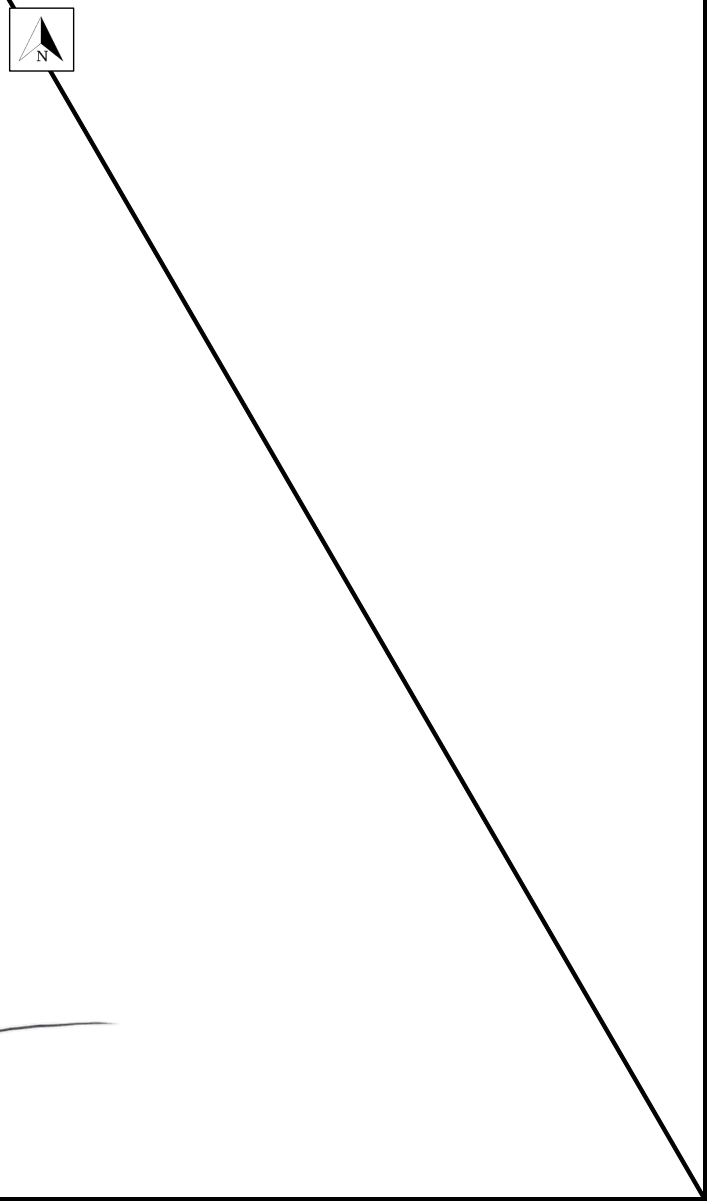
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #3 Upwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-P3-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	20080601025	3/10/2023	3	2330

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/2/2022	5/9/2022	5/22/2022	5/2/2022	5/9/2022	5/22/2022
Gross Sample Counts	13	10	20	2238	2112	4492
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.22	0.17	0.17	37.30	35.20	37.43
Gross Background Counts	8	48	50	2082	19002	19327
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.08	34.70	31.67	32.21
Net Sample CPM	0.08	0.09	0.08	2.60	3.53	5.22
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06
LLD (counts)	16	11	14	215	153	227
MDC (µCi/mL)	7.70E-14	5.03E-14	3.43E-14	1.46E-12	1.04E-12	7.71E-13
MDC as a % of the DAC_{eff}	15.4075%	10.0681%	6.8632%	0.0183%	0.0130%	0.01%
Activity (µCi/mL)	2.38E-14	2.48E-14	2.38E-14	1.06E-12	1.44E-12	2.13E-12
Activity as a % of the DAC	4.7672%	4.9579%	4.7672%	0.0132%	0.0180%	0.03%
Estimated Weekly Dose [mrem]	4.77E+00	4.96E+00	4.77E+00	1.32E-02	1.80E-02	2.66E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
A Nuclear Services and Waste Management Company

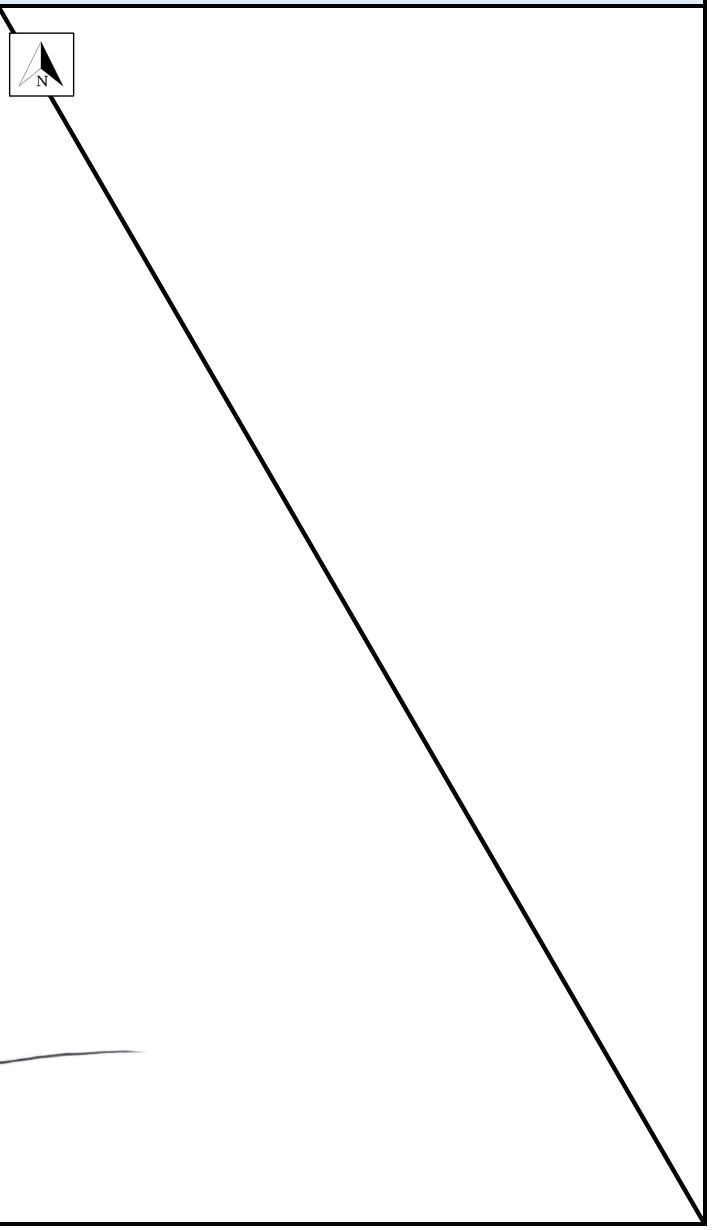
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #4 Upwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-P3-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14280	3/10/2023	3	1870

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/11/2022	5/8/2022	5/19/2022	4/11/2022	5/8/2022	5/19/2022
Gross Sample Counts	12	19	20	2654	2168	4392
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.20	0.32	0.17	44.23	36.13	36.60
Gross Background Counts	8	58	58	2355	21283	20829
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.10	0.10	39.25	35.47	34.72
Net Sample CPM	0.07	0.22	0.07	4.98	0.66	1.89
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.61E+06	5.61E+06	5.61E+06	5.61E+06	5.61E+06	5.61E+06
LLD (counts)	16	11	15	229	162	236
MDC (µCi/mL)	9.60E-14	6.72E-14	4.54E-14	1.94E-12	1.37E-12	9.97E-13
MDC as a % of the DAC_{eff}	19.1976%	13.4360%	9.0730%	0.0242%	0.0172%	0.01%
Activity (µCi/mL)	2.38E-14	7.84E-14	2.49E-14	2.53E-12	3.36E-13	9.57E-13
Activity as a % of the DAC	4.7519%	15.6812%	4.9895%	0.0316%	0.0042%	0.0120%
Estimated Weekly Dose [mrem]	4.75E+00	1.57E+01	4.99E+00	3.16E-02	4.20E-03	1.20E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts were performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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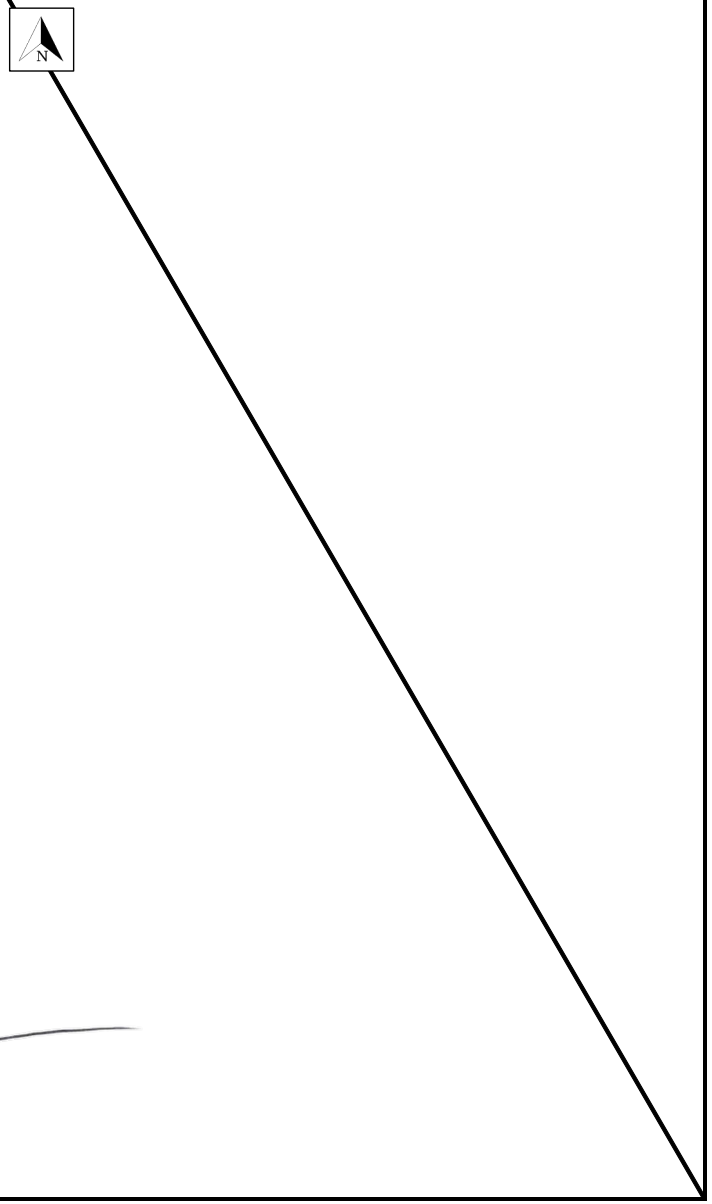
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #4 Upwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-P3-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14280	3/10/2023	3	1815

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/18/2022	5/7/2022	5/20/2022	4/18/2022	5/7/2022	5/20/2022
Gross Sample Counts	18	15	26	2172	2018	4711
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.30	0.25	0.22	36.20	33.63	39.26
Gross Background Counts	8	49	61	2322	19487	21263
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.10	38.70	32.48	35.44
Net Sample CPM	0.17	0.17	0.12	-2.50	1.16	3.82
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.45E+06	5.45E+06	5.45E+06	5.45E+06	5.45E+06	5.45E+06
LLD (counts)	16	11	16	227	155	238
MDC (µCi/mL)	9.89E-14	6.51E-14	4.77E-14	1.98E-12	1.35E-12	1.04E-12
MDC as a % of the DAC_{eff}	19.7793%	13.0208%	9.5398%	0.0248%	0.0169%	0.01%
Activity (µCi/mL)	6.12E-14	6.18E-14	4.22E-14	-1.31E-12	6.04E-13	2.00E-12
Activity as a % of the DAC	12.2397%	12.3621%	8.4454%	-0.0163%	0.0076%	0.02%
Estimated Weekly Dose [mrem]	1.22E+01	1.24E+01	8.45E+00	-1.63E-02	7.55E-03	2.50E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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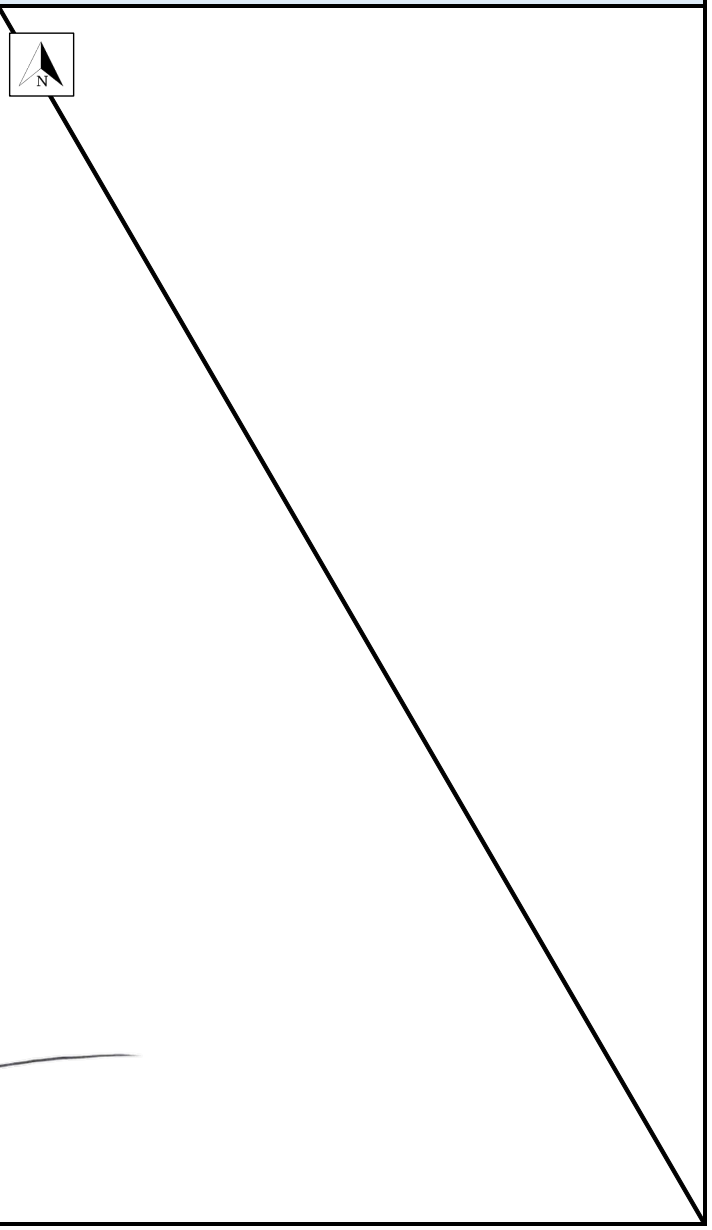
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #4 Upwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-P3-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14280	3/10/2023	3	1725

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	4/26/2022	5/6/2022	5/21/2022	4/26/2022	5/6/2022	5/21/2022
Gross Sample Counts	6	5	10	2216	2192	4278
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.10	0.08	0.08	36.93	36.53	35.65
Gross Background Counts	8	51	52	2347	20235	22813
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.09	0.09	39.12	33.73	38.02
Net Sample CPM	-0.03	0.00	0.00	-2.18	2.81	-2.37
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06	5.18E+06
LLD (counts)	16	11	15	228	158	246
MDC (µCi/mL)	1.04E-13	6.95E-14	4.71E-14	2.10E-12	1.45E-12	1.13E-12
MDC as a % of the DAC_{eff}	20.8113%	13.8989%	9.4157%	0.0262%	0.0181%	0.01%
Activity (µCi/mL)	-1.29E-14	-6.44E-16	-1.29E-15	-1.20E-12	1.55E-12	-1.31E-12
Activity as a % of the DAC	-2.5757%	-0.1288%	-0.2576%	-0.0150%	0.0193%	-0.02%
Estimated Weekly Dose [mrem]	-2.58E+00	-1.29E-01	-2.58E-01	-1.50E-02	1.93E-02	-1.63E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer background and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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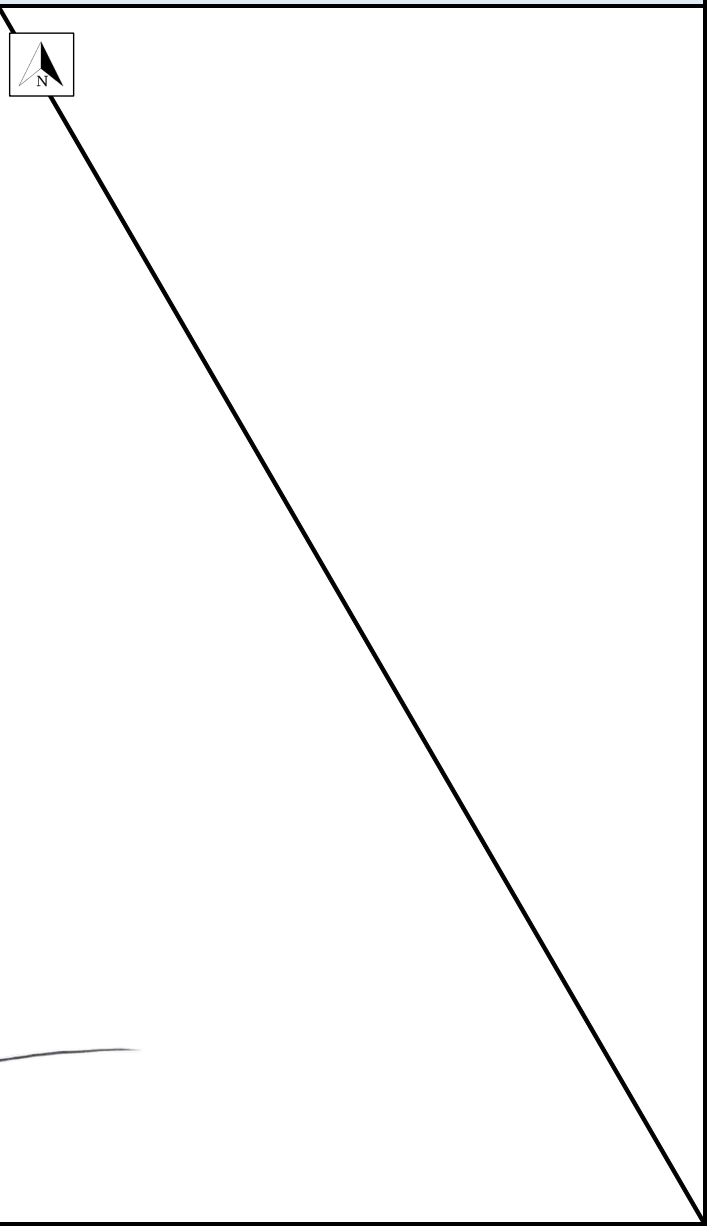
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Perimeter #4 Upwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-P3-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
RCA Perimeter	Gil Air	14280	3/10/2023	3	2330

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030	3030	3030	3030	3030
Instrument Serial Number	247862	247862	247862	247862	247862	247862
Counting System Detector	NA	NA	NA	NA	NA	NA
Detector Serial Number	NA	NA	NA	NA	NA	NA
Cal Due Date	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023	2/21/2023
Counting Date	5/2/2022	5/9/2022	5/22/2022	5/2/2022	5/9/2022	5/22/2022
Gross Sample Counts	10	8	19	2307	2241	4511
Sample Count Time (min)	60	60	120	60	60	120
Gross Sample CPM	0.17	0.13	0.16	38.45	37.35	37.59
Gross Background Counts	8	48	50	2082	19002	19327
Background Count Time (min)	60	600	600	60	600	600
Background CPM	0.13	0.08	0.08	34.70	31.67	32.21
Net Sample CPM	0.03	0.05	0.08	3.75	5.68	5.38
Counter Efficiency	32.25%	32.25%	32.25%	22.64%	22.64%	22.64%
Volume (mL)	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06	6.99E+06
LLD (counts)	16	11	14	215	153	227
MDC (µCi/mL)	7.70E-14	5.03E-14	3.43E-14	1.46E-12	1.04E-12	7.71E-13
MDC as a % of the DAC_{eff}	15.4075%	10.0681%	6.8632%	0.0183%	0.0130%	0.01%
Activity (µCi/mL)	9.53E-15	1.53E-14	2.15E-14	1.53E-12	2.31E-12	2.19E-12
Activity as a % of the DAC	1.9069%	3.0510%	4.2904%	0.0191%	0.0289%	0.03%
Estimated Weekly Dose [mrem]	1.91E+00	3.05E+00	4.29E+00	1.91E-02	2.89E-02	2.74E-02

Approximate sampler location denoted below with ▲



Comments: Results below 10% of most conservative DACs. Recounts performed using longer bakground and sample count times to meet project MDC goals.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount A. Segarra

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL **TB =** BKG Count Time **TS =** Sample Count Time

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB) **RB =** BKG Count Rate **FE =** Filter Efficiency (0.7)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF **SAF =** Self Absorption Factor (0.998) **Sr90** 8E-09 µCi/mL

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF **Th232** 5E-13 µCi/mL

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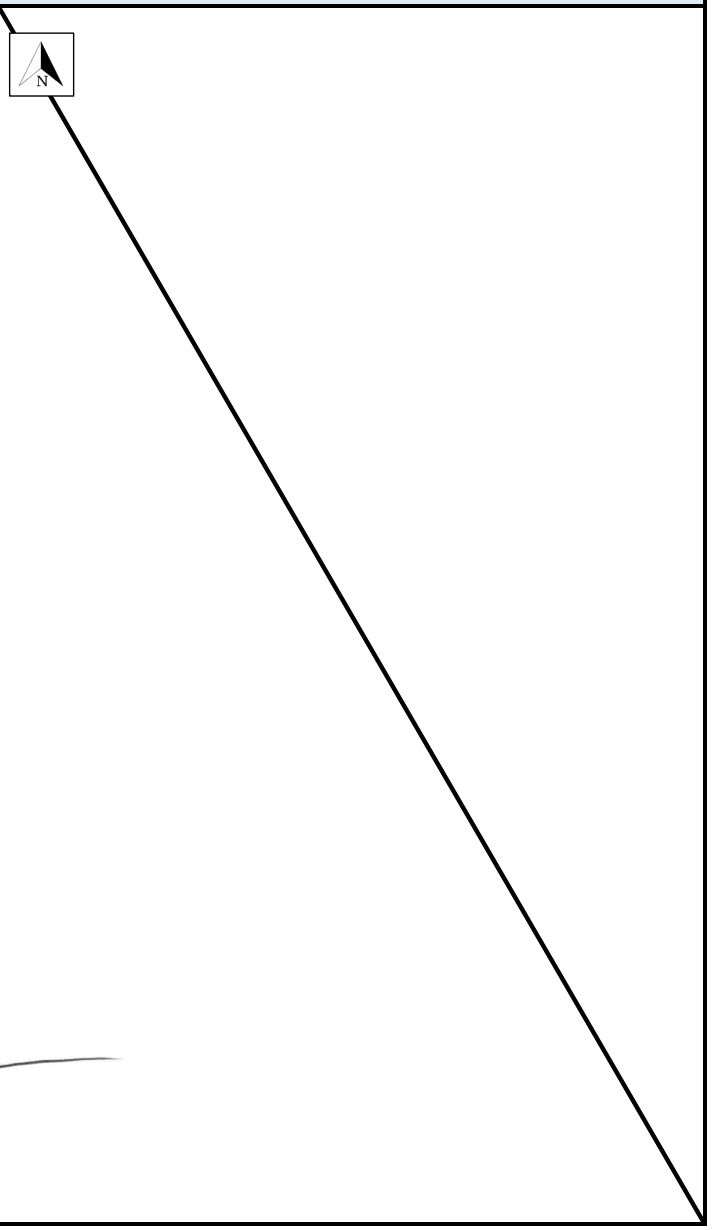
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Upwind	Weekly Routine	4/4/2022	4/7/2022	A.Segarra/J.Garza	AS-UW-220407

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	3790	10/12/2022	60	2020

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/11/2022	5/8/2022		4/11/2022	5/8/2022	
Gross Sample Counts	15	9		2841	2334	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.25	0.15		47.35	38.90	
Gross Background Counts	8	58		2355	21283	
Background Count Time (min)	60	600		60	600	
Background CPM	0.13	0.10		39.25	35.47	
Net Sample CPM	0.12	0.05		8.10	3.43	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.21E+08	1.21E+08		1.21E+08	1.21E+08	
LLD (counts)	16	11		229	162	
MDC (µCi/mL)	4.44E-15	3.11E-15		8.96E-14	6.35E-14	
MDC as a % of the DAC_{eff}	0.8886%	0.6219%		0.0011%	0.0008%	
Activity (µCi/mL)	1.92E-15	8.80E-16		1.90E-13	8.06E-14	
Activity as a % of the DAC	0.3849%	0.1760%		0.0024%	0.0010%	
Estimated Weekly Dose [mrem]	3.85E-01	1.76E-01		2.38E-03	1.01E-03	

Approximate sampler location denoted below with △



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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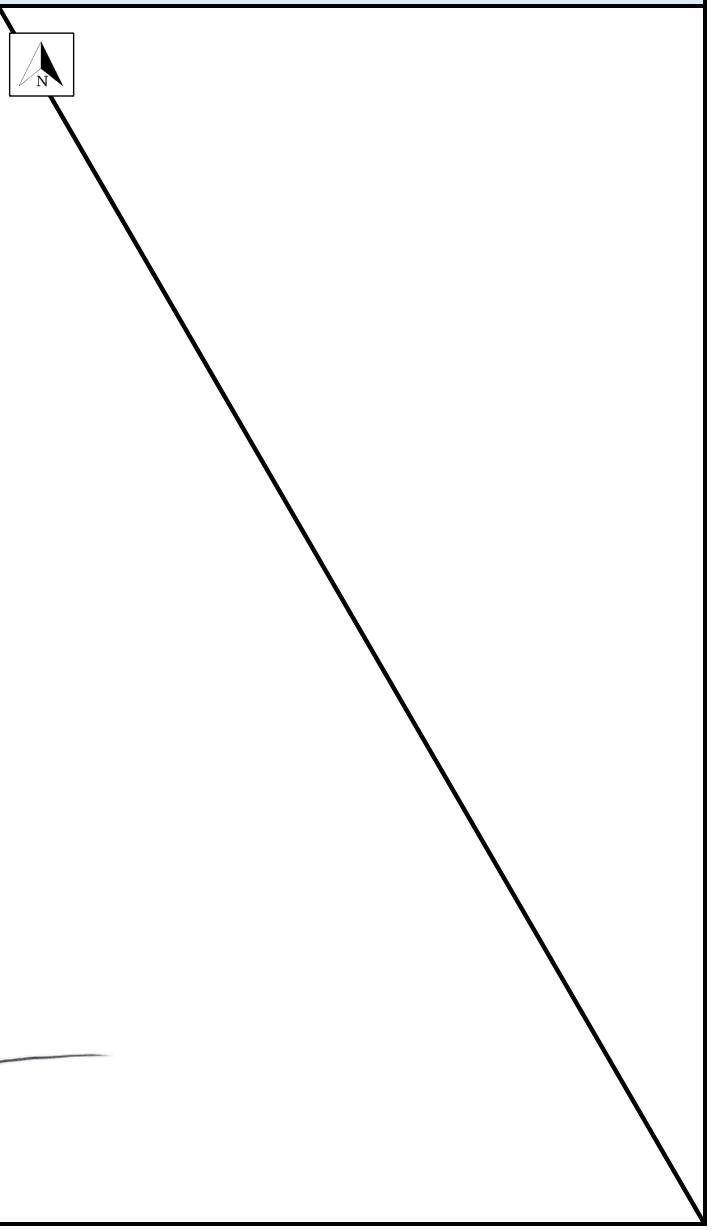
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Upwind	Weekly Routine	4/12/2022	4/15/2022	A.Segarra/J.Garza	AS-UW-220415

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	3790	10/12/2022	60	1755

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/19/2022	5/7/2022		4/19/2022	5/7/2022	
Gross Sample Counts	9	8		2280	2151	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.15	0.13		38.00	35.85	
Gross Background Counts	4	49		2256	19487	
Background Count Time (min)	60	600		60	600	
Background CPM	0.07	0.08		37.60	32.48	
Net Sample CPM	0.08	0.05		0.40	3.37	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.05E+08	1.05E+08		1.05E+08	1.05E+08	
LLD (counts)	12	11		224	155	
MDC (µCi/mL)	3.89E-15	3.37E-15		1.01E-13	7.00E-14	
MDC as a % of the DAC_{eff}	0.7788%	0.6733%		0.0013%	0.0009%	
Activity (µCi/mL)	1.58E-15	9.81E-16		1.08E-14	9.12E-14	
Activity as a % of the DAC	0.3165%	0.1962%		0.0001%	0.0011%	
Estimated Weekly Dose [mrem]	3.16E-01	1.96E-01		1.35E-04	1.14E-03	

Approximate sampler location denoted below with △



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

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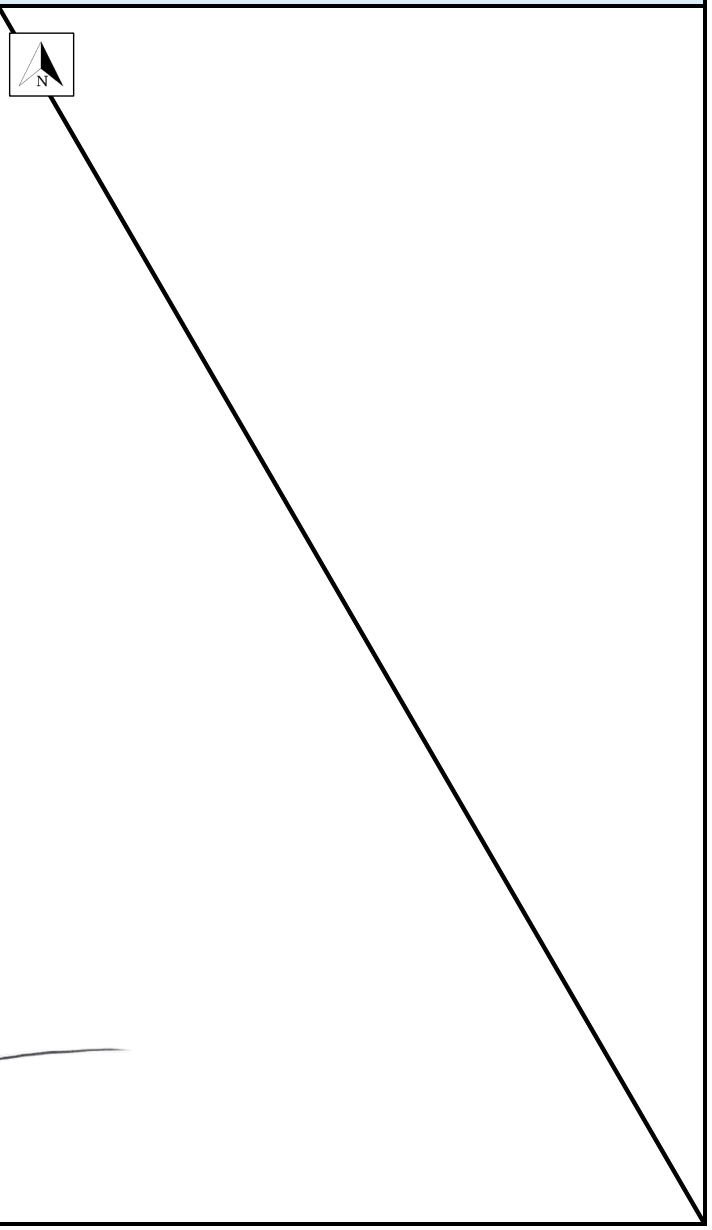
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Upwind	Weekly Routine	4/18/2022	4/20/2022	A.Segarra/J.Garza	AS-UW-220420

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	3790	10/12/2022	60	1775

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	4/25/2022	5/6/2022		4/25/2022	5/6/2022	
Gross Sample Counts	19	17		2161	2205	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.32	0.28		36.02	36.75	
Gross Background Counts	7	51		2352	20235	
Background Count Time (min)	60	600		60	600	
Background CPM	0.12	0.09		39.20	33.73	
Net Sample CPM	0.20	0.20		-3.18	3.03	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.07E+08	1.07E+08		1.07E+08	1.07E+08	
LLD (counts)	15	11		229	158	
MDC (µCi/mL)	4.79E-15	3.38E-15		1.02E-13	7.05E-14	
MDC as a % of the DAC_{eff}	0.9581%	0.6754%		0.0013%	0.0009%	
Activity (µCi/mL)	3.75E-15	3.72E-15		-8.51E-14	8.09E-14	
Activity as a % of the DAC	0.7509%	0.7447%		-0.0011%	0.0010%	
Estimated Weekly Dose [mrem]	7.51E-01	7.45E-01		-1.06E-03	1.01E-03	

Approximate sampler location denoted below with △



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount _____

Reviewed By/Date Chris Weddermann 5/26/2022

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL

PermaFix® environmental services
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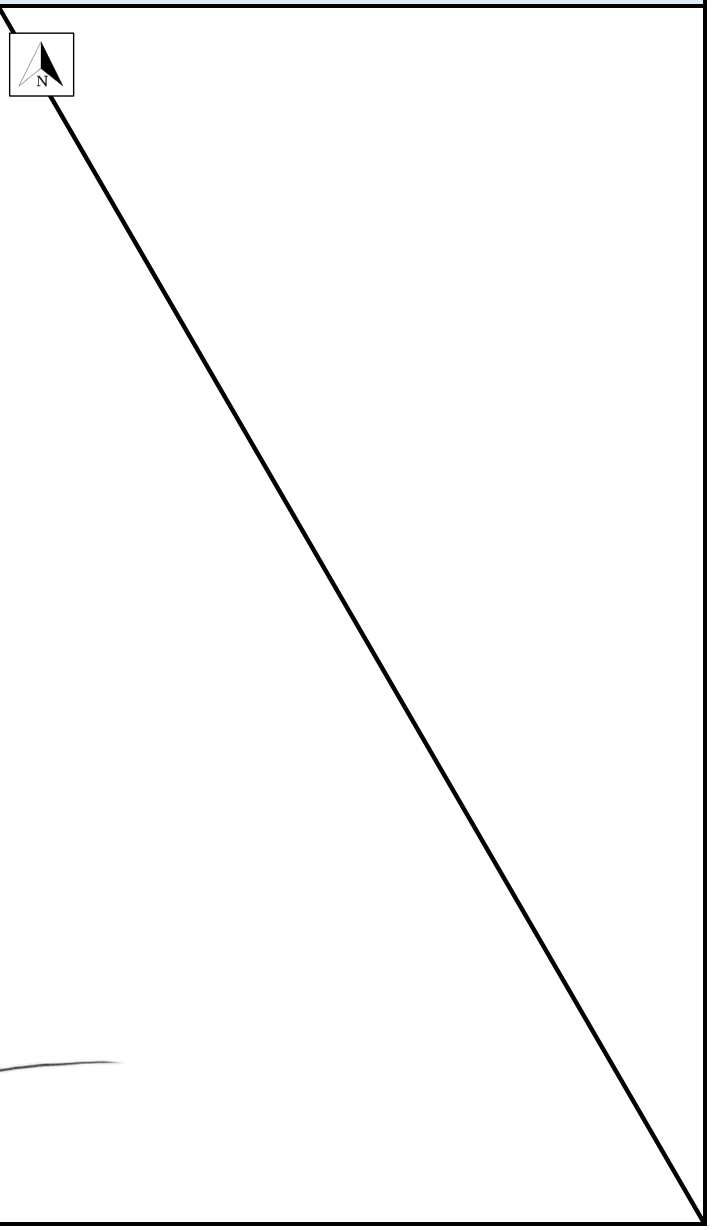
Air Sampling Results Data Sheet

Air Sample Location	Activity	Start Date	End Date	Collected By	Sample ID
Parcel E-2 Upwind	Weekly Routine	4/25/2022	4/28/2022	A.Segarra/J.Garza	AS-UW-220428

Sample Type	Sampler Model	Sampler Number	Cal Due	Average Flow Rate (LPM)	Total Run Time (min)
Perimeter	LV-1	3790	10/12/2022	60	1775

Counting Data	Alpha			Beta-Gamma		
	Initial Count	Recount 1	Recount 2	Initial Count	Recount 1	Recount 2
Counting System Instrument	3030	3030		3030	3030	
Instrument Serial Number	247862	247862		247862	247862	
Counting System Detector	NA	NA		NA	NA	
Detector Serial Number	NA	NA		NA	NA	
Cal Due Date	2/21/2023	2/21/2023		2/21/2023	2/21/2023	
Counting Date	5/3/2022	5/9/2022		5/3/2022	5/9/2022	
Gross Sample Counts	10	8		2253	2175	
Sample Count Time (min)	60	60		60	60	
Gross Sample CPM	0.17	0.13		37.55	36.25	
Gross Background Counts	3	48		2160	19002	
Background Count Time (min)	60	600		60	600	
Background CPM	0.05	0.08		36.00	31.67	
Net Sample CPM	0.12	0.05		1.55	4.58	
Counter Efficiency	32.25%	32.25%		22.64%	22.64%	
Volume (mL)	1.07E+08	1.07E+08		1.07E+08	1.07E+08	
LLD (counts)	11	11		219	153	
MDC (µCi/mL)	3.46E-15	3.30E-15		9.77E-14	6.84E-14	
MDC as a % of the DAC_{eff}	0.6920%	0.6608%		0.0012%	0.0009%	
Activity (µCi/mL)	2.19E-15	1.00E-15		4.14E-14	1.22E-13	
Activity as a % of the DAC	0.4380%	0.2002%		0.0005%	0.0015%	
Estimated Weekly Dose [mrem]	4.38E-01	2.00E-01		5.18E-04	1.53E-03	

Approximate sampler location denoted below with △



Comments: Results below 10% of most conservative DACs.

Technician Performing Initial count A. Segarra

Technician Performing 1st Recount A. Segarra

Technician Performing 2nd Recount _____

Reviewed By/Date Chris Weddermann 5/26/22

Volume = (Liters)(1.0e3) = mL

LLD = 3+3.29*SQRT(RB*TS)*(1+(TS/TB)

MDC = LLD/TS/Eff/Vol/2.22E6/FE/SAF

Activity µCi/mL = Net CPM/Counter Efficiency/Sample Volume/2.22E6/FE/SAF

TB = BKG Count Time

RB = BKG Count Rate

SAF = Self Absorption Factor (0.998)

TS = Sample Count Time

FE = Filter Efficiency (0.7)

Sr90 8E-09 µCi/mL

Th232 5E-13 µCi/mL