

AIR MONITORING SUMMARY REPORT NO. 01

Parcel E Remedial Action – Phase 1 Hunters Point Naval Shipyard San Francisco, California

Data from November 20, 2019 through November 30, 2019

Contract Number: N62473-12-D-2005

Contract Task Order: 0024

Prepared for:



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Table of Contents

List of Figures	i
List of Tables	i
List of Attachments	i
Acronyms and Abbreviations	ii
1.0 Introduction	1
2.0 Monitoring Site Locations	1
3.0 Analytical Methods	2
4.0 Analysis of Dust and Air Monitoring Data	2
5.0 Air Monitoring Results	3
6.0 References	4

List of Figures

Figure 1 Air Monitoring Locations

List of Tables

Table 1 Air Monitoring Threshold Criteria
Table 2 Air Monitoring Report Summary

List of Attachments

Attachment 1 Air Sampling Results

Acronyms and Abbreviations

APTIM	APTIM Federal Services LLC
CFR	Code of Federal Regulations
DCP	Dust Control Plan
EPA	U.S. Environmental Protection Agency
HPNS	Hunters Point Naval Shipyard
L/min	liters per minute
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PM10	particulate matter larger than 10 microns in size
TSP	total suspended particulates
Work Plan	<i>Final Remedial Action Work Plan, Parcel E Remedial Action – Phase 1, Hunters Point Naval Shipyard, San Francisco, California</i>

1.0 Introduction

APTIM is providing environmental remediation services to the U.S. Navy under the Environmental Multiple Award Contract, Contract No. N62473-12-D-2005, Contract Task Order 0024. APTIM is performing air monitoring at Hunters Point Naval Shipyard (HNPS) in accordance with the Dust Control Plan (DCP) included in Appendix C of the *Final Remedial Action Work Plan, Parcel E Remedial Action – Phase 1, Hunters Point Naval Shipyard, San Francisco, California* (Work Plan; APTIM, 2019). The DCP describes procedures that minimize dust during work activities, and requires air monitoring to ensure these procedures are effective. The DCP helps prevent exposure of residents and construction crews to potential airborne chemicals of concern, and dust from the work area.

This summary report describes the following:

- Where and how air monitoring samples are collected
- What test methods are used to analyze air monitoring samples
- How air monitoring data are evaluated

This summary report also presents the air monitoring test results from November 20, 2019 through November 30, 2019 and compares the results with the established action levels included in the Work Plan (APTIM, 2019).

2.0 Monitoring Site Locations

Air monitoring stations were mobilized to collect air samples upwind and downwind of work areas for the duration of the project. The predominant wind direction at HPNS is from the west. Locations of air monitoring stations and wind direction are shown on Figure 1. Air monitoring is being performed to help ensure effective dust control. The locations of the air monitoring stations were determined based on the prevailing wind direction and can be modified as needed. A windsock installed onsite is used to show wind direction and weather forecasts are checked daily at www.noaa.gov. Monitoring stations remain stationary while sampling is being conducted. Each monitoring station includes three separate monitoring systems for:

1. Total suspended particulates (TSP) and for arsenic, lead and manganese
2. Particulate matter larger than 10 microns in size (PM10)
3. Asbestos.

3.0 Analytical Methods

TSP, Arsenic, Lead, and Manganese. TSP samples are collected with a high-volume (39 to 60 cubic feet per minute) air sampler in accordance with U.S. Environmental Protection Agency’s (EPA’s) reference sampling method for TSP, described in Title 40 Code of Federal Regulations (CFR), Part 50, Appendix B. Each sample is collected on a filter over an approximately 8-hour work day period; the filter is then weighed to determine the amount of TSP collected. Once the amount of TSP has been determined, the sample is analyzed for arsenic, lead and manganese in accordance with one of the IO-3 methods identified in the *Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air* (EPA, 1999a). The equipment specifications and sampling procedures used, including the sampling apparatus, filters, equipment accuracy, equipment calibration, and quality assurance checks, all conform to those specified in the analytical method.

PM10. Air samples are collected and analyzed for PM10 in accordance with EPA’s reference sampling method for PM10, described in 40 CFR Part 50, Appendix J. Each sample is collected on a filter over an approximately 8-hour work day period; the filter is then weighed to evaluate the concentrations of PM10 in ambient air.

Asbestos. Air samples are collected and analyzed for asbestos in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 7400, in the *NIOSH Manual of Analytical Methods* (NIOSH, 1994). Method 7400 requires that samples be collected on three-piece cellulose ester filters, which are fitted with conductive cowlings, at a sampling rate of between 0.5 liter per minute (L/min) and 16 L/min.

4.0 Analysis of Dust and Air Monitoring Data

Analytical results from air monitoring samples are compared with the action levels listed in Table 1 and in accordance with the Final Work Plan (APTIM, 2019).

Table 1 Air Monitoring Action Levels

Test Parameters	Action Levels	Basis
PM10	5,000 µg/m ³	Cal/OSHA PEL ^a
TSP	0.5 mg/m ³	Basewide HPNS Level selected to minimize overall permissible dust release from sites
Arsenic	10 µg/m ³	Cal/OSHA PEL

Test Parameters	Action Levels	Basis
Lead	50 µg/m ³	Cal/OSHA PEL
Manganese	200 µg/m ³	Cal/OSHA PEL
Asbestos	0.1 fiber/cm ³	Cal/OSHA PEL

Notes:

^a – Cal/OSHA PEL for particulates not otherwise regulated (respiratory) used for PM10.

µg/m³ – micrograms per cubic meter

Cal/OSHA – California Occupational Safety and Health Administration

fiber/cm³ – fibers per cubic centimeter

HPNS – Hunters Point Naval Shipyard

mg/m³ – milligrams per cubic meter

PEL – permissible exposure limit

PM10 – particulate matter smaller than 10 microns in diameter

TSP – total suspended particulates

5.0 Air Monitoring Results

Weather information (including ambient pressure and temperature data) and air monitoring results are presented in the tables included as Attachment 1. Data were collected from Crisp Rd upwind Station and Building 606 downwind Station. Below is a table listing each report, the dates covered in each report, and if there were any anomalies in the sample collection/sample results. If there is an anomaly identified, further clarification is provided below.

Table 2 Air Monitoring Report Summary

Interim Report Number	Date Range	Anomaly Noted (Yes/No)
01	11/20/2019 – 11/30/2019	Yes

Report 01: Samples were not collected on November 27, 2019 because rain and/or wet field conditions prohibited earthmoving activities. Due to the Thanksgiving Holiday, no samples were collected November 28 through 29, 2019. All air monitoring results collected during this monitoring period were below the action levels identified in Section 4.0.

6.0 References

APTIM, 2019, *Final Remedial Action Work Plan, Parcel E Remedial Action – Phase I, Hunters Point Naval Shipyard, California*, October.

National Institute for Occupational Safety and Health (NIOSH), 1994, *NIOSH Manual of Analytical Methods, Method 7400*, August.

U.S. Environmental Protection Agency (EPA), 1999a, *Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air*.

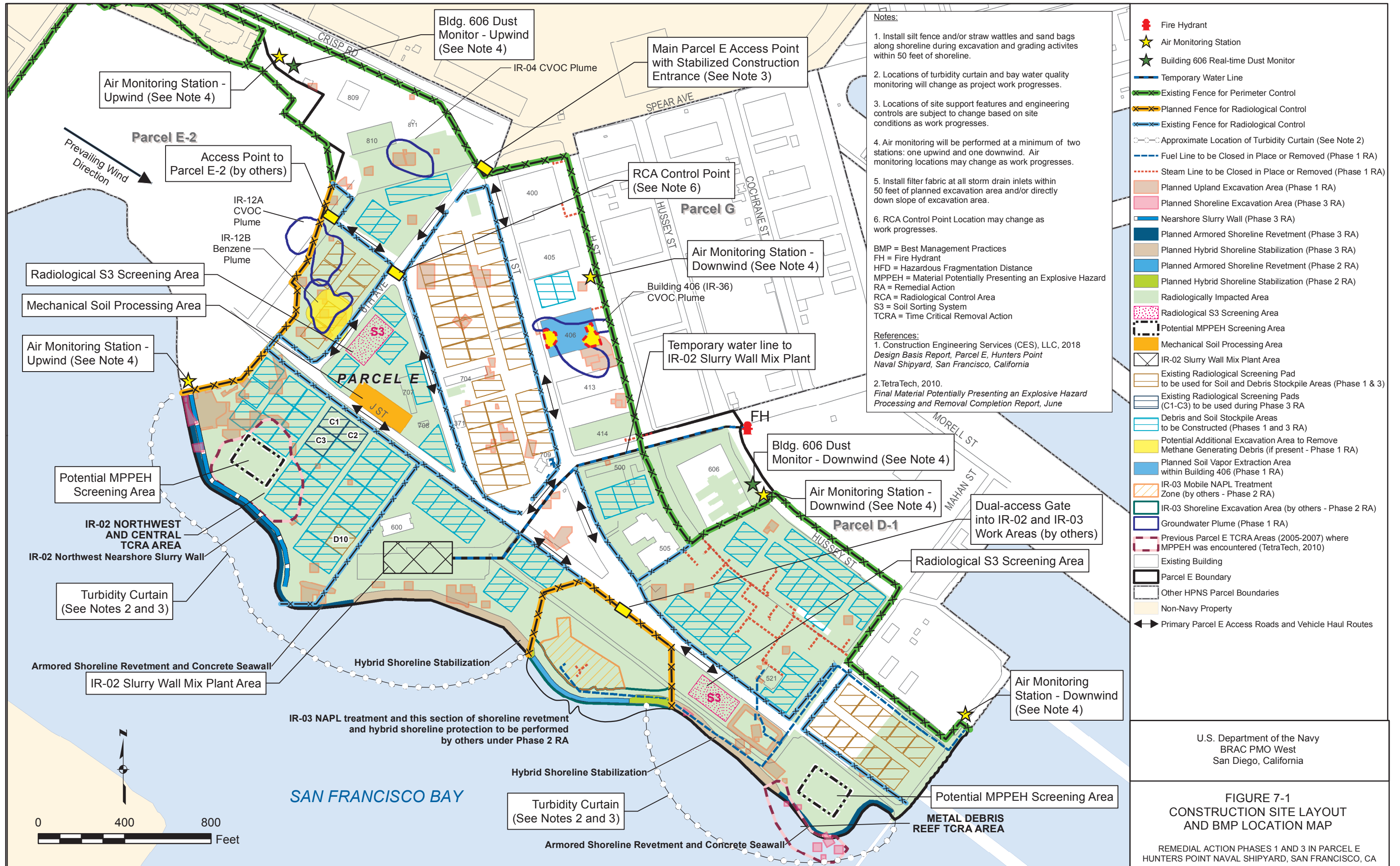
EPA, 1999b, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition. Compendium Method TO-4A, Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)*. EPA/625/R-96-010b, Office of Research and Development, January. Available Online at: <<http://www.epa.gov/ttnamti1/files/ambient/airtox/to-4ar2r.pdf>>.

EPA, 1999c, *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition. Compendium Method TO-13A, Determination of Polycyclic Aromatic Hydrocarbons in Ambient Air Using Gas Chromatography/Mass Spectrometry (GC/MS)*, EPA/625/R-96/010b, January. Available Online at: <<http://www.epa.gov/ttnamti1/files/ambient/airtox/to-13arr.pdf>>.

Figure

Figure 1
Air Monitoring Locations





Notes:

1. Install silt fence and/or straw wattles and sand bags along shoreline during excavation and grading activities within 50 feet of shoreline.
2. Locations of turbidity curtain and bay water quality monitoring will change as project work progresses.
3. Locations of site support features and engineering controls are subject to change based on site conditions as work progresses.
4. Air monitoring will be performed at a minimum of two stations: one upwind and one downwind. Air monitoring locations may change as work progresses.
5. Install filter fabric at all storm drain inlets within 50 feet of planned excavation area and/or directly down slope of excavation area.
6. RCA Control Point Location may change as work progresses.

BMP = Best Management Practices
FH = Fire Hydrant
HFD = Hazardous Fragmentation Distance
MPPEH = Material Potentially Presenting an Explosive Hazard
RA = Remedial Action
RCA = Radiological Control Area
S3 = Soil Sorting System
TCRA = Time Critical Removal Action

References:

1. Construction Engineering Services (CES), LLC, 2018 *Design Basis Report, Parcel E, Hunters Point Naval Shipyard, San Francisco, California*
2. TetraTech, 2010. *Final Material Potentially Presenting an Explosive Hazard Processing and Removal Completion Report, June*

- Fire Hydrant
- Air Monitoring Station
- Building 606 Real-time Dust Monitor
- Temporary Water Line
- Existing Fence for Perimeter Control
- Planned Fence for Radiological Control
- Existing Fence for Radiological Control
- Approximate Location of Turbidity Curtain (See Note 2)
- Fuel Line to be Closed in Place or Removed (Phase 1 RA)
- Steam Line to be Closed in Place or Removed (Phase 1 RA)
- Planned Upland Excavation Area (Phase 1 RA)
- Planned Shoreline Excavation Area (Phase 3 RA)
- Nearshore Slurry Wall (Phase 3 RA)
- Planned Armored Shoreline Revetment (Phase 3 RA)
- Planned Hybrid Shoreline Stabilization (Phase 3 RA)
- Planned Armored Shoreline Revetment (Phase 2 RA)
- Planned Hybrid Shoreline Stabilization (Phase 2 RA)
- Radiologically Impacted Area
- Radiological S3 Screening Area
- Potential MPPEH Screening Area
- Mechanical Soil Processing Area
- IR-02 Slurry Wall Mix Plant Area
- Existing Radiological Screening Pad to be used for Soil and Debris Stockpile Areas (Phase 1 & 3)
- Existing Radiological Screening Pads (C1-C3) to be used during Phase 3 RA
- Debris and Soil Stockpile Areas to be Constructed (Phases 1 and 3 RA)
- Potential Additional Excavation Area to Remove Methane Generating Debris (if present - Phase 1 RA)
- Planned Soil Vapor Extraction Area within Building 406 (Phase 1 RA)
- IR-03 Mobile NAPL Treatment Zone (by others - Phase 2 RA)
- IR-03 Shoreline Excavation Area (by others - Phase 2 RA)
- Groundwater Plume (Phase 1 RA)
- Previous Parcel E TCRA Areas (2005-2007) where MPPEH was encountered (TetraTech, 2010)
- Existing Building
- Parcel E Boundary
- Other HPNS Parcel Boundaries
- Non-Navy Property
- Primary Parcel E Access Roads and Vehicle Haul Routes

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 BRAC PMO West
 San Diego, California

**FIGURE 7-1
 CONSTRUCTION SITE LAYOUT
 AND BMP LOCATION MAP**

REMEDIAL ACTION PHASES 1 AND 3 IN PARCEL E
 HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CA

Attachment 1
Air Sampling Results

Table 1
Ambient Pressure and Temperature Monitoring Results

Date	Ambient Pressure (in Hg)	Ambient Temperature (°C)
20-Nov-19	30.24	8.7
21-Nov-19	30.24	11.2
22-Nov-19	30.30	15.1
25-Nov-19	30.22	11.2
26-Nov-19	30.20	12.3
27-Nov-19	30.12	13.9
28-Nov-19	30.02	12.7
29-Nov-19	30.12	17.6

Notes:

°C - degrees Celsius

in Hg - inches of mercury

Ambient pressure and ambient temperature data were gathered from the wunderground weather website (www.wunderground.com). Data were collected from station KCASANFR58 at 1200.

Table 2
TSP and Metals Monitoring Results

Date	Sample Location	Sampling Period (hours)	TSP (mg/m ³)	TSP Exceedance? (Yes/No)	Arsenic (µg/m ³)	Arsenic Exceedance? (Yes/No)	Lead (µg/m ³)	Lead Exceedance? (Yes/No)	Manganese (µg/m ³)	Manganese Exceedance? (Yes/No)
20-Nov-19	Upwind	9.8	0.076	No	0.096	No	<0.016	No	0.050	No
20-Nov-19	Downwind	9.9	0.072	No	0.130	No	<0.016	No	0.022	No
21-Nov-19	Upwind	7.5	0.071	No	0.148	No	<0.016	No	0.050	No
21-Nov-19	Downwind	7.5	0.041	No	0.164	No	<0.016	No	<0.016	No
22-Nov-19	Upwind	8.8	0.060	No	0.122	No	0.023	No	0.203	No
22-Nov-19	Downwind	8.8	0.045	No	0.142	No	<0.016	No	<0.016	No
25-Nov-19	Upwind	8.9	0.052	No	0.116	No	<0.016	No	0.051	No
25-Nov-19	Downwind	8.7	0.043	No	0.127	No	<0.016	No	<0.016	No
26-Nov-19	Upwind	7.4	0.038	No	0.145	No	<0.016	No	<0.016	No
26-Nov-19	Downwind	7.5	0.024	No	0.122	No	<0.016	No	<0.016	No
27-Nov-19	Upwind	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
27-Nov-19	Downwind	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
28-Nov-19	Upwind	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
28-Nov-19	Downwind	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
29-Nov-19	Upwind	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
29-Nov-19	Downwind	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2

Notes:

Sample locations are shown on Figure 1.

The threshold criteria are as follows: TSP = 0.5 mg/m³, arsenic = 10 µg/m³, lead = 50 µg/m³, manganese = 200 µg/m³.

The detection limit for TSP is 0.06 µg/m³ assuming a minimum sample volume of 1,600 m³. The detection limits for arsenic, lead and manganese are 16 ng/m³ assuming minimum sample volumes of 1,600 m³.

µg/m³ - micrograms per cubic meter

mg/m³ - milligrams per cubic meter

N/A - not applicable

ng/m³ - nanograms per cubic meter

TSP - total suspended particulates

Note 1 - Sample not collected due to inclement conditions: Rain.

Note 2 - Samples were not collected as project site was closed for holidays.

**Table 3
PM10 Monitoring Results**

Date	Sample Location	Sampling Period (hours)	PM10 ($\mu\text{g}/\text{m}^3$)	PM10 Exceedance? (Yes/No)
20-Nov-19	Upwind	9.8	43.7	No
20-Nov-19	Downwind	9.9	29.7	No
21-Nov-19	Upwind	7.5	45.5	No
21-Nov-19	Downwind	7.5	33.4	No
22-Nov-19	Upwind	8.8	5.35	No
22-Nov-19	Downwind	8.8	38.8	No
25-Nov-19	Upwind	8.9	31.3	No
25-Nov-19	Downwind	8.7	24.1	No
26-Nov-19	Upwind	7.4	23.1	No
26-Nov-19	Downwind	7.5	16.4	No
27-Nov-19	Upwind	Note 1	Note 1	Note 1
27-Nov-19	Downwind	Note 1	Note 1	Note 1
28-Nov-19	Upwind	Note 2	Note 2	Note 2
28-Nov-19	Downwind	Note 2	Note 2	Note 2
29-Nov-19	Upwind	Note 2	Note 2	Note 2
29-Nov-19	Downwind	Note 2	Note 2	Note 2

Notes:

Sample locations are shown on Figure 1.

The threshold value for PM10 is 5,000 $\mu\text{g}/\text{m}^3$.

The detection limit for PM10 is 0.06 $\mu\text{g}/\text{m}^3$ assuming a minimum sample volume of 1,600 m^3 .

$\mu\text{g}/\text{m}^3$ - micrograms per cubic meter

N/A - not applicable

PM10 - particulate matter smaller than 10 microns in diameter

Note 1 - Sample not collected due to inclement conditions: Rain.

Note 2 - Samples were not collected as project site was closed for holidays.

**Table 4
Asbestos Monitoring Results**

Date	Sample Location	Sampling Period (hours)	Asbestos (fibers/cm³)	Asbestos Exceedance? (Yes/No)
20-Nov-19	Upwind	9.8	0.0030	No
20-Nov-19	Downwind	9.9	<0.002	No
21-Nov-19	Upwind	7.5	<0.003	No
21-Nov-19	Downwind	7.5	<0.003	No
22-Nov-19	Upwind	8.8	<0.003	No
22-Nov-19	Downwind	8.8	<0.003	No
25-Nov-19	Upwind	8.9	<0.003	No
25-Nov-19	Downwind	8.7	<0.003	No
26-Nov-19	Upwind	7.4	<0.003	No
26-Nov-19	Downwind	7.5	<0.003	No
27-Nov-19	Upwind	Note 1	Note 1	Note 1
27-Nov-19	Downwind	Note 1	Note 1	Note 1
28-Nov-19	Upwind	Note 2	Note 2	Note 2
28-Nov-19	Downwind	Note 2	Note 2	Note 2
29-Nov-19	Upwind	Note 2	Note 2	Note 2
29-Nov-19	Downwind	Note 2	Note 2	Note 2

Notes:

Sample locations are shown on Figure 1.

The threshold value for asbestos is 0.1 fibers/cm³.

The detection limit is 0.003 fibers/cm³ assuming a minimum sample volume of 900 liters.

fibers/cm³ - fibers per cubic centimeter

Note 1 - Sample not collected due to inclement conditions: Rain.

Note 2 - Samples were not collected as project site was closed for holidays.