Geosyntec consultants

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# M E M O R A N D U M

**TO:** Justin Phalen, Slate Geotechnical Consultants, Inc.
Bernard R. Wair, United States Army Corps of Engineers

**FROM:** Erin Dunbar, Geosyntec Consultants, Inc.
Howard Cumberland, Geosyntec Consultants, Inc.
Keith Kroeger, Geosyntec Consultants, Inc.

**DATE:** 5 February 2024

**SUBJECT:** Oakland Harbor Inner Turning Basin – November 2023 Environmental Sampling

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This technical memorandum has been prepared to provide Slate Geotechnical Consultants, Inc. (Slate) and the United States Army Corps of Engineers (USACE) with the laboratory results of environmental sampling completed in November 2023 at the Oakland Harbor Inner Turning Basin (Site) in Oakland, California. The Environmental Sediment Sampling was completed as part of the Oakland Turning Basin Widening Study (Project). The sediment sampling was completed in accordance with the October 2023 Environmental Sediment Sampling Work Plan (Work Plan) prepared by Geosyntec Consultants (Geosyntec). The Work Plan was developed for the USACE as part of the Statement of Work (SOW) for Contract W192P7-23-D-0002, Task Order (TO) W912P7-23-F-0033.

The Oakland Harbor is located within Alameda County of California (Figure 1). The Oakland Harbor consists of an Outer and Inner Harbor. The objective of the Oakland Turning Basin Widening Study is to evaluate the feasibility of widening and deepen the existing Oakland Inner Harbor turning basin to accommodate larger, deep draft vessels. Sediment from north of the existing Inner Harbor Turning Basin is planned for removal during the widening study requiring sediment characterization. This memorandum provides a sample collection summary and the laboratory analytical data to support the sediment characterization of the Site.

## ENVIRONMENTAL SAMPLING

Geosyntec completed the subsurface sediment core sampling event from November 7 to 9, 2023. Sample locations are shown on Figures 2 and 3, and daily field reports are included as Attachment A. A summary of sediment coring is presented in Table 1. Sample collection was conducted as described in Geosyntec's October 27, 2023, Work Plan, which was approved by USACE on October 30, 2023, with the following exceptions.

- Three sampling attempts were made at location OITB-2023-05 to collect a sediment core per the requirements in the Work Plan. However, each attempt encountered refusal before reaching the target depth and sediment recoveries were poor. Sediment from this location was archived, but not analyzed. USACE approved attempting one alternate location where better recovery was possible. The new location was named OITB-2023-05A.

- Target depth of -35 feet Mean Lower-Low Water (MLLW) was not obtained at three locations (OITB-2023-05A, OITB-2023-07, OITB-2023-08) due to refusal. As a result, sample composite for sediment lying below -35 feet MLLW did not include sediment from these locations. The sediment compositing scheme per location is presented as Table 2.

*Sediment Geology*

In general, the sediment lithology encountered was gray to dark gray clay with occasional organics (e.g., wood fragments, mussels or clam shells) and ranged from sandy clay to clay. A hard, yellowish-brown, silty fine sand was encountered at several locations, either in the core sample (OITB-2023-05 and OITB-2023-06) or as a thin layer plug in the core sampling shoe when refusal was met (OITB-2023-05A, OITB-2023-07, and OITB-2023-08). Geosyntec assumes that the sand is the Merritt Sand. Boring logs are included as Attachment B. Photographs of sediment cores are included as Attachment C.

*Analytical Data*

In accordance with the Work Plan, composite sediment samples were submitted to SGS North America, Inc. of Orlando, Florida. Laboratory reports are included as Attachment D. Available electronic data deliverables (EDDs) will be sent via email.

**Prepared and reviewed by:**

Erin Dunbar
Senior Geologist

Keith Kroeger
Senior Project Scientist

**Attachments:**
Figure 1 – Site Location Map
Figure 2 – Sample Locations
Figure 3 – Locations with Bathymetric Data

Table 1 – Sediment Core Collection Data
Table 2 – Sediment Sample Collection Data

Attachment A – Daily Field Reports
Attachment B – Boring Logs
Attachment C – Core Photographs
Attachment D – Laboratory Reports

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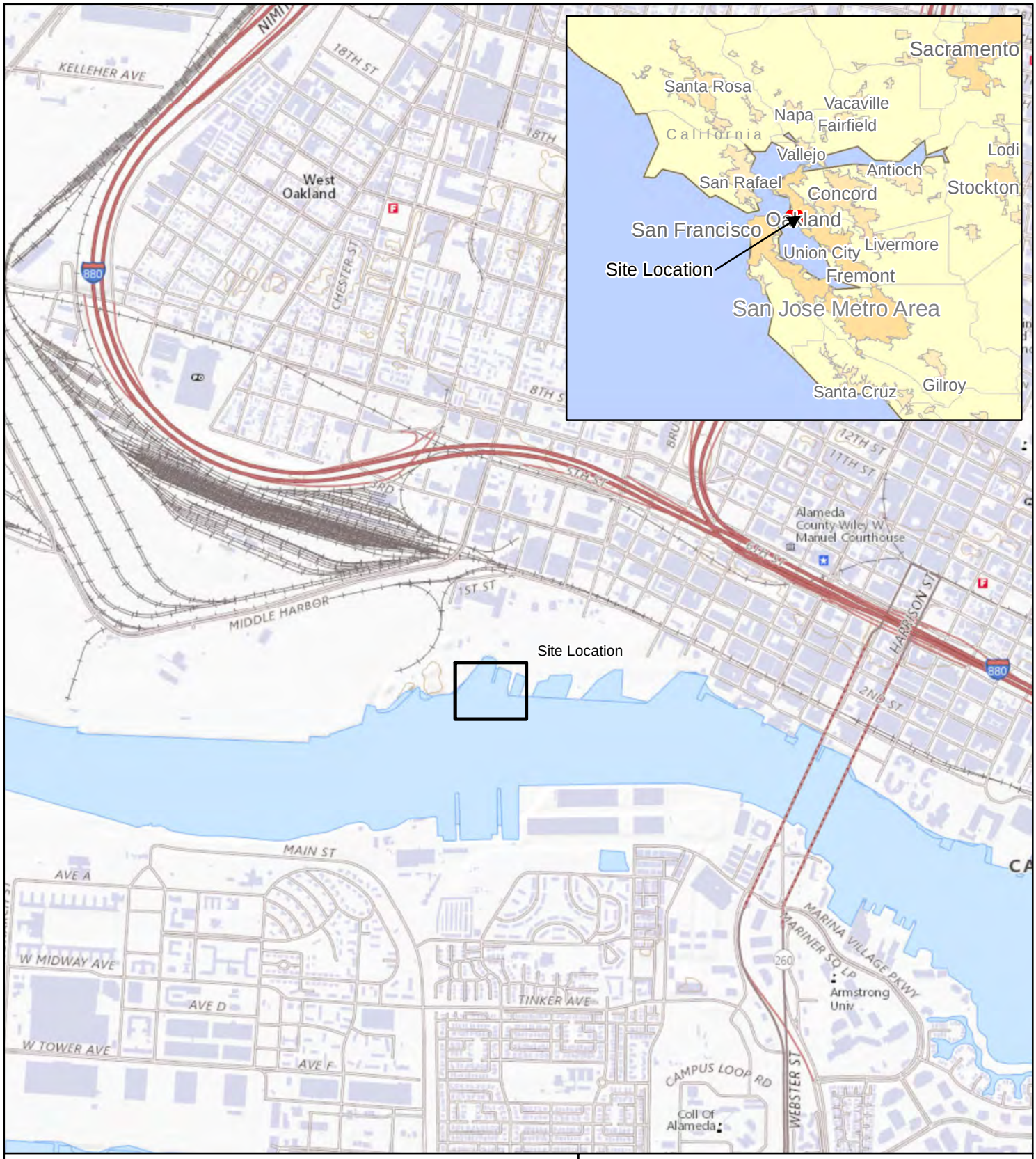
# FIGURES




**Legend**

Site Location

N

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

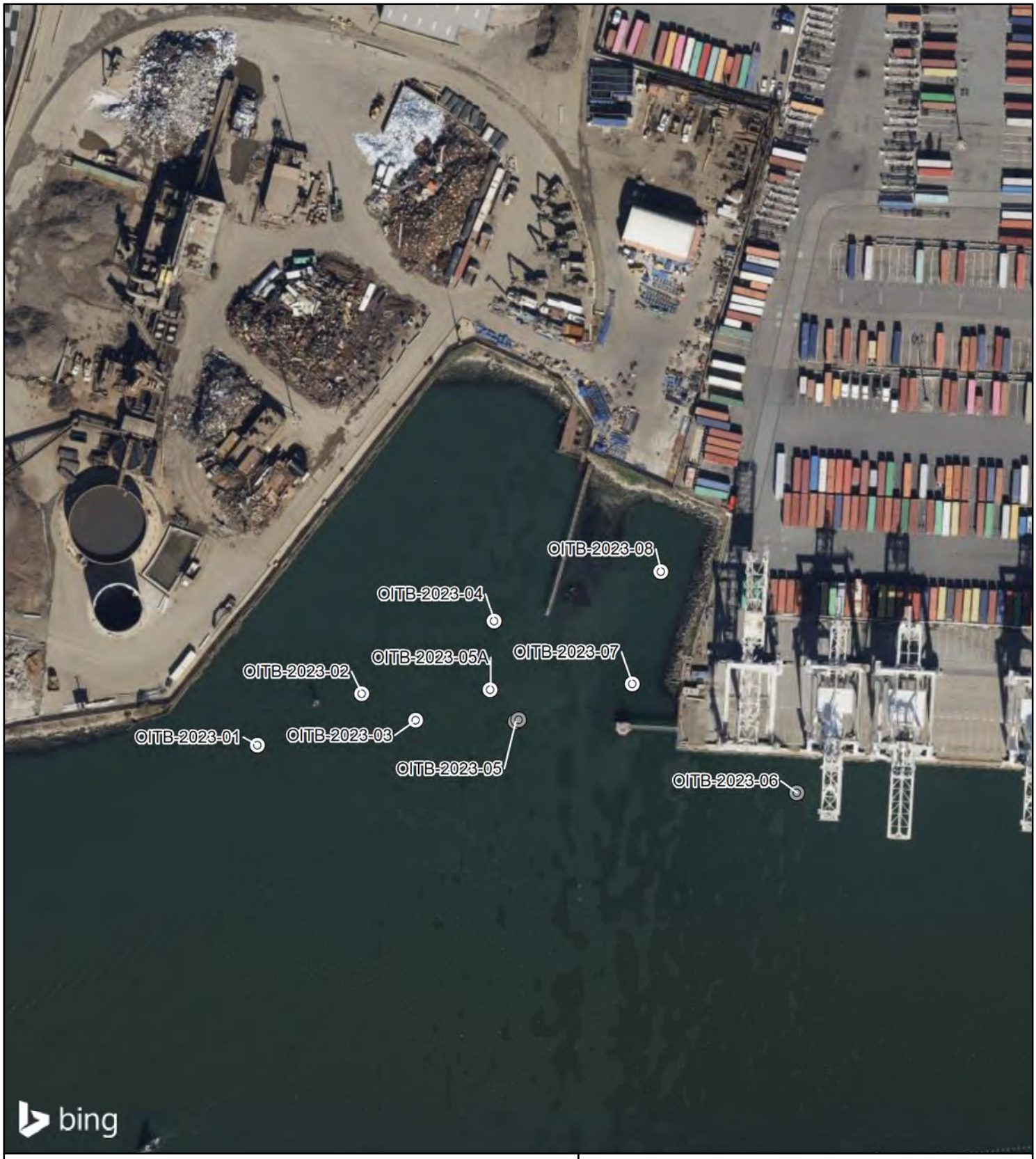
**Site Location Map**

Oakland Inner Harbor; Oakland Turning Basin Widening Study; Oakland, California

Geosyntec consultants

| PNG1060 | February 2024 | **Figure 1** |
|---|---|---|

P:\CAD_GIS\Projects\PNG1060_Oakland\MXDs\Figure 1 Site Location Map.mxd 9/25/2023 9:06:32 AM




**Legend**

◎ Accepted Sample Location

◉ Not Accepted Sample Location

N

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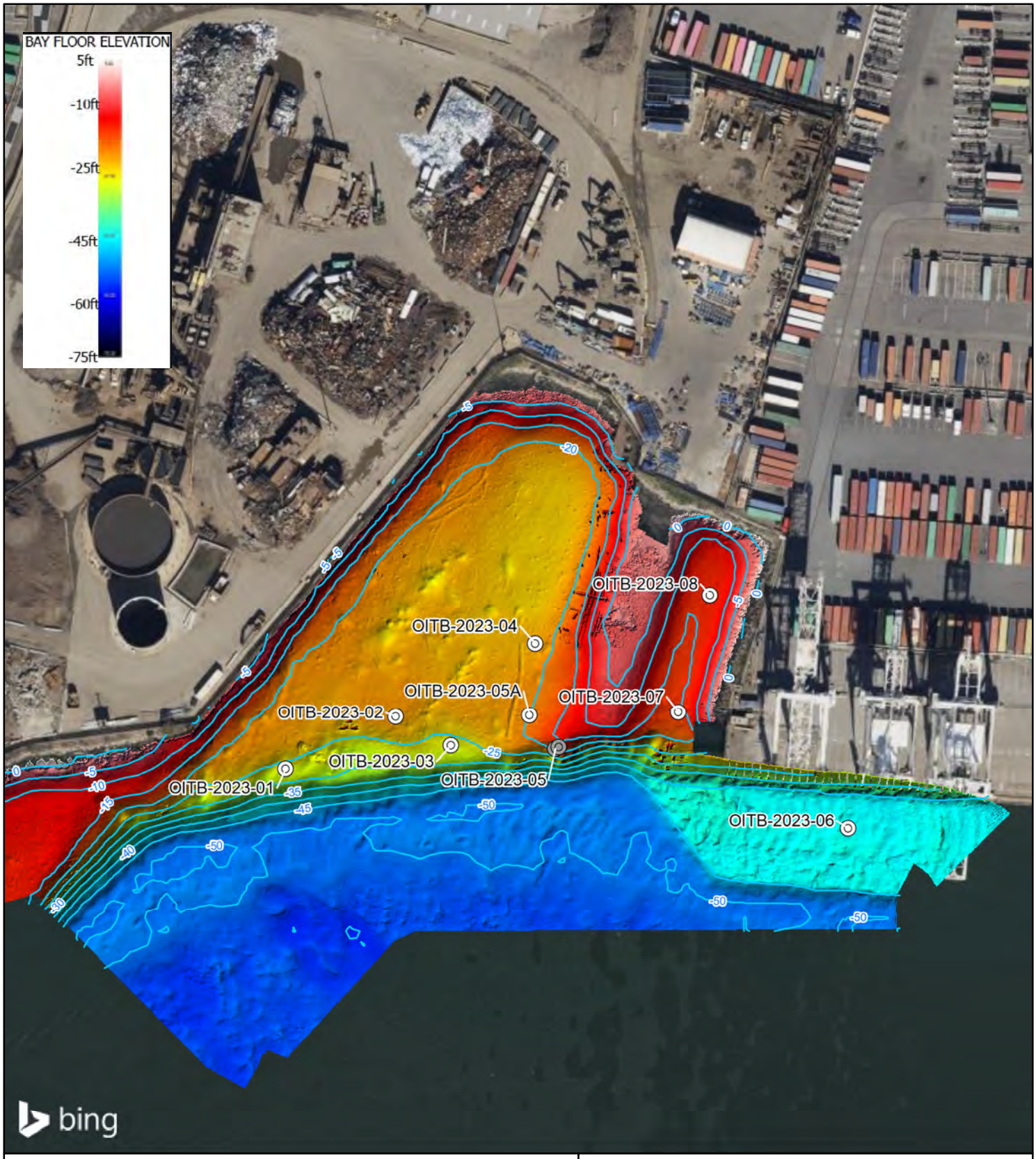
**Sample Locations**

Oakland Inner Harbor; Oakland Turning Basin Widening Study; Oakland, California

Geosyntec consultants

| PNG1060 | February 2024 | Figure 2 |
|---|---|---|

P:\CAD_GIS\Projects\PNG1060_Oakland\MXDs\Figure 2 Actual Sample Locations.mxd 1/18/2024 11:13:08 AM




**Legend**

- Accepted Sample Location
- Not Accepted Sample
- Contour (5 ft MLLW)

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N

**Locations with Bathymetry Data**

Oakland Inner Harbor; Oakland Turning Basin Widening Study; Oakland, California

Geosyntec consultants

| PNG1060 | February 2024 | Figure 3 |
|---|---|---|

P:\CAD_GIS\Projects\PNG1060_Oakland\MXDs\Figure 3 Actual Sample Location Elevation.mxd 2/1/2024 5:40:10 AM

# TABLES

**Table 1**
**Sediment Core Collection Data**

| OITB-2023-01 | | Date Collected: | 11/07/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.794966 | -122.289669 | 37.794980 | -122.289667 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -30.4 | -26.1 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 10 feet | 1 | 10 feet | 8.1 feet (81%) |

| OITB-2023-02 | | Date Collected: | 11/07/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795147 | -122.289213 | 37.795148 | -122.289238 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -24.7 | -21.1 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 16 feet | 3 | 16 feet | 11.5 feet (72%) |

| OITB-2023-03 | | Date Collected: | 11/07/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795042 | -122.289020 | 37.795062 | -122.289018 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -27.5 | -26.5 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 10 feet | 1 | 10 feet | 7.5 feet (75%) |

| OITB-2023-04 | | Date Collected: | 11/08/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795363 | -122.288721 | 37.795383 | -122.288695 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -26.7 | -21.9 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 15 feet | 3 | 15 feet | 9.6 feet (64%) |

**Notes:**

Horizontal Datum: WGS84

Vertical Datum: MLLW

MLLW: Mean Lower Low Water

**Table 1**
**Sediment Core Collection Data**

| OITB-2023-05 | | Date Collected: | 11/08/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795085 | -122.288482 | 37.795057 | -122.288608 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -20.3 | -18.2 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 20 feet | 3 | 3 feet | 1 feet (33%) |

| OITB-2023-05A | | Date Collected: | 11/09/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| n/a | n/a | 37.795162 | -122.288712 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -22.4 | -19.9 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 20 feet | 3 | 11 feet | 7.9 feet (72%) |

| OITB-2023-06 | | Date Collected: | 11/09/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.794855 | -122.287447 | 37.794827 | -122.287452 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -43.5 | -42.3 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 5 feet | 3 | 3.5 feet | 2.5 feet (71%) |

| OITB-2023-07 | | Date Collected: | 11/08/2023 |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795121 | -122.288067 | 37.795180 | -122.288128 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -17.5 | -16.0 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 20 feet | 3 | 9 feet | 6.5 feet (72%) |

**Notes:**

Horizontal Datum: WGS84

Vertical Datum: MLLW

MLLW: Mean Lower Low Water

**Table 1**
**Sediment Core Collection Data**

| **OITB-2023-08** | | Date Collected: 11/09/2023 | |
|---|---|---|---|
| **Proposed Coordinates** | | **Actual Coordinates** | |
| **Latitude** | **Longitude** | **Latitude** | **Longitude** |
| 37.795542 | -122.288023 | 37.795547 | -122.288012 |
| **Water Depth (feet)** | **Sediment Surface Elevation (per bathymetry)** | | |
| -19.7 | -14.6 ft MLLW | | |
| **Target Drive Depth** | **Number of attempts** | **Final Drive Depth** | **Recovery** |
| 22 feet | 3 | 10 feet | 7.8 feet (78%) |

**Notes:**

Horizontal Datum: WGS84

Vertical Datum: MLLW

MLLW: Mean Lower Low Water

**Table 2**
**Sediment Sample Collection Data**

| | **Sample Type** | Composite Sediment Above -35 feet MLLW | Composite Sediment Below -35 feet MLLW | Composite Full Interval of Recovered Core | Archive |
|---|---|---|---|---|---|
| | **Composite Sample ID** | **OITB-Surface to -35 MLLW** | **OITB-Below -35 MLLW** | **OITB-Terminal** | Not Applicable |
| **Location Name** | OITB-2023-01 | X | X | | X |
| | OITB-2023-02 | X | X | | X |
| | OITB-2023-03 | X | X | | X |
| | OITB-2023-04 | X | X | | X |
| | OITB-2023-05 | | | | X |
| | OITB-2023-05A | X | * | | X |
| | OITB-2023-06 | | | X | X |
| | OITB-2023-07 | X | * | | X |
| | OITB-2023-08 | X | * | | X |

**Notes:**

*refusal before reaching -35 ft MMLW, not included in composite sample

MLLW: Mean Lower Low Water

X: Subsample Collected

Station OITB-2023-05 did not meet recovery targets and was replaced with OITB-2023-05A.

# ATTACHMENT A

# DAILY FIELD REPORTS

Geosyntec consultants

# Daily Field Log

1111 Broadway., Floor 6
Oakland, California 94607
PH 510.285.2700
FAX 510.836.3036

**Project Name:** Oakland Turning Basin [redacted] **Project Number:** PNG1060 [redacted] **Page** 1 **of** 1

**Date:** 11/7/23 **Location:** [redacted], CA **Logged By:** MO

**Weather Conditions:** 57-66°F sunny + windy

**Tailgate Safety Meeting Time:** 0756 **Contractor:** TEG Oceanographic Services

| Personnel: Name | Company | Time In | Time Out |
|---|---|---|---|
| Megan Ogburn (MO) | Geosyntec | 0730 | 1600 |
| Erin Dunbar (ED) | Geosyntec | 0720 | 1600 |
| Sean Rotbal (SR) | TEG O.S. | 0630 | 1600 |
| Erick Johnson (EJ) | TEG O.S. | 0630 | 1600 |
| Mark Menez (MM) | TEG O.S. | 0630 | 1600 |

| Time | Activities |
|---|---|
| 0720 | ED onsite with SR/EJ/MM already at dock |
| 0730 | MO onsite |
| 0756 | Tailgate H&S |
| 0810 | NOAA stations appear to be offline |
| 0852 | Boat at Turning Basin site |
| 0858 | On station at OTB-2023-01 |
| 0905 | Anchors set |
| 0942 | Begin coring |
| 1050 | Collecting subsamples 01 > 35 and 01 < 35 |
| 1115 | Boat at OTB-2023-02 |
| 1115 | Anchors set |
| 1134 | Begin coring |
| 1402 | Collecting subsamples 02 > 35 and 02 < 35 |
| MM | from push #2 |
| 1410 | Boat at OTB-2023-03 |
| 1418 | Begin coring |
| 1456 | Collecting subsamples 03 > MM ~~0~~35 and 03 < 35 |
| 1541 | Back to dock |
| 1600 | All offsite |

MO 11/7/23

Copy to: Erin Dunbar Total Hrs.: MM ~~10~~ 8.5 Signature: [signature]

Geosyntec consultants

# Daily Field Log

1111 Broadway., Floor 6
Oakland, California 94607
PH 510.285.2700
FAX 510.836.3036

**Project Name:** [redacted] Oakland Turning Basin **Project Number:** [redacted] PNG1060 **Page** 1 **of** 1

**Date:** 11/8/23 **Location:** [redacted] Alameda, CA **Logged By:** MO

**Weather Conditions:** 54-72° sunny

**Tailgate Safety Meeting Time:** 0742 **Contractor:** TEG Oceanographic Services

| Personnel: Name | Company | Time In | Time Out |
|---|---|---|---|
| Megan Ogburn (MO) | Geosyntec | 0730 | 1645 |
| Erin Dunbar (ED) | Geosyntec | 0730 | ↑ |
| Sean Rotbal (SR) | TEG O.S. | 0700 | ↕ |
| Erick Johnson (EJ) | ↓ | 0700 | ↓ |
| Mark Menez (MM) | | 0700 | 1645 |

| Time | Activities |
|---|---|
| 0700 | TEG O.S. onsite |
| 0730 | MO/ED onsite |
| 0742 | Tailgate |
| 0755 | Mob from dock |
| 0825 | On OITB-2023-04 |
| 0832 | Anchored in |
| 0910 | Pause to fix generator |
| 0850 | First core at 04 |
| 1105 | Sampling at 04 |
| 1130 | Mob back to dock |
| 1203 | Mob from dock to site |
| 1244 | On OITB-2023-05 |
| 1251 | Anchored in |
| 1330 | Coring at 05 |
| 1445 | Collected composited samples of #2 and #3 → called it 05 |
| 1455 | On OITB-2023-07 |
| 1500 | Anchored in |
| 1505 | Coring at 07 |
| 1540 | After push #1 we moved away by about 10 ft NW; then again after #2 |
| 1602 | Sampled from OITB-2023-07 → only the shallower than 35 ft sample |
| 1640 | Back at the dock |
| 1645 | All offsite |

Copy to: Erin Dunbar **Total Hrs.:** 9.25 **Signature:**

Geosyntec consultants

# Daily Field Log

1111 Broadway., Floor 6
Oakland, California 94607
PH 510.285.2700
FAX 510.836.3036

**Project Name:** ~~United Heckathorn~~ Oakland Turning Basin **Project Number:** ~~[illegible]~~ PNG1860 **Page** 1 **of** 2

**Date:** 11/9/23 **Location:** ~~Richmond~~ Alameda, CA **Logged By:** MO

**Weather Conditions:** 52-64°F sunny

**Tailgate Safety Meeting Time:** 0757 **Contractor:** TEG O.S.

| Personnel: Name | Company | Time In | Time Out |
|---|---|---|---|
| Megan Ogburn (MO) | Geosyntec | 0730 | 1652 |
| Erin Dunbar (ED) | Geosyntec | 0730 | ↑ |
| Sean Roybal (SR) | TEG O.S. | 0700 | |
| Erick Johnson (EJ) | ↓ | 0700 | ↓ |
| Mark Menez (MM) | | 0700 | 1652 |

| Time | Activities |
|---|---|
| 0730 | All on-site. TEG O.S. crew already here. |
| 0757 | Health & Safety |
| 0759 | Mob from dock |
| 0832 | At OITB-2023-08 |
| 0847 | Anchored in |
| 0900 | coring at 08 |
| 1014 | Mob to dock |
| 1021 | collecting 08 sample - shallow only |
| 1116 | Mob back to site |
| 1144 | At a new OITB-2023-05A location approximately 75 ft NW of OITB-2023-05 (actual = 20 meters) |
| 1148 | Anchored in |
| 1155 | coring at 05A |
| 1322 | Sampled 05A shallow only |
| 1340 | pulled anchors at 05A |
| 1401 | Anchored at OITB-2023-06 |
| 1408 | Coring at OITB-2023-06 |
| 1513 | Sampling at 06 aka "OITB-Terminal" |
| (MM) ~~1530~~ | |
| 1520 | Back at dock |
| 1530 | Composited, homogenized, jarred "OITB-Below-35 MLLW" We only had enough to composite, but not archive each below 35 sample. |

**Copy to:** Erin Dunbar **Total Hrs.:** ~10 **Signature:** [signature]

Geosyntec consultants

# Daily Field Report

1111 Broadway, 6Th Floor
Oakland, California 94607
PH 510.836.3034
FAX 510.836.3036

**Project Name:** [redacted] Oakland Turning Basin **Project Number:** [redacted] PNG1060 **Page** 2 **of** 2

**Date:** 11/9/23 **Location:** [redacted], Alameda, CA **Logged By:** MO

| Time | Activities |
|---|---|
| 1552 | Jarred Archive-02 |
| 1556 | Jarred archive-03 |
| 1559 | Jarred archive-04 |
| 1606 | Jarred archive-01 |
| 1609 | Jarred archive-08 |
| 1611 | Jarred archive-05A |
| 1618 | Jarred archive-07 |
| 1622 | Jarred archive-05 |
| 1625 | Jarred after compositing and homogenizing sample "OITB - Surface to -35 MLLW" |
| 1652 | All offsite |

11/9/23

MO

# ATTACHMENT B

# BORING LOGS

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-01 **SHEET** 1 OF 1
**START DATE** 11/7/2023 **ELEVATION** -26.1
**FINISH DATE** 11/7/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | **Sandy CLAY (CL):** Dark gray, very soft at surface to soft, wet, with 20% sand (decreasing with depth) and trace organics. No sheen or odor. | | 0 | | 81% 8.1/10 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 0.5 | | | | | | | | |
| 1.0 | -27 | | | 1 | | | | |
| 1.5 | | | | | | | | |
| 2.0 | -28 | | | | | | | |
| 2.5 | | | | 2 | | | | |
| 3.0 | -29 | - 5% sand | | | | | | |
| 3.5 | | **CLAY (CL):** Dark gray with black nodules that streak on sediment, soft, wet, with trace sand. No sheen or odor. | | 2.8 3 | | | | |
| 4.0 | -30 | | | | | | | |
| 4.5 | | | | | | | | |
| 5.0 | -31 | | | 4 | | | | |
| 5.5 | | | | | | | | |
| 6.0 | -32 | | | 5 | | | | |
| 6.5 | | | | | | | | |
| 7.0 | -33 | | | | | | | |
| 7.5 | | | | 6 | | | | |
| 8.0 | -34 | - becomes very dark gray to black | | | | | | |
| 8.5 | | | | 7 | | | | |
| 9.0 | -35 | | | 7.2 | | | OITB- below -35 MLLW | Added to sample composite |
| 9.5 | | | | | | | | |
| 10.0 | -36 | | | 8 8.1 | | | | |
| | | End of core; reached target depth of 10 feet | | | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.290
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 10 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-02 **SHEET** 1 OF 1
**START DATE** 11/7/2023 **ELEVATION** -21.1
**FINISH DATE** 11/7/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 0.5 | | **Sandy CLAY (CL):** Dark gray, soft, wet, with 20% sand. No sheen or odor. | | | | 72% 11.5/16 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 1.0 | -22 | | | | | | | |
| 1.5 | | | | 1 | | | | |
| 2.0 | -23 | | | | | | | |
| 2.5 | | - 0.5-in clam shell | | | | | | |
| 3.0 | -24 | | | 2 | | | | |
| 3.5 | | | | 2.6 | | | | |
| 4.0 | -25 | **CLAY (CL):** Dark gray with black nodules that streak on sediment, soft, wet, with trace sand. No sheen or odor. | | 3 | | | | |
| 4.5 | | | | | | | | |
| 5.0 | -26 | | | | | | | |
| 5.5 | | | | 4 | | | | |
| 6.0 | -27 | | | | | | | |
| 6.5 | | | | | | | | |
| 7.0 | -28 | | | 5 | | | | |
| 7.5 | | | | | | | | |
| 8.0 | -29 | - becomes very dark gray to black | | | | | | |
| 8.5 | | | | 6 | | | | |
| 9.0 | -30 | - 0.4-ft sand lens with mussel shells | | | | | | |
| 9.5 | | | | | | | | |
| 10.0 | -31 | | | 7 | | | | |
| 10.5 | | | | | | | | |
| 11.0 | -32 | | | 8 | | | | |
| 11.5 | | | | | | | | |
| 12.0 | -33 | | | | | | | |
| 12.5 | | | | 9 | | | | |
| 13.0 | -34 | | | | | | | |
| 13.5 | | | | | | | | |
| 14.0 | -35 | | | 10 | | | OITB- below -35 MLLW | Added to sample composite |
| 14.5 | | | | | | | | |
| 15.0 | -36 | | | | | | | |
| 15.5 | | | | 11 | | | | |
| 16.0 | -37 | | | 11.5 | | | | |
| | | End of core; reached target depth of 16 feet | | | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.289
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 16 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

PORTLAND - SEDIMENT LOG (OAKLAND HARBOR) PNG1060 OAKLAND HARBOR.GPJ PNW DEFAULT GINT LIBRARY.GLB 1/30/24

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-03 **SHEET** 1 **OF** 1
**START DATE** 11/7/2023 **ELEVATION** -26.5
**FINISH DATE** 11/7/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | **CLAY (CL):** Dark gray, soft, wet, with 5% sand. No sheen or odor. | | | | 75% 7.5/10 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 0.5 | -27 | | | | | | | |
| 1.0 | | | | | | | | |
| 1.5 | -28 | | | 1 | | | | |
| 2.0 | | | | | | | | |
| 2.5 | -29 | | | 2 | | | | |
| 3.0 | | | | | | | | |
| 3.5 | -30 | - becomes sandy clay; increased sand to 30% | | | | | | |
| 4.0 | | | | 3 | | | | |
| 4.5 | -31 | - 1/4-in lenses of sand and silt; interbedded | | | | | | |
| 5.0 | | | | | | | | |
| 5.5 | -32 | | | 4 | | | | |
| 6.0 | | | | | | | | |
| 6.5 | -33 | | | 5 | | | | |
| 7.0 | | - becomes very dark gray, decreased sand to 15% | | | | | | |
| 7.5 | -34 | | | | | | | |
| 8.0 | | | | 6 | | | | |
| 8.5 | -35 | | | 6.4 | | | OITB- below -35 MLLW | Added to sample composite |
| 9.0 | | | | | | | | |
| 9.5 | -36 | | | 7 | | | | |
| 10.0 | | End of core; reached target depth of 10 feet | | 7.5 | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.289
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 10 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-04 **SHEET** 1 OF 1
**START DATE** 11/8/2023 **ELEVATION** -21.9
**FINISH DATE** 11/8/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|
| 0.5 | -22 | **CLAY (CL):** Dark gray, soft, wet, with trace fine sand. No sheen or odor. | | | 64% 9.6/15 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 1.0 | -23 | | | | | | |
| 1.5 | | | 1 | | | | |
| 2.0 | -24 | | | | | | |
| 2.5 | | | | | | | |
| 3.0 | -25 | | 2 | | | | |
| 3.5 | | | | | | | |
| 4.0 | -26 | | | | | | |
| 4.5 | | | 3 | | | | |
| 5.0 | -27 | - becomes very dark gray with black nodules and streaks | 3.3 | | | | |
| 5.5 | | | | | | | |
| 6.0 | -28 | | | | | | |
| 6.5 | | - sharp angular shell fragments | 4 | | | | |
| 7.0 | -29 | | | | | | |
| 7.5 | | | | | | | |
| 8.0 | -30 | | 5 | | | | |
| 8.5 | | | | | | | |
| 9.0 | -31 | | | | | | |
| 9.5 | | | 6 | | | | |
| 10.0 | -32 | | | | | | |
| 10.5 | | | | | | | |
| 11.0 | -33 | - mussel shells | 7 | | | | |
| 11.5 | | | | | | | |
| 12.0 | -34 | - becomes black | 7.7 | | | | |
| 12.5 | | | 8 | | | | |
| 13.0 | -35 | | 8.4 | | | OITB- below -35 MLLW | Added to sample composite |
| 13.5 | | | | | | | |
| 14.0 | -36 | | 9 | | | | |
| 14.5 | | | | | | | |
| 15.0 | | End of boring; reached target depth of 15 feet | 9.6 | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.289
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 15 feet
Target recovery of 75% not met for all three attempts. The best recovery of 64% was logged and sampled.

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-05 **SHEET** 1 OF 1
**START DATE** 11/8/2023 **ELEVATION** -18.2
**FINISH DATE** 11/8/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 0.5 | | **Silty SAND (SM):** Yellowish-brown, hard, wet, Merritt Sand | | | | 33% 1/3 ft | | no subsample collected for composite; relocated to OITB-2023-05A |
| 1.0 | -19 | | | | | | | |
| 1.5 | | | | | | | | |
| 2.0 | -20 | | | | | | | |
| 2.5 | | | | | | | | |
| 3.0 | -21 | End of boring; refusal at 3 feet | | | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.289
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 20 feet
Target recovery of 75% not met for all three attempts. The best recovery was logged.

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-05A **SHEET** 1 OF 1
**START DATE** 11/9/2023 **ELEVATION** -19.9
**FINISH DATE** 11/9/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | -20 | **CLAY (CL):** Very dark gray with black nodules and streaks, soft, wet, with trace organics. No sheen or odor. | | | | 72% 7.9/11 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 0.5 | | | | | | | | |
| 1.0 | -21 | | | | | | | |
| 1.5 | | | | 1 | | | | |
| 2.0 | -22 | | | | | | | |
| 2.5 | | | | | | | | |
| 3.0 | -23 | | | 2 | | | | |
| 3.5 | | | | | | | | |
| 4.0 | -24 | | | | | | | |
| 4.5 | | - mussel shell | | 3 | | | | |
| 5.0 | -25 | - 1/4-in sand lens | | | | | | |
| 5.5 | | -4-in black, wood fragment | | 4 | | | | |
| 6.0 | -26 | | | | | | | |
| 6.5 | | | | | | | | |
| 7.0 | -27 | | | 5 | | | | |
| 7.5 | | - increase in black nodules and streaks | | | | | | |
| 8.0 | -28 | | | | | | | |
| 8.5 | | | | 6 | | | | |
| 9.0 | -29 | | | | | | | |
| 9.5 | | - mussel shell | | | | | | |
| 10.0 | -30 | | | 7 | | | | |
| 10.5 | | - 3-in black, wood fragment | | | | | | |
| 11.0 | | End of boring; refusal at 11 feet | | 7.9 | | | | -35 feet MLLW not reached; no subsample for this depth interval |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.289
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 20 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-06 **SHEET** 1 OF 1
**START DATE** 11/9/2023 **ELEVATION** -42.3
**FINISH DATE** 11/9/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 0.5 | -43 | **CLAY (CL):** Very dark gray with black nodules and streaks, wet, soft. No sheen or odor. | | 1 | | 71% 2.5/3.5 ft | OITB-Terminal | |
| 1.5 | -44 | | | | | | | |
| 2.5 | -45 | | | 2 | | | | |
| 3.0 | | **Silty SAND (SM):** Yellowish-brown, hard, wet, fine sand. Merritt Sand | | 3 | | | | |
| 3.5 | | End of boring; refusal at 3.5 feet | | 2.5 | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.287
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 5 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

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Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-07 **SHEET** 1 **OF** 1
**START DATE** 11/8/2023 **ELEVATION** -16.0
**FINISH DATE** 11/8/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | **CLAY (CL):** Dark gray, soft, wet, with trace fine sand. No sheen or odor. | | | | 72% 6.5/9.0 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 0.5 | | | | | | | | |
| 1.0 | -17 | | | | | | | |
| 1.5 | | | | 1 | | | | |
| 2.0 | -18 | | | | | | | |
| 2.5 | | | | | | | | |
| 3.0 | -19 | - becomes soft | | 2 | | | | |
| 3.5 | | | | | | | | |
| 4.0 | -20 | | | 3 | | | | |
| 4.5 | | | | | | | | |
| 5.0 | -21 | | | | | | | |
| 5.5 | | - trace clam shells | | 4 | | | | |
| 6.0 | -22 | | | | | | | |
| 6.5 | | | | | | | | |
| 7.0 | -23 | | | 5 | | | | |
| 7.5 | | | | | | | | |
| 8.0 | -24 | | | | | | | -35 feet MLLW not reached; no subsample for this depth interval |
| 8.5 | | | | 6 | | | | |
| 9.0 | -25 | End of core; refusal at 9 feet | | 6.5 | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.288
**EASTING** 37.795
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 20 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Geosyntec consultants
920 SW Sixth Avenue, Suite 600
Portland, Oregon 97204
Phone: 503.222.9518

GS FORM: BORE 1/99

# SEDIMENT CORE

**BORING** OITB-2023-08 **SHEET** 1 OF 1
**START DATE** 11/9/2023 **ELEVATION** -14.6
**FINISH DATE** 11/9/2023
**PROJECT** Oakland Harbor Inner Turning Basin
**LOCATION** Oakland, California
**PROJECT NUMBER** PNG1060

| IN-SITU DEPTH (ft) | IN-SITU ELEVATION (ft) | MATERIAL DESCRIPTION | SYMBOLIC LOG | CORE LENGTH (FT) | SAMPLES TYPE | SAMPLES RECOVERY | SAMPLES SAMPLE NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 0.5 | -15 | **CLAY (CL):** Very dark gray with black nodules and streaks, soft, wet, with trace organics. No sheen or odor. | | | | 78% 7.8/10 ft | OITB-Surface to -35 MLLW | Added to sample composite |
| 1.0 | | | | | | | | |
| 1.5 | -16 | | | 1 | | | | |
| 2.0 | | | | | | | | |
| 2.5 | -17 | | | 2 | | | | |
| 3.0 | | | | | | | | |
| 3.5 | -18 | | | | | | | |
| 4.0 | | | | 3 | | | | |
| 4.5 | -19 | | | | | | | |
| 5.0 | | | | 4 | | | | |
| 5.5 | -20 | | | | | | | |
| 6.0 | | | | | | | | |
| 6.5 | -21 | | | 5 | | | | |
| 7.0 | | | | | | | | |
| 7.5 | -22 | | | 6 | | | | |
| 8.0 | | | | | | | | |
| 8.5 | -23 | - 3-in wood fragment | | | | | | |
| 9.0 | | | | 7 | | | | |
| 9.5 | -24 | | | | | | | |
| 10.0 | | | | 7.8 | | | | -35 feet MLLW not reached; no subsample for this depth interval |
| | | End of boring; refusal at 10 feet | | | | | | |

**CONTRACTOR** TEG Oceanographic
**EQUIPMENT**
**DRILL MTHD** Vibracore
**DIAMETER** 4-inch
**LOGGER** M. Ogburn **REVIEWER** E. Dunbar

**NORTHING** -122.288
**EASTING** 37.796
**ANGLE** Vertical
**BEARING** ------

**REMARKS:** Elevations presented as feet mean lower low water (MLLW)
Target depth: 22 feet

**COORDINATE SYSTEM:**
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

# ATTACHMENT C

# CORE PHOTOGRAPHS

## ATTACHMENT C: GEOSYNTEC CONSULTANTS
## SEDIMENT CORE PHOTO LOG

**Client:** U.S. Army Corps of Engineers
**Site Name:** Oakland Turning Basin Widening Study

**Project Number:** PNG1060
**Site Location:** Oakland, California

OITB-2023-01 (0 TO 2.5 FEET)

Top of core to approximately 2.5 feet below mudline. Collected via vibracore.

OITB-2023-01 (0.5 TO 3.8 FEET)

Photo depth to approximately 3.8 feet below mudline. Collected via vibracore.

OITB-2023-01 (3.5 TO 6.4 FEET)

Photo depth to approximately 6.4 feet below mudline. Collected via vibracore.

OITB-2023-01 (6 TO 8 FEET)

Photo depth to approximately 8 feet below mudline. Collected via vibracore.

OITB-2023-02 (0 TO 1.8 FEET)

Top of core to approximately 1.8 feet below mudline (approximate bottom of core). Collected via vibracore.

OITB-2023-02 (1 TO 2.9 FEET)

Photo depth to approximately 2.9 feet below mudline. Collected via vibracore.

OITB-2023-02 (2 TO 4 FEET)

Photo depth to approximately 2.9 feet below mudline. Collected via vibracore.

OITB-2023-02 (3.2 TO 5.4 FEET)

Photo depth to approximately 5.4 feet below mudline. Collected via vibracore.

OITB-2023-02 (4.6 TO 7 FEET)

Photo depth to approximately 7 feet below mudline. Collected via vibracore.

## ATTACHMENT C: GEOSYNTEC CONSULTANTS
## SEDIMENT CORE PHOTO LOG

**Client:** U.S. Army Corps of Engineers
**Site Name:** Oakland Turning Basin Widening Study

**Project Number:** PNG1060
**Site Location:** Oakland, California

OITB-2023-02 (7 TO 9.9 FEET)

Photo depth to approximately 9.9 feet below mudline. Collected via vibracore.

OITB-2023-02 (8.5 TO 11.1 FEET)

Photo depth to approximately 11.1 feet below mudline (approximate bottom of core). Collected via vibracore.

OITB-2023-03 (0 TO 2.2 FEET)

Top of core to approximately 2.2 feet below mudline. Collected via vibracore.

OITB-2023-03 (1.5 TO 3.9 FEET)

Photo depth to approximately 3.9 feet below mudline. Collected via vibracore.

OITB-2023-03 (3 TO 5.3 FEET)

Top of core to approximately 5.3 feet below mudline. Collected via vibracore.

OITB-2023-03 (4.3 TO 6.8 FEET)

Photo depth to approximately 6.8 feet below mudline. Collected via vibracore.

OITB-2023-03 (5.5 TO 7.3 FEET)

Photo depth to approximately 7.3 feet below mudline. Collected via vibracore.

OITB-2023-04 (0 TO 2.2 FEET)

Top of core to approximately 2.2 feet below mudline. Collected via vibracore.

OITB-2023-04 (1.3 TO 3.5 FEET)

Photo depth to approximately 3.5 feet below mudline. Collected via vibracore.

## ATTACHMENT C: GEOSYNTEC CONSULTANTS
## SEDIMENT CORE PHOTO LOG

**Client:** U.S. Army Corps of Engineers
**Site Name:** Oakland Turning Basin Widening Study

**Project Number:** PNG1060
**Site Location:** Oakland, California

OITB-2023-04 (2.9 TO 5.1 FEET)

Top of core to approximately 5.1 feet below mudline. Collected via vibracore.

OITB-2023-04 (4.4 TO 6.8 FEET)

Photo depth to approximately 6.7 feet below mudline. Collected via vibracore.

OITB-2023-04 (6.8 TO 9.4 FEET)

Photo depth to approximately 9.4 feet below mudline (approximate bottom of core). Collected via vibracore.

OITB-2023-05 (0 TO 0.5 FEET)

Photo depth to approximately 0.5 feet below mudline for attempt #2 (left) and attempt #3 (right). Collected via vibracore.

OITB-2023-05A (0 TO 2.1 FEET)

Top of core to approximately 2.1 feet below mudline. Collected via vibracore.

OITB-2023-05A (1.2 TO 3.4 FEET)

Photo depth to approximately 3.4 feet below mudline. Collected via vibracore.

OITB-2023-05A (2.5 TO 4.7 FEET)

Photo depth to approximately 4.7 feet below mudline. Collected via vibracore.

OITB-2023-05A (3.8 TO 6.1 FEET)

Photo depth to approximately 6.1 feet below mudline. Collected via vibracore.

OITB-2023-05A (5.8 TO 8 FEET)

Photo depth to approximately 8 feet below mudline (approximate bottom of core). Collected via vibracore .

## ATTACHMENT C: GEOSYNTEC CONSULTANTS
## SEDIMENT CORE PHOTO LOG

**Client:** U.S. Army Corps of Engineers
**Site Name:** Oakland Turning Basin Widening Study

**Project Number:** PNG1060
**Site Location:** Oakland, California

OITB-2023-06 (0 TO 2 FEET)

Top of core to approximately 2.0 feet below mudline (approximate bottom of core). Collected via vibracore.

OITB-2023-07 (0 TO 2.1 FEET)

Top of core to approximately 2.1 feet below mudline. Collected via vibracore.

OITB-2023-07 (1 TO 3.5 FEET)

Photo depth to approximately 3.5 feet below mudline. Collected via vibracore.

OITB-2023-07 (3.1 TO 5.5 FEET)

Photo depth to approximately 5.5 feet below mudline. Collected via vibracore.

OITB-2023-07 (4.4 TO 6.4 FEET)

Photo depth to approximately 6.4 feet below mudline (approximate bottom of core). Collected via vibracore.

OITB-2023-08 (0 TO 2.2 FEET)

Top of core to approximately 2.2 feet below mudline. Collected via vibracore.

OITB-2023-08 (1.1 TO 3.7 FEET)

Photo depth to approximately 3.7 feet below mudline. Collected via vibracore.

OITB-2023-08 (2.5 TO 5.1 FEET)

Photo depth to approximately 5.1 feet below mudline. Collected via vibracore.

OITB-2023-08 (5.1 TO 7.5 FEET)

Photo depth to approximately 7.5 feet below mudline (approximate bottom of core). Collected via vibracore.

# ATTACHMENT D

# ANALYTICAL LABORATORY REPORTS

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*
*Automated Report*

# Technical Report for

## Geosyntec Consultants - Portland, OR

Oakland Harbor

PNG1060

SGS Job Number: FC11168

Sampling Date: 11/09/23

Report to:

Geosyntec Consultants - Portland, OR
920 SW 6th Ave Suite 600
Portland, OR 97204
edunbar@geosyntec.com

ATTN: Erin Dunbar

Total number of pages in report: **78**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.



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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

January 11, 2024

Erin Dunbar
Geosyntec Consultants
920 SW 6th Ave
Suite 600
Portland, OR 97204

RE: SGS North America Inc. - Orlando job FC11168 Reissue

Dear Erin,

The report was revised to include 1,1'-Biphenyl (SW846 8270E).
The changes are incorporated in the revised report for Sample Delivery Group FC11168

SGS North America Inc. - Orlando apologizes for any inconvenience this may have caused.
Please feel free to contact us if we can be of further assistance.

Sincerely,

SGS North America, Inc. - Orlando

Florida ♦ 4405 Vineland Road ♦ Suite C-15 ♦ Orlando, FL 32811 ♦ tel: 407 425-6700 ♦ fax: 407 425-0707

# Table of Contents

-1-

**Section 1: Sample Summary** ..... **4**
**Section 2: Case Narrative/Conformance Summary** ..... **5**
**Section 3: Summary of Hits** ..... **9**
**Section 4: Sample Results** ..... **13**
**4.1:** FC11168-1: 01TB-TERMINAL ..... 14
**4.2:** FC11168-1A: 01TB-TERMINAL ..... 18
**4.3:** FC11168-2: 01TB-BELOW-35 MLLW ..... 19
**4.4:** FC11168-2A: 01TB-BELOW-35 MLLW ..... 23
**4.5:** FC11168-11: 01TB-SURFACE TO-35 MLLW ..... 24
**4.6:** FC11168-11A: 01TB-SURFACE TO-35 MLLW ..... 28
**Section 5: Misc. Forms** ..... **29**
**5.1:** Chain of Custody ..... 30
**5.2:** QC Evaluation: DOD QSM5.x Limits ..... 32
**Section 6: MS Semi-volatiles - QC Data Summaries** ..... **39**
**6.1:** Method Blank Summary ..... 40
**6.2:** Blank Spike Summary ..... 43
**6.3:** Matrix Spike/Matrix Spike Duplicate Summary ..... 46
**Section 7: GC/LC Semi-volatiles - QC Data Summaries** ..... **48**
**7.1:** Method Blank Summary ..... 49
**7.2:** Blank Spike Summary ..... 50
**7.3:** Matrix Spike/Matrix Spike Duplicate Summary ..... 52
**Section 8: Metals Analysis - QC Data Summaries** ..... **53**
**8.1:** Prep QC MP43153: As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn ..... 54
**8.2:** Prep QC MP43202: Hg ..... 60
**8.3:** Prep QC MP43203: Hg ..... 66
**Section 9: Misc. Forms (SGS Dayton, NJ)** ..... **71**
**9.1:** Chain of Custody ..... 72
**Section 10: General Chemistry - QC Data (SGS Dayton, NJ)** ..... **74**
**10.1:** Method Blank and Spike Results Summary ..... 75
**10.2:** Duplicate Results Summary ..... 76
**10.3:** Matrix Spike Results Summary ..... 77
**10.4:** Matrix Spike Duplicate Results Summary ..... 78

SGS North America Inc.

# Sample Summary

Geosyntec Consultants - Portland, OR

**Job No:** FC11168

Oakland Harbor
Project No: PNG1060

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FC11168-1 | 11/09/23 | 15:13 | ED | 11/11/23 | SO | Sediment | 01TB-TERMINAL |
| FC11168-1A | 11/09/23 | 15:13 | ED | 11/11/23 | SO | Sediment | 01TB-TERMINAL |
| FC11168-2 | 11/09/23 | 15:30 | ED | 11/11/23 | SO | Sediment | 01TB-BELOW-35 MLLW |
| FC11168-2A | 11/09/23 | 15:30 | ED | 11/11/23 | SO | Sediment | 01TB-BELOW-35 MLLW |
| FC11168-11 | 11/09/23 | 16:25 | ED | 11/11/23 | SO | Sediment | 01TB-SURFACE TO-35 MLLW |
| FC11168-11A | 11/09/23 | 16:25 | ED | 11/11/23 | SO | Sediment | 01TB-SURFACE TO-35 MLLW |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Geosyntec Consultants - Portland, OR **Job No:** FC11168

**Site:** Oakland Harbor **Report Revised Date:** 01/11/2024 2:49:59 PM

On 11/11/2023, 3 Sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11168 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## MS Semi-volatiles By Method SW846 8270E

**Matrix:** SO **Batch ID:** OP458

Sample(s) FC11659-1MS, FC11659-1MSD were used as the QC samples indicated.

FC11168-1A: Sample extracted beyond hold time.
FC11168-2A: Sample extracted beyond hold time.

FC11168-11A: Sample extracted beyond hold time.

## MS Semi-volatiles By Method SW846 8270E BY SIM

**Matrix:** SO **Batch ID:** OP182

Sample(s) FC11135-10MS, FC11135-10MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Benzo(a)anthracene are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Benzo(a)anthracene are outside control limits. Probable cause is due to matrix interference.

## GC/LC Semi-volatiles By Method SW846 8081B

**Matrix:** SO **Batch ID:** OP185

Sample(s) FC11168-1MS, FC11168-1MSD were used as the QC samples indicated.

Matrix Spike Duplicate Recovery(s) for Endrin are outside control limits. Probable cause is due to matrix interference.

FC11168-1 for 4,4'-DDT: Associated CCV outside of control limits high, sample was ND.

FC11168-1 for Methoxychlor: Associated CCV outside of control limits high, sample was ND.

FC11168-2 for 4,4'-DDT: Associated CCV outside of control limits high, sample was ND.

FC11168-2 for Methoxychlor: Associated CCV outside of control limits high, sample was ND.
FC11168-11 for 4,4'-DDT: Associated CCV outside of control limits high, sample was ND.

FC11168-11 for Methoxychlor: Associated CCV outside of control limits high, sample was ND.

## Metals Analysis By Method SW846 6020B

**Matrix:** SO **Batch ID:** MP43153

Sample(s) FC11232-1DUP, FC11232-1MS, FC11232-1MSD, FC11232-1SDL, FC11232-1PS were used as the QC samples.

Matrix Spike Recovery(s) for Copper, Zinc are outside control limits. Spike amount low relative to the sample amount and/or possible matrix interference. Refer to lab control or spike blank for recovery information.

Matrix Spike Duplicate Recovery(s) for Chromium, Copper, Nickel, Zinc are outside control limits. Spike amount low relative to the sample amount and/or possible matrix interference. Refer to lab control or spike blank for recovery information.

RPD(s) for Duplicate for Copper, Lead, Silver are outside control limits for sample MP43153-D1. High RPD due to possible sample non-homogeneity.

RPD(s) for Serial Dilution for Copper, Nickel are outside control limits for sample MP43153-SD1. Probable cause is due to sample non-homogeneity.

MP43153-SD1 for Nickel: Serial dilution indicates possible matrix interference.
MP43153-SD1 for Copper: Serial dilution indicates possible matrix interference.

## Metals Analysis By Method SW846 6020B

**Matrix:** SO **Batch ID:** MP43153

MP43153-PS1 for Chromium: Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

MP43153-PS1 for Nickel: Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

## Metals Analysis By Method SW846 7471B

**Matrix:** SO **Batch ID:** MP43202

Sample(s) FC11125-1ADUP, FC11125-1AMS, FC11125-1AMSD, FC11125-1ASDL were used as the QC samples for metals.

Matrix Spike Duplicate Recovery(s) for Mercury are outside control limits. Probable cause is due to matrix interference.

RPD(s) for Serial Dilution for Mercury are outside control limits for sample MP43202-SD1. Probable cause is due to sample non-homogeneity.

**Matrix:** SO **Batch ID:** MP43203

Sample(s) FC11168-11DUP, FC11168-11MS, FC11168-11MSD, FC11168-11SDL were used as the QC samples for metals.

RPD(s) for Serial Dilution for Mercury are outside control limits for sampl MP43203-SD1. Probable cause is due to sample non-homogeneity.

## General Chemistry By Method ASTM D422-63

**Matrix:** SO **Batch ID:** N:GP50682

FC11168-1 for % Gravel: Analysis performed at SGS Dayton, NJ.

FC11168-1 for % Sand: Analysis performed at SGS Dayton, NJ.

FC11168-1 for % Silt, Clay, Colloids: Analysis performed at SGS Dayton, NJ.

FC11168-1 for 0.0015 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-1 for 0.005 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-1 for 0.030 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-1 for 0.375 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-1 for 0.75 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-1 for 1.5 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-1 for 3 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.10 Sieve (2.00 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.100 Sieve (0.15 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.16 Sieve (1.18 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.200 Sieve (0.075 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.30 Sieve (0.60 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.4 Sieve (4.75 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.50 Sieve (0.30 mm): Analysis performed at SGS Dayton, NJ.

FC11168-1 for No.8 Sieve (2.36 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for % Gravel: Analysis performed at SGS Dayton, NJ.

FC11168-11 for % Sand: Analysis performed at SGS Dayton, NJ.

FC11168-11 for % Silt, Clay, Colloids: Analysis performed at SGS Dayton, NJ.

FC11168-11 for 0.0015 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-11 for 0.005 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-11 for 0.030 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-11 for 0.375 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-11 for 0.75 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-11 for 1.5 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-11 for 3 Inch Sieve: Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.10 Sieve (2.00 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.100 Sieve (0.15 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.16 Sieve (1.18 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.200 Sieve (0.075 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.30 Sieve (0.60 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.4 Sieve (4.75 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.50 Sieve (0.30 mm): Analysis performed at SGS Dayton, NJ.

FC11168-11 for No.8 Sieve (2.36 mm): Analysis performed at SGS Dayton, NJ.

FC11168-2 for % Gravel: Analysis performed at SGS Dayton, NJ.

FC11168-2 for % Sand: Analysis performed at SGS Dayton, NJ.

FC11168-2 for % Silt, Clay, Colloids: Analysis performed at SGS Dayton, NJ.

FC11168-2 for 0.0015 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-2 for 0.005 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

FC11168-2 for 0.030 mm (Hydrometer): Analysis performed at SGS Dayton, NJ.

## General Chemistry By Method ASTM D422-63

**Matrix:** SO **Batch ID:** N:GP50682

FC11168-2 for 0.375 Inch Sieve: Analysis performed at SGS Dayton, NJ.
FC11168-2 for 0.75 Inch Sieve: Analysis performed at SGS Dayton, NJ.
FC11168-2 for 1.5 Inch Sieve: Analysis performed at SGS Dayton, NJ.
FC11168-2 for 3 Inch Sieve: Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.10 Sieve (2.00 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.100 Sieve (0.15 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.16 Sieve (1.18 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.200 Sieve (0.075 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.30 Sieve (0.60 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.4 Sieve (4.75 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.50 Sieve (0.30 mm): Analysis performed at SGS Dayton, NJ.
FC11168-2 for No.8 Sieve (2.36 mm): Analysis performed at SGS Dayton, NJ.

## General Chemistry By Method SW846 9060A

**Matrix:** SO **Batch ID:** N:GP50606

FC11168-1 for Total Organic Carbon: Analysis performed at SGS Dayton, NJ.
FC11168-2 for Total Organic Carbon: Analysis performed at SGS Dayton, NJ.
FC11168-11 for Total Organic Carbon: Analysis performed at SGS Dayton, NJ.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

# CASE NARRATIVE / CONFORMANCE SUMMARY

| | | | |
|---|---|---|---|
| **Client:** | SGS Orlando, FL | **Job No:** | FC11168 |
| **Site:** | GEOSORP: Oakland Harbor | **Report Date** | 12/4/2023 6:11:45 AM |

On 11/11/2023, 3 sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 4.8 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of FC11168 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## General Chemistry By Method ASTM D422-63

**Matrix:** SO **Batch ID:** GP50682

- Sample(s) JD77372-1DUP were used as the QC samples for the % Gravel, % Sand, % Silt, Clay, Colloids, 0.0015 mm (Hydrometer), 0.005 mm (Hydrometer), 0.030 mm (Hydrometer), 0.375 Inch Sieve, 0.75 inch sieve, 1.5 Inch Sieve, 3 inch sieve, No.10 Sieve (2.00 mm), No.100 Sieve (0.15 mm), No.16 Sieve (1.18 mm), No.200 Sieve (0.075 mm), No.30 Sieve (0.60 mm), No.4 Sieve (4.75 mm), No.50 Sieve (0.30 mm), No.8 Sieve (2.36 mm) analysis.

## General Chemistry By Method SW846 9060A

**Matrix:** SO **Batch ID:** GP50606

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) FC11080-1MSD, FC11080-1MS were used as the QC samples for the Total Organic Carbon analysis.
- FC11168-11 for Total Organic Carbon: TOC Replicate Range: 7410 - 8960 mg/kg
- FC11168-2 for Total Organic Carbon: TOC Replicate Range: 9290 - 10700 mg/kg
- FC11168-1 for Total Organic Carbon: TOC Replicate Range: 3710 - 4500 mg/kg

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

# Summary of Hits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

3

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|---|
| **FC11168-1** | **01TB-TERMINAL** | | | | | |
| Benzo(a)anthracene | | 6.4 J | 21 | 10 | ug/kg | SW846 8270E BY SIM |
| Benzo(a)pyrene | | 8.0 J | 21 | 10 | ug/kg | SW846 8270E BY SIM |
| Benzo(b)fluoranthene | | 10.4 J | 21 | 10 | ug/kg | SW846 8270E BY SIM |
| Benzo(g,h,i)perylene | | 5.5 J | 21 | 10 | ug/kg | SW846 8270E BY SIM |
| Indeno(1,2,3-cd)pyrene | | 5.8 J | 21 | 10 | ug/kg | SW846 8270E BY SIM |
| Pyrene | | 28.4 J | 100 | 52 | ug/kg | SW846 8270E BY SIM |
| Arsenic | | 6.3 | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Cadmium | | 0.14 J | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Chromium | | 62.0 | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Copper | | 30.3 | 1.7 | 0.66 | mg/kg | SW846 6020B |
| Lead | | 15.2 | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Mercury | | 0.14 | 0.059 | 0.024 | mg/kg | SW846 7471B |
| Nickel | | 55.3 | 0.66 | 0.26 | mg/kg | SW846 6020B |
| Selenium | | 1.1 | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Silver | | 0.13 J | 0.33 | 0.13 | mg/kg | SW846 6020B |
| Zinc | | 73.6 | 6.6 | 2.6 | mg/kg | SW846 6020B |
| 3 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 1.5 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 0.75 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 0.375 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | | 99.7 | | [b] | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | | 94.8 | | [b] | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | | 64.0 | | [b] | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | | 54.9 | | [b] | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | | 41 | | [b] | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | | 31 | | [b] | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | | 18 | | [b] | % | ASTM D422-63 |
| % Sand [a] | | 45.1 | | [b] | % | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | | 54.9 | | [b] | % | ASTM D422-63 |
| Total Organic Carbon [c] | | 3940 | 1500 | 1400 | mg/kg | SW846 9060A |
| **FC11168-1A** | **01TB-TERMINAL** | | | | | |
| No hits reported in this sample. | | | | | | |
| **FC11168-2** | **01TB-BELOW-35 MLLW** | | | | | |
| Anthracene | | 68.7 J | 130 | 63 | ug/kg | SW846 8270E BY SIM |
| Benzo(a)anthracene | | 102 | 25 | 13 | ug/kg | SW846 8270E BY SIM |

# Summary of Hits

**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

3

| Lab Sample ID Client Sample ID Analyte | Result/ Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|
| Benzo(a)pyrene | 220 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Benzo(b)fluoranthene | 267 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Benzo(g,h,i)perylene | 121 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Benzo(k)fluoranthene | 79.4 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Chrysene | 148 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Dibenzo(a,h)anthracene | 15.7 J | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Fluoranthene | 250 | 130 | 63 | ug/kg | SW846 8270E BY SIM |
| Indeno(1,2,3-cd)pyrene | 137 | 25 | 13 | ug/kg | SW846 8270E BY SIM |
| Naphthalene | 105 J | 130 | 63 | ug/kg | SW846 8270E BY SIM |
| Phenanthrene | 155 | 130 | 63 | ug/kg | SW846 8270E BY SIM |
| Pyrene | 720 | 130 | 63 | ug/kg | SW846 8270E BY SIM |
| Arsenic | 10.2 | 0.46 | 0.18 | mg/kg | SW846 6020B |
| Cadmium | 0.60 | 0.46 | 0.18 | mg/kg | SW846 6020B |
| Chromium | 93.7 | 1.8 | 0.73 | mg/kg | SW846 6020B |
| Copper | 72.1 | 2.3 | 0.92 | mg/kg | SW846 6020B |
| Lead | 67.9 | 0.46 | 0.18 | mg/kg | SW846 6020B |
| Mercury | 0.49 | 0.079 | 0.032 | mg/kg | SW846 7471B |
| Nickel | 84.4 | 0.92 | 0.37 | mg/kg | SW846 6020B |
| Selenium | 1.1 | 0.46 | 0.18 | mg/kg | SW846 6020B |
| Silver | 0.50 | 0.46 | 0.18 | mg/kg | SW846 6020B |
| Zinc | 203 | 9.2 | 3.7 | mg/kg | SW846 6020B |
| 3 Inch Sieve [a] | 100 | | [b] | % | ASTM D422-63 |
| 1.5 Inch Sieve [a] | 100 | | [b] | % | ASTM D422-63 |
| 0.75 Inch Sieve [a] | 100 | | [b] | % | ASTM D422-63 |
| 0.375 Inch Sieve [a] | 100 | | [b] | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | 100 | | [b] | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | 100 | | [b] | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | 100 | | [b] | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | 100 | | [b] | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | 99.7 | | [b] | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | 96.3 | | [b] | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | 80.6 | | [b] | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | 78.0 | | [b] | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | 52 | | [b] | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | 37 | | [b] | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | 19 | | [b] | % | ASTM D422-63 |
| % Sand [a] | 22.0 | | [b] | % | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | 78.0 | | [b] | % | ASTM D422-63 |
| Total Organic Carbon [d] | 9830 | 1900 | 1700 | mg/kg | SW846 9060A |

**FC11168-2A 01TB-BELOW-35 MLLW**

No hits reported in this sample.

# Summary of Hits

**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

3

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|---|
| **FC11168-11** | **01TB-SURFACE TO-35 MLLW** | | | | | |
| Benzo(a)anthracene | | 51.8 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Benzo(a)pyrene | | 113 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Benzo(b)fluoranthene | | 133 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Benzo(g,h,i)perylene | | 65.3 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Benzo(k)fluoranthene | | 36.0 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Chrysene | | 59.0 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Dibenzo(a,h)anthracene | | 8.0 J | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Fluoranthene | | 88.1 J | 120 | 60 | ug/kg | SW846 8270E BY SIM |
| Indeno(1,2,3-cd)pyrene | | 73.4 | 24 | 12 | ug/kg | SW846 8270E BY SIM |
| Naphthalene | | 73.7 J | 120 | 60 | ug/kg | SW846 8270E BY SIM |
| Phenanthrene | | 78.3 J | 120 | 60 | ug/kg | SW846 8270E BY SIM |
| Pyrene | | 257 | 120 | 60 | ug/kg | SW846 8270E BY SIM |
| Arsenic | | 7.3 | 0.32 | 0.13 | mg/kg | SW846 6020B |
| Cadmium | | 0.27 J | 0.32 | 0.13 | mg/kg | SW846 6020B |
| Chromium | | 81.7 | 1.3 | 0.51 | mg/kg | SW846 6020B |
| Copper | | 50.8 | 1.6 | 0.64 | mg/kg | SW846 6020B |
| Lead | | 34.0 | 0.32 | 0.13 | mg/kg | SW846 6020B |
| Mercury | | 0.33 | 0.068 | 0.027 | mg/kg | SW846 7471B |
| Nickel | | 75.1 | 2.6 | 1.0 | mg/kg | SW846 6020B |
| Selenium | | 0.99 | 0.32 | 0.13 | mg/kg | SW846 6020B |
| Silver | | 0.26 J | 0.32 | 0.13 | mg/kg | SW846 6020B |
| Zinc | | 136 | 6.4 | 2.6 | mg/kg | SW846 6020B |
| 3 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 1.5 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 0.75 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| 0.375 Inch Sieve [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | | 100 | | [b] | % | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | | 99.9 | | [b] | % | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | | 99.7 | | [b] | % | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | | 91.7 | | [b] | % | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | | 70.1 | | [b] | % | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | | 66.7 | | [b] | % | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | | 48 | | [b] | % | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | | 34 | | [b] | % | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | | 19 | | [b] | % | ASTM D422-63 |
| % Sand [a] | | 33.3 | | [b] | % | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | | 66.7 | | [b] | % | ASTM D422-63 |
| Total Organic Carbon [e] | | 7900 | 1800 | 1600 | mg/kg | SW846 9060A |

# Summary of Hits

**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| Lab Sample ID<br>Analyte | Client Sample ID | Result/<br>Qual | LOQ | LOD | Units | Method |
|---|---|---|---|---|---|---|

**FC11168-11A 01TB-SURFACE TO-35 MLLW**

No hits reported in this sample.

(a) Analysis performed at SGS Dayton, NJ.
(b) Value reported is laboratory DL (MDL).
(c) TOC Replicate Range: 3710 - 4500 mg/kg Analysis performed at SGS Dayton, NJ.
(d) TOC Replicate Range: 9290 - 10700 mg/kg Analysis performed at SGS Dayton, NJ.
(e) TOC Replicate Range: 7410 - 8960 mg/kg Analysis performed at SGS Dayton, NJ.

## Sample Results

Report of Analysis

SGS North America Inc.

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-TERMINAL | | |
| **Lab Sample ID:** | FC11168-1 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E BY SIM SW846 3546 | **Percent Solids:** | 64.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 7G29157.D | 1 | 12/04/23 14:39 | MF | 11/19/23 07:00 | OP182 | S7G1145 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 14.9 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 52 U | 100 | 52 | 41 | ug/kg | |
| 208-96-8 | Acenaphthylene | 52 U | 100 | 52 | 41 | ug/kg | |
| 120-12-7 | Anthracene | 52 U | 100 | 52 | 26 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 6.4 | 21 | 10 | 5.2 | ug/kg | J |
| 50-32-8 | Benzo(a)pyrene | 8.0 | 21 | 10 | 5.2 | ug/kg | J |
| 205-99-2 | Benzo(b)fluoranthene | 10.4 | 21 | 10 | 5.2 | ug/kg | J |
| 191-24-2 | Benzo(g,h,i)perylene | 5.5 | 21 | 10 | 5.2 | ug/kg | J |
| 207-08-9 | Benzo(k)fluoranthene | 10 U | 21 | 10 | 5.2 | ug/kg | |
| 218-01-9 | Chrysene | 10 U | 21 | 10 | 5.2 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 10 U | 21 | 10 | 5.2 | ug/kg | |
| 206-44-0 | Fluoranthene | 52 U | 100 | 52 | 26 | ug/kg | |
| 86-73-7 | Fluorene | 52 U | 100 | 52 | 41 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 5.8 | 21 | 10 | 5.2 | ug/kg | J |
| 90-12-0 | 1-Methylnaphthalene | 52 U | 100 | 52 | 41 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 52 U | 100 | 52 | 41 | ug/kg | |
| 91-20-3 | Naphthalene | 52 U | 100 | 52 | 41 | ug/kg | |
| 85-01-8 | Phenanthrene | 52 U | 100 | 52 | 26 | ug/kg | |
| 129-00-0 | Pyrene | 28.4 | 100 | 52 | 26 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 112% | | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 123% | | 50-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-TERMINAL | | |
| **Lab Sample ID:** | FC11168-1 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8081B SW846 3546 | **Percent Solids:** | 64.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | ST171399.D | 1 | 11/20/23 13:52 | WH | 11/19/23 07:00 | OP185 | GST4184 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.4 g | 5.0 ml |
| Run #2 | | |

**Pesticide TCL List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 309-00-2 | Aldrin | 1.3 U | 2.5 | 1.3 | 0.79 | ug/kg | |
| 319-84-6 | alpha-BHC | 1.3 U | 2.5 | 1.3 | 0.79 | ug/kg | |
| 319-85-7 | beta-BHC | 1.3 U | 2.5 | 1.3 | 0.74 | ug/kg | |
| 319-86-8 | delta-BHC | 1.3 U | 2.5 | 1.3 | 0.71 | ug/kg | |
| 58-89-9 | gamma-BHC (Lindane) | 1.3 U | 2.5 | 1.3 | 0.75 | ug/kg | |
| 5103-71-9 | alpha-Chlordane | 1.3 U | 2.5 | 1.3 | 0.78 | ug/kg | |
| 5103-74-2 | gamma-Chlordane | 1.3 U | 2.5 | 1.3 | 0.72 | ug/kg | |
| 60-57-1 | Dieldrin | 1.3 U | 2.5 | 1.3 | 0.70 | ug/kg | |
| 72-54-8 | 4,4'-DDD | 1.3 U | 5.0 | 1.3 | 0.69 | ug/kg | |
| 72-55-9 | 4,4'-DDE | 1.3 U | 5.0 | 1.3 | 0.91 | ug/kg | |
| 50-29-3 | 4,4'-DDT [a] | 1.3 U | 5.0 | 1.3 | 0.77 | ug/kg | |
| 72-20-8 | Endrin | 2.5 U | 5.0 | 2.5 | 1.3 | ug/kg | |
| 1031-07-8 | Endosulfan sulfate | 1.3 U | 5.0 | 1.3 | 0.66 | ug/kg | |
| 7421-93-4 | Endrin aldehyde | 1.3 U | 5.0 | 1.3 | 0.58 | ug/kg | |
| 53494-70-5 | Endrin ketone | 1.3 U | 5.0 | 1.3 | 0.79 | ug/kg | |
| 959-98-8 | Endosulfan-I | 1.3 U | 2.5 | 1.3 | 0.58 | ug/kg | |
| 33213-65-9 | Endosulfan-II | 1.3 U | 2.5 | 1.3 | 0.59 | ug/kg | |
| 76-44-8 | Heptachlor | 1.3 U | 2.5 | 1.3 | 0.74 | ug/kg | |
| 1024-57-3 | Heptachlor epoxide | 1.3 U | 2.5 | 1.3 | 0.74 | ug/kg | |
| 72-43-5 | Methoxychlor [a] | 2.5 U | 5.0 | 2.5 | 1.0 | ug/kg | |
| 8001-35-2 | Toxaphene | 63 U | 130 | 63 | 38 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 88% | | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 85% | | 50-133% |

(a) Associated CCV outside of control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-TERMINAL | | |
| **Lab Sample ID:** | FC11168-1 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 64.7 |
| **Project:** | Oakland Harbor | | |

**Metals Analysis**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 6.3 | 0.33 | 0.13 | 0.033 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Cadmium | 0.14 J | 0.33 | 0.13 | 0.033 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Chromium | 62.0 | 0.33 | 0.13 | 0.033 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Copper | 30.3 | 1.7 | 0.66 | 0.17 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Lead | 15.2 | 0.33 | 0.13 | 0.033 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Mercury | 0.14 | 0.059 | 0.024 | 0.0059 | mg/kg | 1 | 11/28/23 | 11/28/23 | ST | SW846 7471B [2] | SW846 7471B [4] |
| Nickel | 55.3 | 0.66 | 0.26 | 0.066 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Selenium | 1.1 | 0.33 | 0.13 | 0.059 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Silver | 0.13 J | 0.33 | 0.13 | 0.033 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Zinc | 73.6 | 6.6 | 2.6 | 0.66 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA19842
(2) Instrument QC Batch: MA19863
(3) Prep QC Batch: MP43153
(4) Prep QC Batch: MP43202

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-TERMINAL | | |
| **Lab Sample ID:** | FC11168-1 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 64.7 |
| **Project:** | Oakland Harbor | | |

**General Chemistry**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Particle Size Analysis (Sieve and Hydrometer Testing)** | | | | | | | | | |
| 3 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 1.5 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.75 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.375 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | 99.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | 94.8 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | 64.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | 54.9 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | 41 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | 31 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | 18 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Gravel [a] | 0.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Sand [a] | 45.1 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | 54.9 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| Moisture, Percent | 35.3 | | | | % | 1 | 11/17/23 15:46 | JC | SM19 2540G |
| Total Organic Carbon [b] | 3940 | 1500 | 1400 | 1300 | mg/kg | 1 | 11/21/23 16:45 | ANJ | SW846 9060A |

(a) Analysis performed at SGS Dayton, NJ.

(b) TOC Replicate Range: 3710 - 4500 mg/kg Analysis performed at SGS Dayton, NJ.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD

LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-TERMINAL | | |
| **Lab Sample ID:** | FC11168-1A | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E SW846 3550C | **Percent Solids:** | 64.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | X091645.D | 1 | 12/07/23 13:04 | KA | 12/06/23 11:34 | OP458 | SX3629 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

**ABN Full List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 51 U | 250 | 51 | 25 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 72% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 79% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 55% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 68% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 69% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 82% | | 45-119% |

(a) Sample extracted beyond hold time.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-BELOW-35 MLLW | | |
| **Lab Sample ID:** | FC11168-2 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E BY SIM SW846 3546 | **Percent Solids:** | 52.9 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 7G29158.D | 1 | 12/04/23 15:08 | MF | 11/19/23 07:00 | OP182 | S7G1145 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 63 U | 130 | 63 | 50 | ug/kg | |
| 208-96-8 | Acenaphthylene | 63 U | 130 | 63 | 50 | ug/kg | |
| 120-12-7 | Anthracene | 68.7 | 130 | 63 | 32 | ug/kg | J |
| 56-55-3 | Benzo(a)anthracene | 102 | 25 | 13 | 6.3 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 220 | 25 | 13 | 6.3 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 267 | 25 | 13 | 6.3 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 121 | 25 | 13 | 6.3 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 79.4 | 25 | 13 | 6.3 | ug/kg | |
| 218-01-9 | Chrysene | 148 | 25 | 13 | 6.3 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 15.7 | 25 | 13 | 6.3 | ug/kg | J |
| 206-44-0 | Fluoranthene | 250 | 130 | 63 | 32 | ug/kg | |
| 86-73-7 | Fluorene | 63 U | 130 | 63 | 50 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 137 | 25 | 13 | 6.3 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 63 U | 130 | 63 | 50 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 63 U | 130 | 63 | 50 | ug/kg | |
| 91-20-3 | Naphthalene | 105 | 130 | 63 | 50 | ug/kg | J |
| 85-01-8 | Phenanthrene | 155 | 130 | 63 | 32 | ug/kg | |
| 129-00-0 | Pyrene | 720 | 130 | 63 | 32 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 117% | | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 102% | | 50-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-BELOW-35 MLLW | | |
| **Lab Sample ID:** | FC11168-2 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8081B SW846 3546 | **Percent Solids:** | 52.9 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | ST171400.D | 1 | 11/20/23 14:06 | WH | 11/19/23 07:00 | OP185 | GST4184 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.0 g | 5.0 ml |
| Run #2 | | |

**Pesticide TCL List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 309-00-2 | Aldrin | 1.6 U | 3.2 | 1.6 | 1.0 | ug/kg | |
| 319-84-6 | alpha-BHC | 1.6 U | 3.2 | 1.6 | 1.0 | ug/kg | |
| 319-85-7 | beta-BHC | 1.6 U | 3.2 | 1.6 | 0.93 | ug/kg | |
| 319-86-8 | delta-BHC | 1.6 U | 3.2 | 1.6 | 0.89 | ug/kg | |
| 58-89-9 | gamma-BHC (Lindane) | 1.6 U | 3.2 | 1.6 | 0.95 | ug/kg | |
| 5103-71-9 | alpha-Chlordane | 1.6 U | 3.2 | 1.6 | 0.98 | ug/kg | |
| 5103-74-2 | gamma-Chlordane | 1.6 U | 3.2 | 1.6 | 0.91 | ug/kg | |
| 60-57-1 | Dieldrin | 1.6 U | 3.2 | 1.6 | 0.88 | ug/kg | |
| 72-54-8 | 4,4'-DDD | 1.6 U | 6.3 | 1.6 | 0.87 | ug/kg | |
| 72-55-9 | 4,4'-DDE | 1.6 U | 6.3 | 1.6 | 1.1 | ug/kg | |
| 50-29-3 | 4,4'-DDT [a] | 1.6 U | 6.3 | 1.6 | 0.96 | ug/kg | |
| 72-20-8 | Endrin | 3.2 U | 6.3 | 3.2 | 1.6 | ug/kg | |
| 1031-07-8 | Endosulfan sulfate | 1.6 U | 6.3 | 1.6 | 0.83 | ug/kg | |
| 7421-93-4 | Endrin aldehyde | 1.6 U | 6.3 | 1.6 | 0.73 | ug/kg | |
| 53494-70-5 | Endrin ketone | 1.6 U | 6.3 | 1.6 | 0.99 | ug/kg | |
| 959-98-8 | Endosulfan-I | 1.6 U | 3.2 | 1.6 | 0.72 | ug/kg | |
| 33213-65-9 | Endosulfan-II | 1.6 U | 3.2 | 1.6 | 0.74 | ug/kg | |
| 76-44-8 | Heptachlor | 1.6 U | 3.2 | 1.6 | 0.93 | ug/kg | |
| 1024-57-3 | Heptachlor epoxide | 1.6 U | 3.2 | 1.6 | 0.93 | ug/kg | |
| 72-43-5 | Methoxychlor [a] | 3.2 U | 6.3 | 3.2 | 1.3 | ug/kg | |
| 8001-35-2 | Toxaphene | 79 U | 160 | 79 | 47 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 82% | | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 77% | | 50-133% |

(a) Associated CCV outside of control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-BELOW-35 MLLW | | |
| **Lab Sample ID:** | FC11168-2 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 52.9 |
| **Project:** | Oakland Harbor | | |

**Metals Analysis**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 10.2 | 0.46 | 0.18 | 0.046 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Cadmium | 0.60 | 0.46 | 0.18 | 0.046 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Chromium | 93.7 | 1.8 | 0.73 | 0.18 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Copper | 72.1 | 2.3 | 0.92 | 0.23 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Lead | 67.9 | 0.46 | 0.18 | 0.046 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Mercury | 0.49 | 0.079 | 0.032 | 0.0079 | mg/kg | 1 | 11/28/23 | 11/28/23 | ST | SW846 7471B [2] | SW846 7471B [4] |
| Nickel | 84.4 | 0.92 | 0.37 | 0.092 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Selenium | 1.1 | 0.46 | 0.18 | 0.083 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Silver | 0.50 | 0.46 | 0.18 | 0.046 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Zinc | 203 | 9.2 | 3.7 | 0.92 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA19842
(2) Instrument QC Batch: MA19863
(3) Prep QC Batch: MP43153
(4) Prep QC Batch: MP43202

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-BELOW-35 MLLW | | |
| **Lab Sample ID:** | FC11168-2 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 52.9 |
| **Project:** | Oakland Harbor | | |

**General Chemistry**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Particle Size Analysis (Sieve and Hydrometer Testing)** | | | | | | | | | |
| 3 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 1.5 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.75 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.375 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | 99.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | 96.3 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | 80.6 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | 78.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | 52 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | 37 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | 19 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Gravel [a] | 0.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Sand [a] | 22.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | 78.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| Moisture, Percent | 47.1 | | | | % | 1 | 11/17/23 15:46 | JC | SM19 2540G |
| Total Organic Carbon [b] | 9830 | 1900 | 1700 | 1600 | mg/kg | 1 | 11/21/23 17:03 | ANJ | SW846 9060A |

(a) Analysis performed at SGS Dayton, NJ.

(b) TOC Replicate Range: 9290 - 10700 mg/kg Analysis performed at SGS Dayton, NJ.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD

LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-BELOW-35 MLLW | | |
| **Lab Sample ID:** | FC11168-2A | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E SW846 3550C | **Percent Solids:** | 52.9 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | X091646.D | 1 | 12/07/23 13:31 | KA | 12/06/23 11:34 | OP458 | SX3629 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 29.8 g | 1.0 ml |
| Run #2 | | |

**ABN Full List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 63 U | 320 | 63 | 32 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 67% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 75% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 57% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 64% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 63% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 74% | | 45-119% |

(a) Sample extracted beyond hold time.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-SURFACE TO-35 MLLW | | |
| **Lab Sample ID:** | FC11168-11 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E BY SIM SW846 3546 | **Percent Solids:** | 54.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | 7G29159.D | 1 | 12/04/23 15:36 | MF | 11/19/23 07:00 | OP182 | S7G1145 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.3 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 60 U | 120 | 60 | 48 | ug/kg | |
| 208-96-8 | Acenaphthylene | 60 U | 120 | 60 | 48 | ug/kg | |
| 120-12-7 | Anthracene | 60 U | 120 | 60 | 30 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | 51.8 | 24 | 12 | 6.0 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 113 | 24 | 12 | 6.0 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 133 | 24 | 12 | 6.0 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 65.3 | 24 | 12 | 6.0 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | 36.0 | 24 | 12 | 6.0 | ug/kg | |
| 218-01-9 | Chrysene | 59.0 | 24 | 12 | 6.0 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 8.0 | 24 | 12 | 6.0 | ug/kg | J |
| 206-44-0 | Fluoranthene | 88.1 | 120 | 60 | 30 | ug/kg | J |
| 86-73-7 | Fluorene | 60 U | 120 | 60 | 48 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 73.4 | 24 | 12 | 6.0 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 60 U | 120 | 60 | 48 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 60 U | 120 | 60 | 48 | ug/kg | |
| 91-20-3 | Naphthalene | 73.7 | 120 | 60 | 48 | ug/kg | J |
| 85-01-8 | Phenanthrene | 78.3 | 120 | 60 | 30 | ug/kg | J |
| 129-00-0 | Pyrene | 257 | 120 | 60 | 30 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 111% | | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 95% | | 50-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-SURFACE TO-35 MLLW | | |
| **Lab Sample ID:** | FC11168-11 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8081B SW846 3546 | **Percent Solids:** | 54.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | ST171401.D | 1 | 11/20/23 14:21 | WH | 11/19/23 07:00 | OP185 | GST4184 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 15.3 g | 5.0 ml |
| Run #2 | | |

**Pesticide TCL List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 309-00-2 | Aldrin | 1.5 U | 3.0 | 1.5 | 0.94 | ug/kg | |
| 319-84-6 | alpha-BHC | 1.5 U | 3.0 | 1.5 | 0.94 | ug/kg | |
| 319-85-7 | beta-BHC | 1.5 U | 3.0 | 1.5 | 0.88 | ug/kg | |
| 319-86-8 | delta-BHC | 1.5 U | 3.0 | 1.5 | 0.85 | ug/kg | |
| 58-89-9 | gamma-BHC (Lindane) | 1.5 U | 3.0 | 1.5 | 0.90 | ug/kg | |
| 5103-71-9 | alpha-Chlordane | 1.5 U | 3.0 | 1.5 | 0.93 | ug/kg | |
| 5103-74-2 | gamma-Chlordane | 1.5 U | 3.0 | 1.5 | 0.86 | ug/kg | |
| 60-57-1 | Dieldrin | 1.5 U | 3.0 | 1.5 | 0.84 | ug/kg | |
| 72-54-8 | 4,4'-DDD | 1.5 U | 6.0 | 1.5 | 0.82 | ug/kg | |
| 72-55-9 | 4,4'-DDE | 1.5 U | 6.0 | 1.5 | 1.1 | ug/kg | |
| 50-29-3 | 4,4'-DDT [a] | 1.5 U | 6.0 | 1.5 | 0.91 | ug/kg | |
| 72-20-8 | Endrin | 3.0 U | 6.0 | 3.0 | 1.5 | ug/kg | |
| 1031-07-8 | Endosulfan sulfate | 1.5 U | 6.0 | 1.5 | 0.79 | ug/kg | |
| 7421-93-4 | Endrin aldehyde | 1.5 U | 6.0 | 1.5 | 0.69 | ug/kg | |
| 53494-70-5 | Endrin ketone | 1.5 U | 6.0 | 1.5 | 0.94 | ug/kg | |
| 959-98-8 | Endosulfan-I | 1.5 U | 3.0 | 1.5 | 0.69 | ug/kg | |
| 33213-65-9 | Endosulfan-II | 1.5 U | 3.0 | 1.5 | 0.70 | ug/kg | |
| 76-44-8 | Heptachlor | 1.5 U | 3.0 | 1.5 | 0.88 | ug/kg | |
| 1024-57-3 | Heptachlor epoxide | 1.5 U | 3.0 | 1.5 | 0.88 | ug/kg | |
| 72-43-5 | Methoxychlor [a] | 3.0 U | 6.0 | 3.0 | 1.2 | ug/kg | |
| 8001-35-2 | Toxaphene | 75 U | 150 | 75 | 45 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 81% | | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 77% | | 50-133% |

(a) Associated CCV outside of control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-SURFACE TO-35 MLLW | | |
| **Lab Sample ID:** | FC11168-11 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 54.7 |
| **Project:** | Oakland Harbor | | |

**Metals Analysis**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Prep | Analyzed | By | Method | Prep Method |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 7.3 | 0.32 | 0.13 | 0.032 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Cadmium | 0.27 J | 0.32 | 0.13 | 0.032 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Chromium | 81.7 | 1.3 | 0.51 | 0.13 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Copper | 50.8 | 1.6 | 0.64 | 0.16 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Lead | 34.0 | 0.32 | 0.13 | 0.032 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Mercury | 0.33 | 0.068 | 0.027 | 0.0068 | mg/kg | 1 | 11/28/23 | 11/28/23 | ST | SW846 7471B [2] | SW846 7471B [4] |
| Nickel | 75.1 | 2.6 | 1.0 | 0.26 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Selenium | 0.99 | 0.32 | 0.13 | 0.058 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Silver | 0.26 J | 0.32 | 0.13 | 0.032 | mg/kg | 5 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |
| Zinc | 136 | 6.4 | 2.6 | 0.64 | mg/kg | 20 | 11/15/23 | 11/16/23 | JC | SW846 6020B [1] | SW846 3050B [3] |

(1) Instrument QC Batch: MA19842
(2) Instrument QC Batch: MA19863
(3) Prep QC Batch: MP43153
(4) Prep QC Batch: MP43203

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD
LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

SGS North America Inc.

# Report of Analysis



| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-SURFACE TO-35 MLLW | | |
| **Lab Sample ID:** | FC11168-11 | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| | | **Percent Solids:** | 54.7 |
| **Project:** | Oakland Harbor | | |

**General Chemistry**

| Analyte | Result | LOQ | LOD | DL | Units | DF | Analyzed | By | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Particle Size Analysis (Sieve and Hydrometer Testing)** | | | | | | | | | |
| 3 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 1.5 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.75 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.375 Inch Sieve [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.4 Sieve (4.75 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.8 Sieve (2.36 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.10 Sieve (2.00 mm) [a] | 100 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.16 Sieve (1.18 mm) [a] | 99.9 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.30 Sieve (0.60 mm) [a] | 99.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.50 Sieve (0.30 mm) [a] | 91.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.100 Sieve (0.15 mm) [a] | 70.1 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| No.200 Sieve (0.075 mm) [a] | 66.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.030 mm (Hydrometer) [a] | 48 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.005 mm (Hydrometer) [a] | 34 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| 0.0015 mm (Hydrometer) [a] | 19 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Gravel [a] | 0.0 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Sand [a] | 33.3 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| % Silt, Clay, Colloids [a] | 66.7 | | | | % | 1 | 12/01/23 00:33 | ANJ | ASTM D422-63 |
| Moisture, Percent | 45.3 | | | | % | 1 | 11/17/23 15:46 | JC | SM19 2540G |
| Total Organic Carbon [b] | 7900 | 1800 | 1600 | 1600 | mg/kg | 1 | 11/21/23 17:20 | ANJ | SW846 9060A |

(a) Analysis performed at SGS Dayton, NJ.

(b) TOC Replicate Range: 7410 - 8960 mg/kg Analysis performed at SGS Dayton, NJ.

LOQ = Limit of Quantitation DL = Detection Limit U = Indicates a result < LOD

LOD = Limit of Detection B = Analyte found in associated blank J = Indicates a result > = DL (MDL) but < LOQ

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 01TB-SURFACE TO-35 MLLW | | |
| **Lab Sample ID:** | FC11168-11A | **Date Sampled:** | 11/09/23 |
| **Matrix:** | SO - Sediment | **Date Received:** | 11/11/23 |
| **Method:** | SW846 8270E SW846 3550C | **Percent Solids:** | 54.7 |
| **Project:** | Oakland Harbor | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | X091647.D | 1 | 12/07/23 13:58 | KA | 12/06/23 11:34 | OP458 | SX3629 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.0 g | 1.0 ml |
| Run #2 | | |

**ABN Full List**

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 61 U | 300 | 61 | 30 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 77% | | 40-102% |
| 4165-62-2 | Phenol-d5 | 87% | | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 64% | | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 76% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 71% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 83% | | 45-119% |

(a) Sample extracted beyond hold time.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

# Misc. Forms

## Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

# SGS North America Inc - Orlando

## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC11168

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

**Client / Reporting Information**

Company Name: Geosyntec Consultants
Address: 920 SW 6th Ave, Suite 600
City: Portland State: OR Zip: 97204
Project Contact: Erin Dunbar Email: edunbar@geosyntec.com
Phone #: 971-271-5916
Sampler(s) Name(s) (Printed)
Sampler 1: Erin Dunbar Sampler 2: Megan Ogburn

**Project Information**

Project Name: Oakland Harbor
Street
City: Oakland State: CA
Project #: PNG1060
Fax #
Client Purchase Order # 1000539162

**Analytical Information**

| SGS Orlando Sample # | Field ID / Point of Collection | Collection Date | Time | Sampled By: | Matrix | Total # of Bottles | Other | None | HCl | NaOH | HNO3 | H2SO4 | NaOH+ZnAc | DI WATER | MEOH | PAHs 8270 | Pesticides 8081 | PCBs Congeners 8082/1668 | TOC 9060 | Dioxin/Furan 1613 | Butyltins Krone 1988 | Grain Size D422 | Metals 6020/7471 | Solids 2540 | Archive | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OITB - Terminal | 11/9/23 | 1513 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 2 | OITB - Below -35 MLLW | 11/9/23 | 1530 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 3 | Archive-02 | 11/9/23 | 1552 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 4 | Archive-03 | 11/9/23 | 1556 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 5 | Archive-04 | 11/9/23 | 1559 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 6 | Archive-01 | 11/9/23 | 1606 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 7 | Archive-08 | 11/9/23 | 1609 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 8 | Archive-05A | 11/9/23 | 1611 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 9 | Archive-07 | 11/9/23 | 1618 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 10 | Archive-05 | 11/9/23 | 1622 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 11 | OITB - Surface to -35 MLLW | 11/9/23 | 1625 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |

INITIAL ASSESSMENT
LABEL VERIFICATION

**Matrix Codes**: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

**Turnaround Time (Business days)**

10 Day (Business) — Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

Metals include: As, Cr, Cd, Cu, Pb, Ni, Se, Ag, Zn, Hg

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|
| 1 Erin Dunbar Geosyntec | 11/10/23 1151 | 2 to FedEx | 3 | | 4 1000 11/11/23 |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
| 5 | | 6 | 7 | | 8 |

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 4.6 IR1

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FC11168: Chain of Custody
Page 1 of 2

# SGS Sample Receipt Summary

**Job Number:** fc11168 **Client:** Geosyntec Consultants **Project:** Oakland Harbor

**Date / Time Received:** 11/11/2023 10:00:00 AM **Delivery Method:** FedEx **Airbill #'s:** 786219631416

**Cooler Temps (Raw Measured) °C:** Cooler 1: (4.6);

**Cooler Temps (Corrected) °C:** Cooler 1: (5.0);

| Cooler Informatio | Y | or | N |
|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ |
| 3. Temp criteria achieved: | ☑ | | ☐ |
| 4. Cooler temp verification: | | | IR Gun |
| 5. Cooler media: | | | Ice (Bag) |

| Trip Blank Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |

| | W | or | S | N/A |
|---|---|---|---|---|
| 3. Type of TB Received | ☐ | | ☐ | ☑ |

| Sample Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ | |
| 2. Samples presented properly | ☑ | | ☐ | |
| 3. Suffiient volume/containers recv'd for analysi | ☑ | | ☐ | |
| 4. Condition of sample: | Intact | | | |
| 5. Sample recv'd within HT | ☑ | | ☐ | |
| 6. Dates/Times/IDs on COC match sample labe | ☑ | | ☐ | |
| 7. VOCs have headspace | ☐ | | ☐ | ☑ |
| 8. Bottles received for unspecified tests | ☐ | | ☑ | |
| 9. Compositing instructions clear | ☐ | | ☐ | ☑ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | | ☐ | ☑ |
| 11. % Solids Jar Received? | ☑ | | ☐ | ☐ |
| 12. Residual Chlorine Present? | ☐ | | ☐ | ☑ |

**Misc Information**

Number of Encores: 25 Gram 5 Gram Number of Lab Filtered Metals

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot _____

Comments

SM001
Rev. Date 05/04/17

Technician: DONM Date: 11/11/2023 3:46:04 PM Reviewer: ZD Date: 11/11/2023

**FC11168: Chain of Custody**
**Page 2 of 2**

# QC Evaluation: DOD QSM5.x Limits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| OP182 | SW846 8270E BY SIM | | | | | | |
| OP182-BS | 83-32-9 | Acenaphthene | BSP | REC | 81 | % | 44-111 |
| OP182-BS | 208-96-8 | Acenaphthylene | BSP | REC | 72 | % | 39-116 |
| OP182-BS | 120-12-7 | Anthracene | BSP | REC | 100 | % | 50-114 |
| OP182-BS | 56-55-3 | Benzo(a)anthracene | BSP | REC | 95 | % | 54-122 |
| OP182-BS | 50-32-8 | Benzo(a)pyrene | BSP | REC | 96 | % | 50-125 |
| OP182-BS | 205-99-2 | Benzo(b)fluoranthene | BSP | REC | 90 | % | 53-128 |
| OP182-BS | 191-24-2 | Benzo(g,h,i)perylene | BSP | REC | 86 | % | 49-127 |
| OP182-BS | 207-08-9 | Benzo(k)fluoranthene | BSP | REC | 86 | % | 56-123 |
| OP182-BS | 218-01-9 | Chrysene | BSP | REC | 85 | % | 57-118 |
| OP182-BS | 53-70-3 | Dibenzo(a,h)anthracene | BSP | REC | 85 | % | 50-129 |
| OP182-BS | 206-44-0 | Fluoranthene | BSP | REC | 88 | % | 55-119 |
| OP182-BS | 86-73-7 | Fluorene | BSP | REC | 87 | % | 47-114 |
| OP182-BS | 193-39-5 | Indeno(1,2,3-cd)pyrene | BSP | REC | 90 | % | 49-130 |
| OP182-BS | 90-12-0 | 1-Methylnaphthalene | BSP | REC | 91 | % | 43-111 |
| OP182-BS | 91-57-6 | 2-Methylnaphthalene | BSP | REC | 81 | % | 39-114 |
| OP182-BS | 91-20-3 | Naphthalene | BSP | REC | 80 | % | 38-111 |
| OP182-BS | 85-01-8 | Phenanthrene | BSP | REC | 86 | % | 49-113 |
| OP182-BS | 129-00-0 | Pyrene | BSP | REC | 86 | % | 55-117 |
| OP182-BS | 7297-45-2 | 2-Methylnaphthalene-d10 | BSP | SURR | 113 | % | 50-150 |
| OP182-BS | 93951-69-0 | Fluoranthene-d10 | BSP | SURR | 123 | % | 50-150 |
| OP182-MS* | 83-32-9 | Acenaphthene | MS | REC | 79 | % | 44-111 |
| OP182-MS* | 208-96-8 | Acenaphthylene | MS | REC | 74 | % | 39-116 |
| OP182-MS* | 120-12-7 | Anthracene | MS | REC | 99 | % | 50-114 |
| OP182-MS* | 56-55-3 | Benzo(a)anthracene | MS | REC | 107 | % | 54-122 |
| OP182-MS* | 50-32-8 | Benzo(a)pyrene | MS | REC | 94 | % | 50-125 |
| OP182-MS* | 205-99-2 | Benzo(b)fluoranthene | MS | REC | 97 | % | 53-128 |
| OP182-MS* | 191-24-2 | Benzo(g,h,i)perylene | MS | REC | 75 | % | 49-127 |
| OP182-MS* | 207-08-9 | Benzo(k)fluoranthene | MS | REC | 86 | % | 56-123 |
| OP182-MS* | 218-01-9 | Chrysene | MS | REC | 81 | % | 57-118 |
| OP182-MS* | 53-70-3 | Dibenzo(a,h)anthracene | MS | REC | 78 | % | 50-129 |
| OP182-MS* | 206-44-0 | Fluoranthene | MS | REC | 83 | % | 55-119 |
| OP182-MS* | 86-73-7 | Fluorene | MS | REC | 83 | % | 47-114 |
| OP182-MS* | 193-39-5 | Indeno(1,2,3-cd)pyrene | MS | REC | 89 | % | 49-130 |
| OP182-MS* | 90-12-0 | 1-Methylnaphthalene | MS | REC | 87 | % | 43-111 |
| OP182-MS* | 91-57-6 | 2-Methylnaphthalene | MS | REC | 80 | % | 39-114 |
| OP182-MS* | 91-20-3 | Naphthalene | MS | REC | 79 | % | 38-111 |
| OP182-MS* | 85-01-8 | Phenanthrene | MS | REC | 90 | % | 49-113 |
| OP182-MS* | 129-00-0 | Pyrene | MS | REC | 95 | % | 55-117 |
| OP182-MS* | 7297-45-2 | 2-Methylnaphthalene-d10 | MS | SURR | 107 | % | 50-150 |
| OP182-MS* | 93951-69-0 | Fluoranthene-d10 | MS | SURR | 112 | % | 50-150 |
| OP182-MSD* | 83-32-9 | Acenaphthene | MSD | REC | 81 | % | 44-111 |
| OP182-MSD* | 83-32-9 | Acenaphthene | MSD | RPD | 3 | % | 20 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| OP182-MSD* | 208-96-8 | Acenaphthylene | MSD | REC | 76 | % | 39-116 |
| OP182-MSD* | 208-96-8 | Acenaphthylene | MSD | RPD | 2 | % | 20 |
| OP182-MSD* | 120-12-7 | Anthracene | MSD | REC | 100 | % | 50-114 |
| OP182-MSD* | 120-12-7 | Anthracene | MSD | RPD | 1 | % | 20 |
| OP182-MSD* | 56-55-3 | Benzo(a)anthracene | MSD | REC | 107 | % | 54-122 |
| OP182-MSD* | 56-55-3 | Benzo(a)anthracene | MSD | RPD | 0 | % | 20 |
| OP182-MSD* | 50-32-8 | Benzo(a)pyrene | MSD | REC | 95 | % | 50-125 |
| OP182-MSD* | 50-32-8 | Benzo(a)pyrene | MSD | RPD | 1 | % | 20 |
| OP182-MSD* | 205-99-2 | Benzo(b)fluoranthene | MSD | REC | 96 | % | 53-128 |
| OP182-MSD* | 205-99-2 | Benzo(b)fluoranthene | MSD | RPD | 2 | % | 20 |
| OP182-MSD* | 191-24-2 | Benzo(g,h,i)perylene | MSD | REC | 79 | % | 49-127 |
| OP182-MSD* | 191-24-2 | Benzo(g,h,i)perylene | MSD | RPD | 5 | % | 20 |
| OP182-MSD* | 207-08-9 | Benzo(k)fluoranthene | MSD | REC | 84 | % | 56-123 |
| OP182-MSD* | 207-08-9 | Benzo(k)fluoranthene | MSD | RPD | 2 | % | 20 |
| OP182-MSD* | 218-01-9 | Chrysene | MSD | REC | 82 | % | 57-118 |
| OP182-MSD* | 218-01-9 | Chrysene | MSD | RPD | 2 | % | 20 |
| OP182-MSD* | 53-70-3 | Dibenzo(a,h)anthracene | MSD | REC | 83 | % | 50-129 |
| OP182-MSD* | 53-70-3 | Dibenzo(a,h)anthracene | MSD | RPD | 6 | % | 20 |
| OP182-MSD* | 206-44-0 | Fluoranthene | MSD | REC | 82 | % | 55-119 |
| OP182-MSD* | 206-44-0 | Fluoranthene | MSD | RPD | 1 | % | 20 |
| OP182-MSD* | 86-73-7 | Fluorene | MSD | REC | 88 | % | 47-114 |
| OP182-MSD* | 86-73-7 | Fluorene | MSD | RPD | 5 | % | 20 |
| OP182-MSD* | 193-39-5 | Indeno(1,2,3-cd)pyrene | MSD | REC | 93 | % | 49-130 |
| OP182-MSD* | 193-39-5 | Indeno(1,2,3-cd)pyrene | MSD | RPD | 5 | % | 20 |
| OP182-MSD* | 90-12-0 | 1-Methylnaphthalene | MSD | REC | 89 | % | 43-111 |
| OP182-MSD* | 90-12-0 | 1-Methylnaphthalene | MSD | RPD | 2 | % | 20 |
| OP182-MSD* | 91-57-6 | 2-Methylnaphthalene | MSD | REC | 81 | % | 39-114 |
| OP182-MSD* | 91-57-6 | 2-Methylnaphthalene | MSD | RPD | 1 | % | 20 |
| OP182-MSD* | 91-20-3 | Naphthalene | MSD | REC | 79 | % | 38-111 |
| OP182-MSD* | 91-20-3 | Naphthalene | MSD | RPD | 0 | % | 20 |
| OP182-MSD* | 85-01-8 | Phenanthrene | MSD | REC | 88 | % | 49-113 |
| OP182-MSD* | 85-01-8 | Phenanthrene | MSD | RPD | 3 | % | 20 |
| OP182-MSD* | 129-00-0 | Pyrene | MSD | REC | 90 | % | 55-117 |
| OP182-MSD* | 129-00-0 | Pyrene | MSD | RPD | 5 | % | 20 |
| OP182-MSD* | 7297-45-2 | 2-Methylnaphthalene-d10 | MSD | SURR | 108 | % | 50-150 |
| OP182-MSD* | 93951-69-0 | Fluoranthene-d10 | MSD | SURR | 110 | % | 50-150 |
| OP182-MB | 7297-45-2 | 2-Methylnaphthalene-d10 | MB | SURR | 107 | % | 50-150 |
| OP182-MB | 93951-69-0 | Fluoranthene-d10 | MB | SURR | 122 | % | 50-150 |
| FC11168-1 | 7297-45-2 | 2-Methylnaphthalene-d10 | SAMP | SURR | 112 | % | 50-150 |
| FC11168-1 | 93951-69-0 | Fluoranthene-d10 | SAMP | SURR | 123 | % | 50-150 |
| FC11168-2 | 7297-45-2 | 2-Methylnaphthalene-d10 | SAMP | SURR | 117 | % | 50-150 |
| FC11168-2 | 93951-69-0 | Fluoranthene-d10 | SAMP | SURR | 102 | % | 50-150 |
| FC11168-11 | 7297-45-2 | 2-Methylnaphthalene-d10 | SAMP | SURR | 111 | % | 50-150 |
| FC11168-11 | 93951-69-0 | Fluoranthene-d10 | SAMP | SURR | 95 | % | 50-150 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| OP458 | SW846 8270E | | | | | | |
| OP458-BS | 92-52-4 | 1,1'-Biphenyl | BSP | REC | 75 | % | 40-117 |
| OP458-BS | 92-52-4 | 1,1'-Biphenyl | BSP | REC | 71 | % | 40-117 |
| OP458-BS | 367-12-4 | 2-Fluorophenol | BSP | SURR | 69 | % | 35-115 |
| OP458-BS | 367-12-4 | 2-Fluorophenol | BSP | SURR | 73 | % | 35-115 |
| OP458-BS | 4165-62-2 | Phenol-d5 | BSP | SURR | 83 | % | 33-122 |
| OP458-BS | 4165-62-2 | Phenol-d5 | BSP | SURR | 78 | % | 33-122 |
| OP458-BS | 118-79-6 | 2,4,6-Tribromophenol | BSP | SURR | 70 | % | 39-132 |
| OP458-BS | 118-79-6 | 2,4,6-Tribromophenol | BSP | SURR | 68 | % | 39-132 |
| OP458-BS | 4165-60-0 | Nitrobenzene-d5 | BSP | SURR | 71 | % | 37-122 |
| OP458-BS | 4165-60-0 | Nitrobenzene-d5 | BSP | SURR | 78 | % | 37-122 |
| OP458-BS | 321-60-8 | 2-Fluorobiphenyl | BSP | SURR | 70 | % | 44-115 |
| OP458-BS | 321-60-8 | 2-Fluorobiphenyl | BSP | SURR | 73 | % | 44-115 |
| OP458-BS | 1718-51-0 | Terphenyl-d14 | BSP | SURR | 77 | % | 54-127 |
| OP458-BS | 1718-51-0 | Terphenyl-d14 | BSP | SURR | 75 | % | 54-127 |
| OP458-MS* | 92-52-4 | 1,1'-Biphenyl | MS | REC | 65 | % | 40-117 |
| OP458-MS* | 367-12-4 | 2-Fluorophenol | MS | SURR | 64 | % | 35-115 |
| OP458-MS* | 4165-62-2 | Phenol-d5 | MS | SURR | 74 | % | 33-122 |
| OP458-MS* | 118-79-6 | 2,4,6-Tribromophenol | MS | SURR | 58 | % | 39-132 |
| OP458-MS* | 4165-60-0 | Nitrobenzene-d5 | MS | SURR | 68 | % | 37-122 |
| OP458-MS* | 321-60-8 | 2-Fluorobiphenyl | MS | SURR | 63 | % | 44-115 |
| OP458-MS* | 1718-51-0 | Terphenyl-d14 | MS | SURR | 68 | % | 54-127 |
| OP458-MSD* | 92-52-4 | 1,1'-Biphenyl | MSD | REC | 70 | % | 40-117 |
| OP458-MSD* | 92-52-4 | 1,1'-Biphenyl | MSD | RPD | 5 | % | 20 |
| OP458-MSD* | 367-12-4 | 2-Fluorophenol | MSD | SURR | 66 | % | 35-115 |
| OP458-MSD* | 4165-62-2 | Phenol-d5 | MSD | SURR | 77 | % | 33-122 |
| OP458-MSD* | 118-79-6 | 2,4,6-Tribromophenol | MSD | SURR | 65 | % | 39-132 |
| OP458-MSD* | 4165-60-0 | Nitrobenzene-d5 | MSD | SURR | 70 | % | 37-122 |
| OP458-MSD* | 321-60-8 | 2-Fluorobiphenyl | MSD | SURR | 67 | % | 44-115 |
| OP458-MSD* | 1718-51-0 | Terphenyl-d14 | MSD | SURR | 73 | % | 54-127 |
| OP458-MB | 367-12-4 | 2-Fluorophenol | MB | SURR | 87 | % | 35-115 |
| OP458-MB | 367-12-4 | 2-Fluorophenol | MB | SURR | 84 | % | 35-115 |
| OP458-MB | 4165-62-2 | Phenol-d5 | MB | SURR | 94 | % | 33-122 |
| OP458-MB | 4165-62-2 | Phenol-d5 | MB | SURR | 99 | % | 33-122 |
| OP458-MB | 118-79-6 | 2,4,6-Tribromophenol | MB | SURR | 64 | % | 39-132 |
| OP458-MB | 118-79-6 | 2,4,6-Tribromophenol | MB | SURR | 67 | % | 39-132 |
| OP458-MB | 4165-60-0 | Nitrobenzene-d5 | MB | SURR | 84 | % | 37-122 |
| OP458-MB | 4165-60-0 | Nitrobenzene-d5 | MB | SURR | 78 | % | 37-122 |
| OP458-MB | 321-60-8 | 2-Fluorobiphenyl | MB | SURR | 78 | % | 44-115 |
| OP458-MB | 321-60-8 | 2-Fluorobiphenyl | MB | SURR | 79 | % | 44-115 |
| OP458-MB | 1718-51-0 | Terphenyl-d14 | MB | SURR | 87 | % | 54-127 |
| OP458-MB | 1718-51-0 | Terphenyl-d14 | MB | SURR | 88 | % | 54-127 |
| FC11168-1A | 367-12-4 | 2-Fluorophenol | SAMP | SURR | 72 | % | 35-115 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| FC11168-1A | 4165-62-2 | Phenol-d5 | SAMP | SURR | 79 | % | 33-122 |
| FC11168-1A | 118-79-6 | 2,4,6-Tribromophenol | SAMP | SURR | 55 | % | 39-132 |
| FC11168-1A | 4165-60-0 | Nitrobenzene-d5 | SAMP | SURR | 68 | % | 37-122 |
| FC11168-1A | 321-60-8 | 2-Fluorobiphenyl | SAMP | SURR | 69 | % | 44-115 |
| FC11168-1A | 1718-51-0 | Terphenyl-d14 | SAMP | SURR | 82 | % | 54-127 |
| FC11168-2A | 367-12-4 | 2-Fluorophenol | SAMP | SURR | 67 | % | 35-115 |
| FC11168-2A | 4165-62-2 | Phenol-d5 | SAMP | SURR | 75 | % | 33-122 |
| FC11168-2A | 118-79-6 | 2,4,6-Tribromophenol | SAMP | SURR | 57 | % | 39-132 |
| FC11168-2A | 4165-60-0 | Nitrobenzene-d5 | SAMP | SURR | 64 | % | 37-122 |
| FC11168-2A | 321-60-8 | 2-Fluorobiphenyl | SAMP | SURR | 63 | % | 44-115 |
| FC11168-2A | 1718-51-0 | Terphenyl-d14 | SAMP | SURR | 74 | % | 54-127 |
| FC11168-11A | 367-12-4 | 2-Fluorophenol | SAMP | SURR | 77 | % | 35-115 |
| FC11168-11A | 4165-62-2 | Phenol-d5 | SAMP | SURR | 87 | % | 33-122 |
| FC11168-11A | 118-79-6 | 2,4,6-Tribromophenol | SAMP | SURR | 64 | % | 39-132 |
| FC11168-11A | 4165-60-0 | Nitrobenzene-d5 | SAMP | SURR | 76 | % | 37-122 |
| FC11168-11A | 321-60-8 | 2-Fluorobiphenyl | SAMP | SURR | 71 | % | 44-115 |
| FC11168-11A | 1718-51-0 | Terphenyl-d14 | SAMP | SURR | 83 | % | 54-127 |
| OP185 | SW846 8081B | | | | | | |
| OP185-BS | 309-00-2 | Aldrin | BSP | REC | 89 | % | 45-136 |
| OP185-BS | 319-84-6 | alpha-BHC | BSP | REC | 97 | % | 45-137 |
| OP185-BS | 319-85-7 | beta-BHC | BSP | REC | 103 | % | 50-136 |
| OP185-BS | 319-86-8 | delta-BHC | BSP | REC | 95 | % | 47-139 |
| OP185-BS | 58-89-9 | gamma-BHC (Lindane) | BSP | REC | 100 | % | 49-135 |
| OP185-BS | 5103-71-9 | alpha-Chlordane | BSP | REC | 93 | % | 54-133 |
| OP185-BS | 5103-74-2 | gamma-Chlordane | BSP | REC | 95 | % | 53-135 |
| OP185-BS | 60-57-1 | Dieldrin | BSP | REC | 85 | % | 56-136 |
| OP185-BS | 72-54-8 | 4,4'-DDD | BSP | REC | 90 | % | 56-139 |
| OP185-BS | 72-55-9 | 4,4'-DDE | BSP | REC | 87 | % | 56-134 |
| OP185-BS | 50-29-3 | 4,4'-DDT | BSP | REC | 101 | % | 50-141 |
| OP185-BS | 72-20-8 | Endrin | BSP | REC | 86 | % | 57-140 |
| OP185-BS | 1031-07-8 | Endosulfan sulfate | BSP | REC | 86 | % | 55-136 |
| OP185-BS | 7421-93-4 | Endrin aldehyde | BSP | REC | 69 | % | 35-137 |
| OP185-BS | 53494-70-5 | Endrin ketone | BSP | REC | 93 | % | 55-136 |
| OP185-BS | 959-98-8 | Endosulfan-I | BSP | REC | 92 | % | 53-132 |
| OP185-BS | 33213-65-9 | Endosulfan-II | BSP | REC | 83 | % | 53-134 |
| OP185-BS | 76-44-8 | Heptachlor | BSP | REC | 93 | % | 47-136 |
| OP185-BS | 1024-57-3 | Heptachlor epoxide | BSP | REC | 85 | % | 52-136 |
| OP185-BS | 72-43-5 | Methoxychlor | BSP | REC | 109 | % | 52-143 |
| OP185-BS | 877-09-8 | Tetrachloro-m-xylene (sig#1) | BSP | SURR | 96 | % | 42-129 |
| OP185-BS2 | 8001-35-2 | Toxaphene | BSP | REC | 134 | % | 33-141 |
| OP185-BS2 | 877-09-8 | Tetrachloro-m-xylene (sig#1) | BSP | SURR | 87 | % | 42-129 |
| OP185-MS | 309-00-2 | Aldrin | MS | REC | 75 | % | 45-136 |
| OP185-MS | 319-84-6 | alpha-BHC | MS | REC | 79 | % | 45-137 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits



**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| OP185-MS | 319-85-7 | beta-BHC | MS | REC | 83 | % | 50-136 |
| OP185-MS | 319-86-8 | delta-BHC | MS | REC | 81 | % | 47-139 |
| OP185-MS | 58-89-9 | gamma-BHC (Lindane) | MS | REC | 81 | % | 49-135 |
| OP185-MS | 5103-71-9 | alpha-Chlordane | MS | REC | 76 | % | 54-133 |
| OP185-MS | 5103-74-2 | gamma-Chlordane | MS | REC | 78 | % | 53-135 |
| OP185-MS | 60-57-1 | Dieldrin | MS | REC | 70 | % | 56-136 |
| OP185-MS | 72-54-8 | 4,4'-DDD | MS | REC | 74 | % | 56-139 |
| OP185-MS | 72-55-9 | 4,4'-DDE | MS | REC | 75 | % | 56-134 |
| OP185-MS | 50-29-3 | 4,4'-DDT | MS | REC | 82 | % | 50-141 |
| OP185-MS | 72-20-8 | Endrin | MS | REC | 69 | % | 57-140 |
| OP185-MS | 1031-07-8 | Endosulfan sulfate | MS | REC | 71 | % | 55-136 |
| OP185-MS | 7421-93-4 | Endrin aldehyde | MS | REC | 62 | % | 35-137 |
| OP185-MS | 53494-70-5 | Endrin ketone | MS | REC | 76 | % | 55-136 |
| OP185-MS | 959-98-8 | Endosulfan-I | MS | REC | 75 | % | 53-132 |
| OP185-MS | 33213-65-9 | Endosulfan-II | MS | REC | 70 | % | 53-134 |
| OP185-MS | 76-44-8 | Heptachlor | MS | REC | 71 | % | 47-136 |
| OP185-MS | 1024-57-3 | Heptachlor epoxide | MS | REC | 71 | % | 52-136 |
| OP185-MS | 72-43-5 | Methoxychlor | MS | REC | 82 | % | 52-143 |
| OP185-MS | 877-09-8 | Tetrachloro-m-xylene (sig#1) | MS | SURR | 86 | % | 42-129 |
| OP185-MSD | 309-00-2 | Aldrin | MSD | REC | 73 | % | 45-136 |
| OP185-MSD | 309-00-2 | Aldrin | MSD | RPD | 3 | % | 30 |
| OP185-MSD | 319-84-6 | alpha-BHC | MSD | REC | 78 | % | 45-137 |
| OP185-MSD | 319-84-6 | alpha-BHC | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 319-85-7 | beta-BHC | MSD | REC | 84 | % | 50-136 |
| OP185-MSD | 319-85-7 | beta-BHC | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 319-86-8 | delta-BHC | MSD | REC | 90 | % | 47-139 |
| OP185-MSD | 319-86-8 | delta-BHC | MSD | RPD | 11 | % | 30 |
| OP185-MSD | 58-89-9 | gamma-BHC (Lindane) | MSD | REC | 78 | % | 49-135 |
| OP185-MSD | 58-89-9 | gamma-BHC (Lindane) | MSD | RPD | 3 | % | 30 |
| OP185-MSD | 5103-71-9 | alpha-Chlordane | MSD | REC | 71 | % | 54-133 |
| OP185-MSD | 5103-71-9 | alpha-Chlordane | MSD | RPD | 7 | % | 30 |
| OP185-MSD | 5103-74-2 | gamma-Chlordane | MSD | REC | 74 | % | 53-135 |
| OP185-MSD | 5103-74-2 | gamma-Chlordane | MSD | RPD | 6 | % | 30 |
| OP185-MSD | 60-57-1 | Dieldrin | MSD | REC | 70 | % | 56-136 |
| OP185-MSD | 60-57-1 | Dieldrin | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 72-54-8 | 4,4'-DDD | MSD | REC | 72 | % | 56-139 |
| OP185-MSD | 72-54-8 | 4,4'-DDD | MSD | RPD | 3 | % | 30 |
| OP185-MSD | 72-55-9 | 4,4'-DDE | MSD | REC | 74 | % | 56-134 |
| OP185-MSD | 72-55-9 | 4,4'-DDE | MSD | RPD | 2 | % | 30 |
| OP185-MSD | 50-29-3 | 4,4'-DDT | MSD | REC | 80 | % | 50-141 |
| OP185-MSD | 50-29-3 | 4,4'-DDT | MSD | RPD | 2 | % | 30 |
| OP185-MSD | 72-20-8 | Endrin | MSD | REC | 66 | % | 57-140 |
| OP185-MSD | 72-20-8 | Endrin | MSD | RPD | 3 | % | 30 |
| OP185-MSD | 1031-07-8 | Endosulfan sulfate | MSD | REC | 75 | % | 55-136 |
| OP185-MSD | 1031-07-8 | Endosulfan sulfate | MSD | RPD | 5 | % | 30 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| OP185-MSD | 7421-93-4 | Endrin aldehyde | MSD | REC | 70 | % | 35-137 |
| OP185-MSD | 7421-93-4 | Endrin aldehyde | MSD | RPD | 12 | % | 30 |
| OP185-MSD | 53494-70-5 | Endrin ketone | MSD | REC | 77 | % | 55-136 |
| OP185-MSD | 53494-70-5 | Endrin ketone | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 959-98-8 | Endosulfan-I | MSD | REC | 72 | % | 53-132 |
| OP185-MSD | 959-98-8 | Endosulfan-I | MSD | RPD | 4 | % | 30 |
| OP185-MSD | 33213-65-9 | Endosulfan-II | MSD | REC | 71 | % | 53-134 |
| OP185-MSD | 33213-65-9 | Endosulfan-II | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 76-44-8 | Heptachlor | MSD | REC | 71 | % | 47-136 |
| OP185-MSD | 76-44-8 | Heptachlor | MSD | RPD | 0 | % | 30 |
| OP185-MSD | 1024-57-3 | Heptachlor epoxide | MSD | REC | 70 | % | 52-136 |
| OP185-MSD | 1024-57-3 | Heptachlor epoxide | MSD | RPD | 1 | % | 30 |
| OP185-MSD | 72-43-5 | Methoxychlor | MSD | REC | 82 | % | 52-143 |
| OP185-MSD | 72-43-5 | Methoxychlor | MSD | RPD | 0 | % | 30 |
| OP185-MSD | 877-09-8 | Tetrachloro-m-xylene (sig#1) | MSD | SURR | 81 | % | 42-129 |
| OP185-MB | 877-09-8 | Tetrachloro-m-xylene (sig#1) | MB | SURR | 90 | % | 42-129 |
| FC11168-1 | 877-09-8 | Tetrachloro-m-xylene (sig#1) | SAMP | SURR | 88 | % | 42-129 |
| FC11168-2 | 877-09-8 | Tetrachloro-m-xylene (sig#1) | SAMP | SURR | 82 | % | 42-129 |
| FC11168-11 | 877-09-8 | Tetrachloro-m-xylene (sig#1) | SAMP | SURR | 81 | % | 42-129 |
| MP43153 | SW846 6020B | | | | | | |
| MP43153-B1 | 7440-38-2 | Arsenic | BSP | REC | 98.4 | % | 82-118 |
| MP43153-B1 | 7440-43-9 | Cadmium | BSP | REC | 103.2 | % | 84-116 |
| MP43153-B1 | 7440-47-3 | Chromium | BSP | REC | 100 | % | 83-119 |
| MP43153-B1 | 7440-50-8 | Copper | BSP | REC | 100.8 | % | 84-119 |
| MP43153-B1 | 7439-92-1 | Lead | BSP | REC | 99.6 | % | 84-118 |
| MP43153-B1 | 7440-02-0 | Nickel | BSP | REC | 98.8 | % | 84-119 |
| MP43153-B1 | 7782-49-2 | Selenium | BSP | REC | 92.8 | % | 80-119 |
| MP43153-B1 | 7440-22-4 | Silver | BSP | REC | 94.4 | % | 83-118 |
| MP43153-B1 | 7440-66-6 | Zinc | BSP | REC | 97.6 | % | 82-119 |
| MP43153-S1* | 7440-38-2 | Arsenic | MS | REC | 90.8 | % | 82-118 |
| MP43153-S1* | 7440-43-9 | Cadmium | MS | REC | 101.1 | % | 84-116 |
| MP43153-S1* | 7440-47-3 | Chromium | MS | REC | 110.9 | % | 83-119 |
| MP43153-S1* | 7440-50-8 | Copper | MS | REC | 238.3 [a] | % | 84-119 |
| MP43153-S1* | 7439-92-1 | Lead | MS | REC | 99 | % | 84-118 |
| MP43153-S1* | 7440-02-0 | Nickel | MS | REC | 113.8 | % | 84-119 |
| MP43153-S1* | 7782-49-2 | Selenium | MS | REC | 88.7 | % | 80-119 |
| MP43153-S1* | 7440-22-4 | Silver | MS | REC | 89.6 | % | 83-118 |
| MP43153-S1* | 7440-66-6 | Zinc | MS | REC | 147.9 [a] | % | 82-119 |
| MP43153-S2* | 7440-38-2 | Arsenic | MSD | REC | 94.8 | % | 82-118 |
| MP43153-S2* | 7440-38-2 | Arsenic | MSD | RPD | 13.1 | % | 20 |
| MP43153-S2* | 7440-43-9 | Cadmium | MSD | REC | 97 | % | 84-116 |
| MP43153-S2* | 7440-43-9 | Cadmium | MSD | RPD | 10.5 | % | 20 |
| MP43153-S2* | 7440-47-3 | Chromium | MSD | REC | 121.5 [b] | % | 83-119 |

* Sample used for QC is not from job FC11168

# QC Evaluation: DOD QSM5.x Limits

**Job Number:** FC11168
**Account:** Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor
**Collected:** 11/09/23

| QC Sample ID | CAS# | Analyte | Sample Type | Result Type | Result | Units | Limits |
|---|---|---|---|---|---|---|---|
| MP43153-S2* | 7440-47-3 | Chromium | MSD | RPD | 2.4 | % | 20 |
| MP43153-S2* | 7440-50-8 | Copper | MSD | REC | 279 [a] | % | 84-119 |
| MP43153-S2* | 7440-50-8 | Copper | MSD | RPD | 3.5 | % | 20 |
| MP43153-S2* | 7439-92-1 | Lead | MSD | REC | 109 | % | 84-118 |
| MP43153-S2* | 7439-92-1 | Lead | MSD | RPD | 2.4 | % | 20 |
| MP43153-S2* | 7440-02-0 | Nickel | MSD | REC | 129.6 [b] | % | 84-119 |
| MP43153-S2* | 7440-02-0 | Nickel | MSD | RPD | 3.7 | % | 20 |
| MP43153-S2* | 7782-49-2 | Selenium | MSD | REC | 88.8 | % | 80-119 |
| MP43153-S2* | 7782-49-2 | Selenium | MSD | RPD | 10.8 | % | 20 |
| MP43153-S2* | 7440-22-4 | Silver | MSD | REC | 90.1 | % | 83-118 |
| MP43153-S2* | 7440-22-4 | Silver | MSD | RPD | 0 | % | 20 |
| MP43153-S2* | 7440-66-6 | Zinc | MSD | REC | 180.2 [a] | % | 82-119 |
| MP43153-S2* | 7440-66-6 | Zinc | MSD | RPD | 2.9 | % | 20 |
| MP43153-D1* | 7440-38-2 | Arsenic | DUP | RPD | 14.4 | % | 20 |
| MP43153-D1* | 7440-43-9 | Cadmium | DUP | RPD | 7.1 | % | 20 |
| MP43153-D1* | 7440-47-3 | Chromium | DUP | RPD | 5.2 | % | 20 |
| MP43153-D1* | 7440-50-8 | Copper | DUP | RPD | 30 [c] | % | 20 |
| MP43153-D1* | 7439-92-1 | Lead | DUP | RPD | 20.5 [c] | % | 20 |
| MP43153-D1* | 7440-02-0 | Nickel | DUP | RPD | 3.8 | % | 20 |
| MP43153-D1* | 7782-49-2 | Selenium | DUP | RPD | 7.4 | % | 20 |
| MP43153-D1* | 7440-22-4 | Silver | DUP | RPD | 24 [c] | % | 20 |
| MP43153-D1* | 7440-66-6 | Zinc | DUP | RPD | 10.3 | % | 20 |
| MP43202 | SW846 7471B | | | | | | |
| MP43202-B1 | 7439-97-6 | Mercury | BSP | REC | 96 | % | 80-124 |
| MP43202-S1* | 7439-97-6 | Mercury | MS | REC | 86.7 | % | 80-124 |
| MP43202-S2* | 7439-97-6 | Mercury | MSD | REC | 53.3 [b] | % | 80-124 |
| MP43202-S2* | 7439-97-6 | Mercury | MSD | RPD | 14.1 | % | 20 |
| MP43202-D1* | 7439-97-6 | Mercury | DUP | RPD | 8.3 | % | 20 |
| MP43202-D2* | 7439-97-6 | Mercury | DUP | RPD | 8.3 | % | 20 |
| MP43203 | SW846 7471B | | | | | | |
| MP43203-B1 | 7439-97-6 | Mercury | BSP | REC | 96 | % | 80-124 |
| MP43203-S1 | 7439-97-6 | Mercury | MS | REC | 98.7 | % | 80-124 |
| MP43203-S2 | 7439-97-6 | Mercury | MSD | REC | 97.7 | % | 80-124 |
| MP43203-S2 | 7439-97-6 | Mercury | MSD | RPD | 1.4 | % | 20 |
| MP43203-D1 | 7439-97-6 | Mercury | DUP | RPD | 12.9 | % | 20 |

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(c) High RPD due to possible sample non-homogeneity.

* Sample used for QC is not from job FC11168

# MS Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP458-MB | X091616.D | 1 | 12/06/23 | KA | 12/06/23 | OP458 | SX3628 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E

FC11168-1A, FC11168-2A, FC11168-11A

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | ND | 170 | 17 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 87% | 40-102% |
| 4165-62-2 | Phenol-d5 | 99% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 67% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 84% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 79% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 88% | 45-119% |

# Method Blank Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP458-MB | X091644.D | 1 | 12/07/23 | KA | 12/06/23 | OP458 | SX3629 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E

FC11168-1A, FC11168-2A, FC11168-11A

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | ND | 170 | 17 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 84% | 40-102% |
| 4165-62-2 | Phenol-d5 | 94% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 64% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 78% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 78% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 87% | 45-119% |

# Method Blank Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP182-MB | 7G28994.D | 1 | 11/30/23 | MF | 11/19/23 | OP182 | S7G1142 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E BY SIM

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 67 | 27 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 67 | 27 | ug/kg | |
| 120-12-7 | Anthracene | ND | 67 | 17 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 13 | 3.3 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 13 | 3.3 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 13 | 3.3 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 13 | 3.3 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 13 | 3.3 | ug/kg | |
| 218-01-9 | Chrysene | ND | 13 | 3.3 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 13 | 3.3 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 67 | 17 | ug/kg | |
| 86-73-7 | Fluorene | ND | 67 | 27 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 13 | 3.3 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 67 | 27 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 67 | 27 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 67 | 27 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 67 | 17 | ug/kg | |
| 129-00-0 | Pyrene | ND | 67 | 17 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 107% | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 122% | 50-150% |

# Blank Spike Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP458-BS | X091615.D | 1 | 12/06/23 | KA | 12/06/23 | OP458 | SX3628 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E

FC11168-1A, FC11168-2A, FC11168-11A

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 1670 | 1250 | 75 | 53-106 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 73% | 40-102% |
| 4165-62-2 | Phenol-d5 | 83% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 70% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 78% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 73% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 77% | 45-119% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP458-BS | X091643.D | 1 | 12/07/23 | KA | 12/06/23 | OP458 | SX3629 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E

FC11168-1A, FC11168-2A, FC11168-11A

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 1670 | 1180 | 71 | 53-106 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 69% | 40-102% |
| 4165-62-2 | Phenol-d5 | 78% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 68% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 71% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 70% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 75% | 45-119% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP182-BS | 7G28995.D | 1 | 11/30/23 | MF | 11/19/23 | OP182 | S7G1142 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E BY SIM

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 667 | 543 | 81 | 53-100 |
| 208-96-8 | Acenaphthylene | 667 | 483 | 72 | 51-100 |
| 120-12-7 | Anthracene | 333 | 332 | 100 | 60-102 |
| 56-55-3 | Benzo(a)anthracene | 333 | 317 | 95 | 60-106 |
| 50-32-8 | Benzo(a)pyrene | 333 | 319 | 96 | 58-105 |
| 205-99-2 | Benzo(b)fluoranthene | 333 | 300 | 90 | 59-112 |
| 191-24-2 | Benzo(g,h,i)perylene | 333 | 286 | 86 | 56-109 |
| 207-08-9 | Benzo(k)fluoranthene | 333 | 287 | 86 | 58-109 |
| 218-01-9 | Chrysene | 333 | 285 | 85 | 62-104 |
| 53-70-3 | Dibenzo(a,h)anthracene | 333 | 282 | 85 | 55-110 |
| 206-44-0 | Fluoranthene | 667 | 586 | 88 | 59-109 |
| 86-73-7 | Fluorene | 667 | 580 | 87 | 56-104 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 333 | 299 | 90 | 54-110 |
| 90-12-0 | 1-Methylnaphthalene | 667 | 605 | 91 | 50-101 |
| 91-57-6 | 2-Methylnaphthalene | 667 | 537 | 81 | 49-100 |
| 91-20-3 | Naphthalene | 667 | 534 | 80 | 49-101 |
| 85-01-8 | Phenanthrene | 667 | 576 | 86 | 57-104 |
| 129-00-0 | Pyrene | 667 | 572 | 86 | 58-106 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 113% | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 123% | 50-150% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP458-MS | X091632.D | 1 | 12/06/23 | KA | 12/06/23 | OP458 | SX3628 |
| OP458-MSD | X091633.D | 1 | 12/07/23 | KA | 12/06/23 | OP458 | SX3628 |
| FC11659-1 | X091648.D | 1 | 12/07/23 | KA | 12/06/23 | OP458 | SX3629 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E

FC11168-1A, FC11168-2A, FC11168-11A

| CAS No. | Compound | FC11659-1 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 92-52-4 | 1,1'-Biphenyl | 190 | U | 1880 | 1230 | 65 | 1840 | 1290 | 70 | 5 | 53-106/24 |

| CAS No. | Surrogate Recoveries | MS | MSD | FC11659-1 | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 64% | 66% | 73% | 40-102% |
| 4165-62-2 | Phenol-d5 | 74% | 77% | 93% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 58% | 65% | 56% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 68% | 70% | 75% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 63% | 67% | 71% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 68% | 73% | 74% | 45-119% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP182-MS | 7G29152.D | 1 | 12/04/23 | MF | 11/19/23 | OP182 | S7G1145 |
| OP182-MSD | 7G29153.D | 1 | 12/04/23 | MF | 11/19/23 | OP182 | S7G1145 |
| FC11135-10 | 7G29151.D | 1 | 12/04/23 | MF | 11/19/23 | OP182 | S7G1145 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270E BY SIM

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | FC11135-10 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 69 | U | 684 | 539 | 79 | 684 | 554 | 81 | 3 | 53-100/28 |
| 208-96-8 | Acenaphthylene | 69 | U | 684 | 509 | 74 | 684 | 521 | 76 | 2 | 51-100/25 |
| 120-12-7 | Anthracene | 69 | U | 342 | 339 | 99 | 342 | 341 | 100 | 1 | 60-102/29 |
| 56-55-3 | Benzo(a)anthracene | 14 | U | 342 | 366 | 107* | 342 | 367 | 107* | 0 | 60-106/30 |
| 50-32-8 | Benzo(a)pyrene | 14 | U | 342 | 322 | 94 | 342 | 325 | 95 | 1 | 58-105/30 |
| 205-99-2 | Benzo(b)fluoranthene | 14 | U | 342 | 333 | 97 | 342 | 328 | 96 | 2 | 59-112/33 |
| 191-24-2 | Benzo(g,h,i)perylene | 14 | U | 342 | 256 | 75 | 342 | 270 | 79 | 5 | 56-109/31 |
| 207-08-9 | Benzo(k)fluoranthene | 14 | U | 342 | 294 | 86 | 342 | 289 | 84 | 2 | 58-109/33 |
| 218-01-9 | Chrysene | 14 | U | 342 | 276 | 81 | 342 | 281 | 82 | 2 | 62-104/30 |
| 53-70-3 | Dibenzo(a,h)anthracene | 14 | U | 342 | 267 | 78 | 342 | 283 | 83 | 6 | 55-110/31 |
| 206-44-0 | Fluoranthene | 69 | U | 684 | 568 | 83 | 684 | 564 | 82 | 1 | 59-109/29 |
| 86-73-7 | Fluorene | 69 | U | 684 | 571 | 83 | 684 | 602 | 88 | 5 | 56-104/27 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 14 | U | 342 | 303 | 89 | 342 | 319 | 93 | 5 | 54-110/32 |
| 90-12-0 | 1-Methylnaphthalene | 69 | U | 684 | 596 | 87 | 684 | 610 | 89 | 2 | 50-101/30 |
| 91-57-6 | 2-Methylnaphthalene | 69 | U | 684 | 550 | 80 | 684 | 556 | 81 | 1 | 49-100/26 |
| 91-20-3 | Naphthalene | 69 | U | 684 | 539 | 79 | 684 | 540 | 79 | 0 | 49-101/28 |
| 85-01-8 | Phenanthrene | 69 | U | 684 | 618 | 90 | 684 | 600 | 88 | 3 | 57-104/27 |
| 129-00-0 | Pyrene | 69 | U | 684 | 649 | 95 | 684 | 619 | 90 | 5 | 58-106/29 |

| CAS No. | Surrogate Recoveries | MS | MSD | FC11135-10 | Limits |
|---|---|---|---|---|---|
| 7297-45-2 | 2-Methylnaphthalene-d10 | 107% | 108% | 106% | 50-150% |
| 93951-69-0 | Fluoranthene-d10 | 112% | 110% | 118% | 50-150% |

* = Outside of Control Limits.

# GC/LC Semi-volatiles

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP185-MB | ST171398.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 309-00-2 | Aldrin | ND | 1.7 | 0.53 | ug/kg | |
| 319-84-6 | alpha-BHC | ND | 1.7 | 0.53 | ug/kg | |
| 319-85-7 | beta-BHC | ND | 1.7 | 0.49 | ug/kg | |
| 319-86-8 | delta-BHC | ND | 1.7 | 0.47 | ug/kg | |
| 58-89-9 | gamma-BHC (Lindane) | ND | 1.7 | 0.50 | ug/kg | |
| 5103-71-9 | alpha-Chlordane | ND | 1.7 | 0.52 | ug/kg | |
| 5103-74-2 | gamma-Chlordane | ND | 1.7 | 0.48 | ug/kg | |
| 60-57-1 | Dieldrin | ND | 1.7 | 0.47 | ug/kg | |
| 72-54-8 | 4,4'-DDD | ND | 3.3 | 0.46 | ug/kg | |
| 72-55-9 | 4,4'-DDE | ND | 3.3 | 0.61 | ug/kg | |
| 50-29-3 | 4,4'-DDT | ND | 3.3 | 0.51 | ug/kg | |
| 72-20-8 | Endrin | ND | 3.3 | 0.84 | ug/kg | |
| 1031-07-8 | Endosulfan sulfate | ND | 3.3 | 0.44 | ug/kg | |
| 7421-93-4 | Endrin aldehyde | ND | 3.3 | 0.39 | ug/kg | |
| 53494-70-5 | Endrin ketone | ND | 3.3 | 0.52 | ug/kg | |
| 959-98-8 | Endosulfan-I | ND | 1.7 | 0.38 | ug/kg | |
| 33213-65-9 | Endosulfan-II | ND | 1.7 | 0.39 | ug/kg | |
| 76-44-8 | Heptachlor | ND | 1.7 | 0.49 | ug/kg | |
| 1024-57-3 | Heptachlor epoxide | ND | 1.7 | 0.49 | ug/kg | |
| 72-43-5 | Methoxychlor | ND | 3.3 | 0.67 | ug/kg | |
| 8001-35-2 | Toxaphene | ND | 83 | 25 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 90% | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 95% | 50-133% |

# Blank Spike Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP185-BS | ST171396.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 309-00-2 | Aldrin | 16.7 | 14.9 | 89 | 57-120 |
| 319-84-6 | alpha-BHC | 16.7 | 16.1 | 97 | 60-117 |
| 319-85-7 | beta-BHC | 16.7 | 17.1 | 103 | 57-125 |
| 319-86-8 | delta-BHC | 16.7 | 15.9 | 95 | 42-126 |
| 58-89-9 | gamma-BHC (Lindane) | 16.7 | 16.6 | 100 | 60-123 |
| 5103-71-9 | alpha-Chlordane | 16.7 | 15.5 | 93 | 61-122 |
| 5103-74-2 | gamma-Chlordane | 16.7 | 15.8 | 95 | 63-122 |
| 60-57-1 | Dieldrin | 16.7 | 14.1 | 85 | 63-125 |
| 72-54-8 | 4,4'-DDD | 16.7 | 15.0 | 90 | 55-135 |
| 72-55-9 | 4,4'-DDE | 16.7 | 14.5 | 87 | 61-129 |
| 50-29-3 | 4,4'-DDT | 16.7 | 16.9 | 101 | 60-136 |
| 72-20-8 | Endrin | 16.7 | 14.4 | 86 | 67-138 |
| 1031-07-8 | Endosulfan sulfate | 16.7 | 14.4 | 86 | 59-119 |
| 7421-93-4 | Endrin aldehyde | 16.7 | 11.5 | 69 | 37-110 |
| 53494-70-5 | Endrin ketone | 16.7 | 15.5 | 93 | 60-128 |
| 959-98-8 | Endosulfan-I | 16.7 | 15.3 | 92 | 62-122 |
| 33213-65-9 | Endosulfan-II | 16.7 | 13.8 | 83 | 62-122 |
| 76-44-8 | Heptachlor | 16.7 | 15.5 | 93 | 58-123 |
| 1024-57-3 | Heptachlor epoxide | 16.7 | 14.2 | 85 | 60-122 |
| 72-43-5 | Methoxychlor | 16.7 | 18.1 | 109 | 57-133 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 96% | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 101% | 50-133% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP185-BS2 | ST171397.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 8001-35-2 | Toxaphene | 167 | 223 | 134 | 48-155 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 87% | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 92% | 50-133% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FC11168
**Account:** GEOSORP Geosyntec Consultants - Portland, OR
**Project:** Oakland Harbor

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP185-MS | ST171402.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |
| OP185-MSD | ST171403.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |
| FC11168-1 | ST171399.D | 1 | 11/20/23 | WH | 11/19/23 | OP185 | GST4184 |

**The QC reported here applies to the following samples:** **Method:** SW846 8081B

FC11168-1, FC11168-2, FC11168-11

| CAS No. | Compound | FC11168-1 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 309-00-2 | Aldrin | 2.5 | U | 25.4 | 19.1 | 75 | 25.4 | 18.6 | 73 | 3 | 57-120/28 |
| 319-84-6 | alpha-BHC | 2.5 | U | 25.4 | 20.2 | 79 | 25.4 | 19.9 | 78 | 1 | 60-117/24 |
| 319-85-7 | beta-BHC | 2.5 | U | 25.4 | 21.2 | 83 | 25.4 | 21.4 | 84 | 1 | 57-125/26 |
| 319-86-8 | delta-BHC | 2.5 | U | 25.4 | 20.7 | 81 | 25.4 | 23.0 | 90 | 11 | 42-126/24 |
| 58-89-9 | gamma-BHC (Lindane) | 2.5 | U | 25.4 | 20.5 | 81 | 25.4 | 19.9 | 78 | 3 | 60-123/29 |
| 5103-71-9 | alpha-Chlordane | 2.5 | U | 25.4 | 19.4 | 76 | 25.4 | 18.1 | 71 | 7 | 61-122/26 |
| 5103-74-2 | gamma-Chlordane | 2.5 | U | 25.4 | 19.9 | 78 | 25.4 | 18.8 | 74 | 6 | 63-122/28 |
| 60-57-1 | Dieldrin | 2.5 | U | 25.4 | 17.9 | 70 | 25.4 | 17.8 | 70 | 1 | 63-125/29 |
| 72-54-8 | 4,4'-DDD | 5.0 | U | 25.4 | 18.9 | 74 | 25.4 | 18.4 | 72 | 3 | 55-135/31 |
| 72-55-9 | 4,4'-DDE | 5.0 | U | 25.4 | 19.1 | 75 | 25.4 | 18.8 | 74 | 2 | 61-129/31 |
| 50-29-3 | 4,4'-DDT | 5.0 | U | 25.4 | 20.9 | 82 | 25.4 | 20.4 | 80 | 2 | 60-136/39 |
| 72-20-8 | Endrin | 5.0 | U | 25.4 | 17.5 | 69 | 25.4 | 16.9 | 66* | 3 | 67-138/28 |
| 1031-07-8 | Endosulfan sulfate | 5.0 | U | 25.4 | 18.1 | 71 | 25.4 | 19.1 | 75 | 5 | 59-119/28 |
| 7421-93-4 | Endrin aldehyde | 5.0 | U | 25.4 | 15.8 | 62 | 25.4 | 17.9 | 70 | 12 | 37-110/25 |
| 53494-70-5 | Endrin ketone | 5.0 | U | 25.4 | 19.4 | 76 | 25.4 | 19.6 | 77 | 1 | 60-128/24 |
| 959-98-8 | Endosulfan-I | 2.5 | U | 25.4 | 19.0 | 75 | 25.4 | 18.3 | 72 | 4 | 62-122/29 |
| 33213-65-9 | Endosulfan-II | 2.5 | U | 25.4 | 17.9 | 70 | 25.4 | 18.1 | 71 | 1 | 62-122/31 |
| 76-44-8 | Heptachlor | 2.5 | U | 25.4 | 18.1 | 71 | 25.4 | 18.1 | 71 | 0 | 58-123/30 |
| 1024-57-3 | Heptachlor epoxide | 2.5 | U | 25.4 | 18.1 | 71 | 25.4 | 17.9 | 70 | 1 | 60-122/33 |
| 72-43-5 | Methoxychlor | 5.0 | U | 25.4 | 20.9 | 82 | 25.4 | 20.8 | 82 | 0 | 57-133/31 |

| CAS No. | Surrogate Recoveries | MS | MSD | FC11168-1 | Limits |
|---|---|---|---|---|---|
| 877-09-8 | Tetrachloro-m-xylene | 86% | 81% | 88% | 50-122% |
| 2051-24-3 | Decachlorobiphenyl | 83% | 78% | 85% | 50-133% |

* = Outside of Control Limits.

# Metals Analysis

## QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: mg/kg

Prep Date: 11/15/23

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Aluminum | 25 | 1.1 | 6.3 | | |
| Antimony | 0.25 | .025 | .025 | | |
| Arsenic | 0.25 | .025 | .025 | 0.020 | <0.25 |
| Barium | 0.25 | .025 | .025 | | |
| Beryllium | 0.25 | .025 | .027 | | |
| Cadmium | 0.25 | .025 | .025 | 0.0021 | <0.25 |
| Calcium | 25 | 1.8 | 6.3 | | |
| Chromium | 0.25 | .025 | .025 | 0.039 | <0.25 |
| Cobalt | 0.25 | .025 | .025 | | |
| Copper | 1.3 | .025 | .13 | -0.0050 | <1.3 |
| Iron | 25 | 2 | 6.3 | | |
| Lead | 0.25 | .025 | .025 | 0.0032 | <0.25 |
| Magnesium | 25 | 1.3 | 6.3 | | |
| Manganese | 0.25 | .025 | .025 | | |
| Molybdenum | 0.25 | .025 | .025 | | |
| Nickel | 0.50 | .025 | .05 | 0.011 | <0.50 |
| Potassium | 25 | 1.6 | 6.3 | | |
| Selenium | 0.25 | .028 | .045 | -0.013 | <0.25 |
| Silver | 0.25 | .025 | .025 | 0.0020 | <0.25 |
| Sodium | 25 | 1.2 | 6.3 | | |
| Strontium | 0.25 | .025 | .025 | | |
| Thallium | 0.25 | .025 | .025 | | |
| Tin | 0.25 | .025 | .025 | | |
| Titanium | 0.25 | .076 | .076 | | |
| Vanadium | 0.25 | .025 | .025 | | |
| Zinc | 1.3 | .073 | .13 | 0.079 | <1.3 |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: mg/kg

| Prep Date: | | | 11/15/23 | | | | | 11/15/23 | |
|---|---|---|---|---|---|---|---|---|---|
| Metal | FC11232-1 Original | DUP | RPD | QC Limits | FC11232-1 Original | MS | Spikelot MPICPMS1 | % Rec | QC Limits |
| Aluminum | anr | | | | | | | | |
| Antimony | anr | | | | | | | | |
| Arsenic | 7.9 | 8.2 | 14.4 | 0-20 | 7.1 | 29.2 | 24.3 | 90.8 | 80-120 |
| Barium | anr | | | | | | | | |
| Beryllium | anr | | | | | | | | |
| Cadmium | 2.8 | 2.9 | 7.1 | 0-20 | 2.7 | 27.3 | 24.3 | 101.1 | 80-120 |
| Calcium | anr | | | | | | | | |
| Chromium | 28.9 | 27.8 | 5.2 | 0-20 | 28.9 | 53.4 | 24.3 | 110.9 | 80-120 |
| Cobalt | anr | | | | | | | | |
| Copper | 139 | 188 | 30.0*(a) | 0-20 | 139 | 197 | 24.3 | 238.3(b) | 80-120 |
| Iron | anr | | | | | | | | |
| Lead | 30.2 | 37.1 | 20.5*(a) | 0-20 | 30.2 | 54.3 | 24.3 | 99.0 | 80-120 |
| Magnesium | anr | | | | | | | | |
| Manganese | anr | | | | | | | | |
| Molybdenum | | | | | | | | | |
| Nickel | 44.0 | 36.6 | 3.8 | 0-20 | 44.0 | 65.7 | 24.3 | 113.8 | 80-120 |
| Potassium | anr | | | | | | | | |
| Selenium | 1.3 | 1.4 | 7.4 | 0-20 | 1.3 | 22.9 | 24.3 | 88.7 | 80-120 |
| Silver | 1.1 | 1.4 | 24.0*(a) | 0-20 | 1.1 | 12.0 | 12.2 | 89.6 | 80-120 |
| Sodium | anr | | | | | | | | |
| Strontium | | | | | | | | | |
| Thallium | anr | | | | | | | | |
| Tin | | | | | | | | | |
| Titanium | | | | | | | | | |
| Vanadium | anr | | | | | | | | |
| Zinc | 174 | 184 | 10.3 | 0-20 | 174 | 202 | 24.3 | 147.9(b) | 80-120 |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) High RPD due to possible sample non-homogeneity.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: mg/kg

Prep Date: 11/15/23

| Metal | FC11232-1 Original | MSD | Spikelot MPICPMS1 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Aluminum | anr | | | | | |
| Antimony | anr | | | | | |
| Arsenic | 7.1 | 29.2 | 23.3 | 94.8 | 13.1 | 20 |
| Barium | anr | | | | | |
| Beryllium | anr | | | | | |
| Cadmium | 2.7 | 25.3 | 23.3 | 97.0 | 10.5 | 20 |
| Calcium | anr | | | | | |
| Chromium | 28.9 | 54.7 | 23.3 | 121.5N(a | 2.4 | 20 |
| Cobalt | anr | | | | | |
| Copper | 139 | 204 | 23.3 | 279.0(b) | 3.5 | 20 |
| Iron | anr | | | | | |
| Lead | 30.2 | 55.6 | 23.3 | 109.0 | 2.4 | 20 |
| Magnesium | anr | | | | | |
| Manganese | anr | | | | | |
| Molybdenum | | | | | | |
| Nickel | 44.0 | 68.2 | 23.3 | 129.6N(a | 3.7 | 20 |
| Potassium | anr | | | | | |
| Selenium | 1.3 | 22.0 | 23.3 | 88.8 | 10.8 | 20 |
| Silver | 1.1 | 11.6 | 11.7 | 90.1 | 0.0 | 20 |
| Sodium | anr | | | | | |
| Strontium | | | | | | |
| Thallium | anr | | | | | |
| Tin | | | | | | |
| Titanium | | | | | | |
| Vanadium | anr | | | | | |
| Zinc | 174 | 208 | 23.3 | 180.2(b) | 2.9 | 20 |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: mg/kg

Prep Date: 11/15/23

| Metal | BSP Result | Spikelot MPICPMS1 | % Rec | QC Limits |
|---|---|---|---|---|
| Aluminum | anr | | | |
| Antimony | anr | | | |
| Arsenic | 24.6 | 25 | 98.4 | 80-120 |
| Barium | anr | | | |
| Beryllium | anr | | | |
| Cadmium | 25.8 | 25 | 103.2 | 80-120 |
| Calcium | anr | | | |
| Chromium | 25.0 | 25 | 100.0 | 80-120 |
| Cobalt | anr | | | |
| Copper | 25.2 | 25 | 100.8 | 80-120 |
| Iron | anr | | | |
| Lead | 24.9 | 25 | 99.6 | 80-120 |
| Magnesium | anr | | | |
| Manganese | anr | | | |
| Molybdenum | | | | |
| Nickel | 24.7 | 25 | 98.8 | 80-120 |
| Potassium | anr | | | |
| Selenium | 23.2 | 25 | 92.8 | 80-120 |
| Silver | 11.8 | 12.5 | 94.4 | 80-120 |
| Sodium | anr | | | |
| Strontium | | | | |
| Thallium | anr | | | |
| Tin | | | | |
| Titanium | | | | |
| Vanadium | anr | | | |
| Zinc | 24.4 | 25 | 97.6 | 80-120 |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: ug/l

Prep Date: 11/15/23

| Metal | FC11232-1 Original | SDL 5:25 | %DIF | QC Limits |
|---|---|---|---|---|
| Aluminum | anr | | | |
| Antimony | anr | | | |
| Arsenic | 148 | 162 | 9.3 | 0-10 |
| Barium | anr | | | |
| Beryllium | anr | | | |
| Cadmium | 56.3 | 57.9 | 2.9 | 0-10 |
| Calcium | anr | | | |
| Chromium | 604 | 599 | 8.4 | 0-10 |
| Cobalt | anr | | | |
| Copper | 2910 | 3390 | 16.4*(a) | 0-10 |
| Iron | anr | | | |
| Lead | 628 | 652 | 3.4 | 0-10 |
| Magnesium | anr | | | |
| Manganese | anr | | | |
| Molybdenum | | | | |
| Nickel | 794 | 903 | 13.6*(a) | 0-10 |
| Potassium | anr | | | |
| Selenium | 27.8 | 30.4 | 9.3 | 0-10 |
| Silver | 22.5 | 23.0 | 4.3 | 0-10 |
| Sodium | anr | | | |
| Strontium | | | | |
| Thallium | anr | | | |
| Tin | | | | |
| Titanium | | | | |
| Vanadium | anr | | | |
| Zinc | 3640 | 3670 | 5.9 | 0-10 |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43153
Matrix Type: SOLID

Methods: SW846 6020B
Units: ug/l

Prep Date: 11/15/23

| Metal | Sample ml | Final ml | FC11232-1 Raw | Corr.** | PS ug/l | Spike ml | Spike ug/ml | Spike ug/l | % Rec | QC Limits |
|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | | |
| Antimony | | | | | | | | | | |
| Arsenic | | | | | | | | | | |
| Barium | | | | | | | | | | |
| Beryllium | | | | | | | | | | |
| Cadmium | | | | | | | | | | |
| Calcium | | | | | | | | | | |
| Chromium | 9.8 | 10 | 552.298 | 541.252 | 617.796 | 0.2 | 0.5 | 10 | 765.4*(a | 80-120 |
| Cobalt | | | | | | | | | | |
| Copper | | | | | | | | | | |
| Iron | | | | | | | | | | |
| Lead | | | | | | | | | | |
| Magnesium | | | | | | | | | | |
| Manganese | | | | | | | | | | |
| Molybdenum | | | | | | | | | | |
| Nickel | 9.8 | 10 | 920.703 | 778.5326 | 926.92 | 0.2 | 0.5 | 10 | 1483.9*a | 80-120 |
| Potassium | | | | | | | | | | |
| Selenium | | | | | | | | | | |
| Silver | | | | | | | | | | |
| Sodium | | | | | | | | | | |
| Strontium | | | | | | | | | | |
| Thallium | | | | | | | | | | |
| Tin | | | | | | | | | | |
| Titanium | | | | | | | | | | |
| Vanadium | | | | | | | | | | |
| Zinc | | | | | | | | | | |

Associated samples MP43153: FC11168-1, FC11168-2, FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested
(a) Spike recovery indicates matrix interference and/or outside control limits due to high level in sample relative to spike amount.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/28/23

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Mercury | 0.042 | .0025 | .0042 | 0.0014 | <0.042 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

| Prep Date: | 11/28/23 | | | | 11/28/23 | | | |
|---|---|---|---|---|---|---|---|---|
| Metal | FC11125-1A Original | DUP | RPD | QC Limits | FC11125-1A Original | DUP | RPD | QC Limits |
| Mercury | 0.25 | 0.23 | 8.3 | 0-20 | 0.25 | 0.23 | 8.3 | 0-20 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/23

| Metal | FC11125-1A Original | MS | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|---|
| Mercury | 0.25 | 0.38 | 0.15 | 86.7 | 80-120 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/23

| Metal | FC11125-1A Original | MSD | Spikelot HGFLWS1 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Mercury | 0.25 | 0.33 | 0.15 | 53.3N(a) | 14.1 | 20 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample non-homogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/28/23

| Metal | BSP Result | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|
| Mercury | 0.24 | 0.25 | 96.0 | 80-120 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.2.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43202
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 11/28/23

| Metal | FC11125-1A Original | SDL 1:5 | %DIF | QC Limits |
|---|---|---|---|---|
| Mercury | 5.08 | 4.45 | 12.4*(a) | 0-10 |

Associated samples MP43202: FC11168-1, FC11168-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43203 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/23

| Metal | RL | IDL | MDL | MB raw | final |
|---|---|---|---|---|---|
| Mercury | 0.042 | .0025 | .0042 | -0.0010 | <0.042 |

Associated samples MP43203: FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.3.1
8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43203
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/28/23 11/28/23

| Metal | FC11168-11 Original | DUP | RPD | QC Limits | FC11168-11 Original | MS | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.33 | 0.29 | 12.9 | 0-20 | 0.33 | 0.74 | 0.415 | 98.7 | 80-120 |

Associated samples MP43203: FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43203
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/28/23

| Metal | FC11168-11 Original | MSD | Spikelot HGFLWS1 | % Rec | MSD RPD | QC Limit |
|---|---|---|---|---|---|---|
| Mercury | 0.33 | 0.73 | 0.409 | 97.7 | 1.4 | 20 |

Associated samples MP43203: FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43203
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/28/23

| Metal | BSP Result | Spikelot HGFLWS1 | % Rec | QC Limits |
|---|---|---|---|---|
| Mercury | 0.24 | 0.25 | 96.0 | 80-120 |

Associated samples MP43203: FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.3.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: FC11168
Account: GEOSORP - Geosyntec Consultants - Portland, OR
Project: Oakland Harbor

QC Batch ID: MP43203
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 11/28/23

| Metal | FC11168-11 Original | SDL 1:5 | %DIF | QC Limits |
|---|---|---|---|---|
| Mercury | 2.43 | 2.04 | 15.8*(a) | 0-10 |

Associated samples MP43203: FC11168-11

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

8.3.4

8

## Misc. Forms

### Custody Documents and Other Forms

(SGS Dayton, NJ)

Includes the following where applicable:

- Chain of Custody

FC11168-1 FC11168-1 SUB

Bot # 3 SUB NP

Bot # 3 NP SUB

# CHAIN OF CUSTODY

"SGS North America Inc. - Orlando
4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com/ehsusa"



FED-EX Tracking # 7029 6673 2409
Bottle Order Control #
SGS Quote #
SGS Job # FC11168

**Client / Reporting Information**

Company Name: SGS North America Inc.
Street Address: 4405 Vineland Rd, Suite C-15
City: Orlando State: FL Zip: 3281
Project Contact: Elvin.Kumar@sgs.com E-mail:
Phone #: 407-425-6700 Fax #:
Sampler(s) Name(s): ED Phone:

**Project Information**

Project Name: Oakland Harbor
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information ( if different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

**Requested Analysis ( see TEST CODE sheet)**: GRAINS, TOCSW846

Matrix Codes: DW - Drinking Wa; GW - Ground Wat; WW - Water; SW - Surface Wat; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liqui; AIR - Air; SOL - Other Soli; WP - Wipe; FB-Field Blank; EB-Equipment Bla; RB- Rinse Blank; TB-Trip Blank

| SGS Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | GRAINS, TOCSW846 | LAB USE ONL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01TB-TERMINAL | | 11/9/23 | 3:13:00 PM | ED | SO | 1 | | | | | 1 | | | | X | |
| 2 | 01TB-BELOW-35 MLLW | | 11/9/23 | 3:30:00 PM | ED | SO | 1 | | | | | 1 | | | | X | |
| 11 | 01TB-SURFACE TO-35 MLLW | | 11/9/23 | 4:25:00 PM | ED | SO | 1 | | | | | 1 | | | | X | |

Turnaround Time ( Business days)

Approved By (SGS PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [x] other 14

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" ( Level 2)
- [ ] FULLT1 ( Level 3+4 )
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C" X COMMBN
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Comments / Special Instructions

sub to SGS - Dayton, NJ
*Ship 1 x 8oz Glass Jar per Sample

Initial Assessment
Label Verification

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|
| | 11/ 123 1730 | 1 Fed Ex | 2 Fed Ex | 11/16/23 10:00 | 2 |
| Relinquished by Sampler: | Date Time: | Received By: 3 | Relinquished By: 4 | Date Time: | Received By: 4 |
| Relinquished by: | Date Time: | Received By: | Custody Seal # | Intact | Preserved where applicable / On Ice / Cooler Temp 4.8 |

FC11168: Chain of Custody
Page 1 of 2
SGS Dayton, NJ

# SGS Sample Receipt Summary

**Job Number:** FC11168 **Client:** SGS NORTH AMERICA INC. **Project:** OAKLAND HARBOR

**Date / Time Received:** 11/16/2023 10:00:00 AM **Delivery Method:** FEDEX **Airbill #'s:** 702466232409

**Cooler Temps (Raw Measured) °C:** Cooler 1: (4.8);

**Cooler Temps (Corrected) °C:** Cooler 1: (4.8);

| Cooler Security | Y | or N | | Y | or N |
|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☑ | ☐ | 3. COC Present: | ☑ | ☐ |
| 2. Custody Seals Intact: | ☑ | ☐ | 4. Smpl Dates/Time OK | ☑ | ☐ |

| Cooler Temperature | Y | or N |
|---|---|---|
| 1. Temp criteria achieved: | ☑ | ☐ |
| 2. Cooler temp verification: | | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

| Quality Control Preservatio | Y | or N | N/A |
|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | ☐ | ☑ |
| 3. Samples preserved properly: | ☑ | ☐ | |
| 4. VOCs headspace free: | ☐ | ☐ | ☑ |

| Sample Integrity - Documentation | Y | or N |
|---|---|---|
| 1. Sample labels present on bottles: | ☑ | ☐ |
| 2. Container labeling complete: | ☑ | ☐ |
| 3. Sample container label / COC agree: | ☑ | ☐ |

| Sample Integrity - Condition | Y | or N |
|---|---|---|
| 1. Sample recvd within HT: | ☑ | ☐ |
| 2. All containers accounted for: | ☑ | ☐ |
| 3. Condition of sample: | Intact | |

| Sample Integrity - Instructions | Y | or N | N/A |
|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | ☐ | |
| 4. Compositing instructions clear: | ☐ | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | ☐ | ☑ |

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

9.1

9

FC11168: Chain of Custody
Page 2 of 2

## General Chemistry

# QC Data Summaries

(SGS Dayton, NJ)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC11168
Account: ALSE - SGS Orlando, FL
Project: GEOSORP: Oakland Harbor

| Analyte | Batch ID | RL | MB Result | Units | Spike Amount | BSP Result | BSP %Recov | QC Limits |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | GP50606/GN48496 | 1000 | 0.00 | mg/kg | 20000 | 18300 | 91.5 | 80-120% |

Associated Samples:
Batch GP50606: FC11168-1, FC11168-2, FC11168-11
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC11168
Account: ALSE - SGS Orlando, FL
Project: GEOSORP: Oakland Harbor

| Analyte | Batch ID | QC Sample | Units | Original Result | DUP Result | RPD | QC Limits |
|---|---|---|---|---|---|---|---|
| % Gravel | GP50682/GN48757 | JD77372-1 | % | 0.0 | 0.0 | 0.0 | 0-41% |
| % Sand | GP50682/GN48757 | JD77372-1 | % | 86.9 | 87.3 | -0.6 | 0-16% |
| % Silt, Clay, Colloids | GP50682/GN48757 | JD77372-1 | % | 13.1 | 12.7 | 3.7 | 0-40% |
| 0.0015 mm (Hydrometer) | GP50682/GN48757 | JD77372-1 | % | 4.5 | 3.7 | 19.5 | 0-45% |
| 0.005 mm (Hydrometer) | GP50682/GN48757 | JD77372-1 | % | 16 | 13.8 | 17.2 | 0-48% |
| 0.030 mm (Hydrometer) | GP50682/GN48757 | JD77372-1 | % | 9.8 | 8.1 | 19.3 | 0-36% |
| 0.375 Inch Sieve | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-14% |
| 0.75 Inch Sieve | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-9% |
| 1.5 Inch Sieve | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-20% |
| 3 Inch Sieve | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-20% |
| No.10 Sieve (2.00 mm) | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-14% |
| No.100 Sieve (0.15 mm) | GP50682/GN48757 | JD77372-1 | % | 15.2 | 14.6 | 4.6 | 0-31% |
| No.16 Sieve (1.18 mm) | GP50682/GN48757 | JD77372-1 | % | 99.0 | 99.4 | -0.4 | 0-17% |
| No.200 Sieve (0.075 mm) | GP50682/GN48757 | JD77372-1 | % | 13.1 | 12.7 | 3.7 | 0-40% |
| No.30 Sieve (0.60 mm) | GP50682/GN48757 | JD77372-1 | % | 90.5 | 91.9 | -1.6 | 0-21% |
| No.4 Sieve (4.75 mm) | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-13% |
| No.50 Sieve (0.30 mm) | GP50682/GN48757 | JD77372-1 | % | 37.6 | 33.8 | 10.7 | 0-30% |
| No.8 Sieve (2.36 mm) | GP50682/GN48757 | JD77372-1 | % | 100 | 100 | 0.0 | 0-14% |

Associated Samples:
Batch GP50682: FC11168-1, FC11168-2, FC11168-11
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC11168
Account: ALSE - SGS Orlando, FL
Project: GEOSORP: Oakland Harbor

| Analyte | Batch ID | QC Sample | Units | Original Result | Spike Amount | MS Result | %Rec | QC Limits |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | GP50606/GN48496 | FC11080-1 | mg/kg | 4360 | 37100 | 26100 | 58.6 | 10-113% |

Associated Samples:
Batch GP50606: FC11168-1, FC11168-2, FC11168-11
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: FC11168
Account: ALSE - SGS Orlando, FL
Project: GEOSORP: Oakland Harbor

| Analyte | Batch ID | QC Sample | Units | Original Result | Spike Amount | MSD Result | RPD | QC Limit |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | GP50606/GN48496 | FC11080-1 | mg/kg | 4360 | 37800 | 28700 | 5.7 | 31% |

Associated Samples:
Batch GP50606: FC11168-1, FC11168-2, FC11168-11
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*
*Automated Report*

# Technical Report for

## Geosyntec Consultants - Portland, OR

Oakland Harbor

PNG1060

SGS Job Number: FC11168X

Sampling Date: 11/09/23

Report to:

Geosyntec Consultants - Portland, OR
920 SW 6th Ave Suite 600
Portland, OR 97204
edunbar@geosyntec.com

ATTN: Erin Dunbar

Total number of pages in report: **26**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.



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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

# Table of Contents

-1-

**Section 1: Sample Summary** ..... **3**
**Section 2: Subcontract Lab Data** ..... **4**
**Section 3: Misc. Forms** ..... **24**
**3.1:** Chain of Custody ..... 25

SGS North America Inc.

# Sample Summary

Geosyntec Consultants - Portland, OR

**Job No:** FC11168X

Oakland Harbor
Project No: PNG1060

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FC11168-1X | 11/09/23 | 15:13 | ED | 11/11/23 | SO | Sediment | 01TB-TERMINAL |
| FC11168-2X | 11/09/23 | 15:30 | ED | 11/11/23 | SO | Sediment | 01TB-BELOW-35 MLLW |
| FC11168-11X | 11/09/23 | 16:25 | ED | 11/11/23 | SO | Sediment | 01TB-SURFACE TO-35 MLLW |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Subcontract Lab Data

Report of Analysis

# McCampbell Analytical, Inc.

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# Analytical Report

| | | | |
|---|---|---|---|
| **WorkOrder:** | 2311B88 | **Amended:** | 01/02/2024 |
| | | **Revision:** | 1 |
| **Report Created for:** | SGS North America In.<br><br>4405 Vineland Rd. Suite C-15<br>Orlando, FL 32811 | | |
| **Project Contact:** | Elvin Kumar | | |
| **Project P.O.:** | | | |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | | |
| **Project Received:** | 11/16/2023 | | |

Analytical Report reviewed & approved for release on 11/29/2023 by:

Christine Askari
Project Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.***

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CA ELAP 1644 ♦ NELAP 4033 ORELAP

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# Revision History

**Client:** SGS North America In. **WorkOrder:** 2311B88
**Project:** FC11168X; FC11168X/ Oakland Harbor

| Date | Revision | Reason |
|---|---|---|
| 01/02/2024 | 1 | Revised PAHs to include additional compounds per client email. |

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# Glossary of Terms & Qualifier Definitions

**Client:** SGS North America In. **WorkOrder:** 2311B88
**Project:** FC11168X; FC11168X/ Oakland Harbor

## Glossary Abbreviation

| | |
|---|---|
| %D | Serial Dilution Percent Difference |
| 95% Interval | 95% Confident Interval |
| CCV | Continuing Calibration Verification. |
| CCV REC (%) | % recovery of Continuing Calibration Verification. |
| CPT | Consumer Product Testing not NELAP Accredited |
| DF | Dilution Factor |
| DI WET | (DISTLC) Waste Extraction Test using DI water |
| DISS | Dissolved (direct analysis of 0.45 µm filtered and acidified water sample) |
| DLT | Dilution Test (Serial Dilution) |
| DUP | Duplicate |
| EDL | Estimated Detection Limit |
| ERS | External reference sample. Second source calibration verification. |
| ITEF | International Toxicity Equivalence Factor |
| LCS | Laboratory Control Sample |
| LCS2 | Second LCS for the batch. Spike level is lower than that for the first LCS; applicable to method 1633. |
| LQL | Lowest Quantitation Level |
| MB | Method Blank |
| MB % Rec | % Recovery of Surrogate in Method Blank, if applicable |
| MDL | Method Detection Limit [1] |
| ML | Minimum Level of Quantitation |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| NA | Not Applicable |
| ND | Not detected at or above the indicated MDL or RL |
| NR | Data Not Reported due to matrix interference or insufficient sample amount. |
| PDS | Post Digestion Spike |
| PF | Prep Factor |
| RD | Relative Difference |
| RL | Reporting Limit [2] |
| RPD | Relative Percent Difference |
| RRT | Relative Retention Time |
| RSD | Relative Standard Deviation |
| SNR | Surrogate is diluted out of the calibration range |
| SPK Val | Spike Value |

[1] MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016. Values are based upon our default extraction volume/amount and are subject to change.

[2] RL is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.) Values are based upon our default extraction volume/amount and are subject to change.

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# Glossary of Terms & Qualifier Definitions

**Client:** SGS North America In. **WorkOrder:** 2311B88
**Project:** FC11168X; FC11168X/ Oakland Harbor

| | |
|---|---|
| SPKRef Val | Spike Reference Value |
| SPLP | Synthetic Precipitation Leachate Procedure |
| ST | Sorbent Tube |
| TCLP | Toxicity Characteristic Leachate Procedure |
| TEQ | Toxicity Equivalents |
| TNTC | “Too Numerous to Count;” greater than 250 colonies observed on the plate. |
| TZA | TimeZone Net Adjustment for sample collected outside of MAI's UTC. |
| WET (STLC) | Waste Extraction Test (Soluble Threshold Limit Concentration) |

## Analytical Qualifiers

| | |
|---|---|
| a2 | Sample diluted due to cluttered chromatogram. |
| h7 | Copper (EPA 3660B) cleanup |

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# Case Narrative

**Client:** SGS North America In.
**Project:** FC11168X; FC11168X/ Oakland Harbor

**Work Order:** 2311B88
November 29, 2023

Percent Moisture

In accordance with SW-846, 8000, percent moisture is reported as:

[Moisture Weight (g)] / [Sample Wet Weight (g)] x 100

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2

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Received:** | 11/16/2023 9:52 | **Extraction Method:** | SW3550B/3640Am/3630Cm |
| **Date Prepared:** | 11/20/2023 | **Analytical Method:** | SW8081A |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Unit:** | mg/kg-dry |

## Organochlorine Pesticides w/ Florisil Clean-up

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-TERMINAL | 2311B88-001A | Soil | 11/09/2023 15:13 | GC20 11272316.D | 282610 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| o,p-DDD | ND | 0.00057 | 5 | 11/27/2023 12:39 |
| o,p-DDE | ND | 0.00057 | 5 | 11/27/2023 12:39 |
| o,p-DDT | ND | 0.00057 | 5 | 11/27/2023 12:39 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| | 82 | 20-145 | 11/27/2023 12:39 |

Analyst(s): CK  Analytical Comments: h7,a2

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-BELOW-35 MLLW | 2311B88-002A | Soil | 11/09/2023 15:30 | GC20 11272317.D | 282610 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| o,p-DDD | ND | 0.00098 | 5 | 11/27/2023 12:55 |
| o,p-DDE | ND | 0.00098 | 5 | 11/27/2023 12:55 |
| o,p-DDT | **0.0027** | 0.00098 | 5 | 11/27/2023 12:55 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| | 92 | 20-145 | 11/27/2023 12:55 |

Analyst(s): CK  Analytical Comments: h7,a2

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-SURFACE TO-35 MLLW | 2311B88-003A | Soil | 11/09/2023 16:25 | GC20 11272318.D | 282610 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| o,p-DDD | ND | 0.00091 | 5 | 11/27/2023 13:10 |
| o,p-DDE | ND | 0.00091 | 5 | 11/27/2023 13:10 |
| o,p-DDT | **0.0012** | 0.00091 | 5 | 11/27/2023 13:10 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| | 95 | 20-145 | 11/27/2023 13:10 |

Analyst(s): CK  Analytical Comments: h7,a2

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Received:** | 11/16/2023 9:52 | **Extraction Method:** | SW3550B |
| **Date Prepared:** | 11/21/2023 | **Analytical Method:** | SW8270E |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Unit:** | mg/kg-dry |

## Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-TERMINAL | 2311B88-001A | Soil | 11/09/2023 15:13 | GC35 11212309.D | 282702 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,6-Dimethylnaphthalene | ND | 0.0057 | 2 | 11/21/2023 15:02 |
| 1-Methylphenanthrene | ND | 0.0057 | 2 | 11/21/2023 15:02 |
| Perylene | ND | 0.0057 | 2 | 11/21/2023 15:02 |
| 2,3,5-Trimethylnaphthalene | ND | 0.0057 | 2 | 11/21/2023 15:02 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorobiphenyl | 86 | 70-130 | 11/21/2023 15:02 |
| 4-Terphenyl-d14 | 89 | 70-130 | 11/21/2023 15:02 |

Analyst(s): LAT

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-BELOW-35 MLLW | 2311B88-002A | Soil | 11/09/2023 15:30 | GC35 11212310.D | 282702 |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,6-Dimethylnaphthalene | ND | 0.0098 | 2 | 11/21/2023 15:27 |
| 1-Methylphenanthrene | ND | 0.0098 | 2 | 11/21/2023 15:27 |
| Perylene | **0.033** | 0.0098 | 2 | 11/21/2023 15:27 |
| 2,3,5-Trimethylnaphthalene | ND | 0.0098 | 2 | 11/21/2023 15:27 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorobiphenyl | 101 | 70-130 | 11/21/2023 15:27 |
| 4-Terphenyl-d14 | 105 | 70-130 | 11/21/2023 15:27 |

Analyst(s): LAT

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Received:** | 11/16/2023 9:52 | **Extraction Method:** | SW3550B |
| **Date Prepared:** | 11/21/2023 | **Analytical Method:** | SW8270E |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Unit:** | mg/kg-dry |

## Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **01TB-SURFACE TO-35 MLLW** | **2311B88-003A** | **Soil** | **11/09/2023 16:25** | **GC35 11212311.D** | **282702** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2,6-Dimethylnaphthalene | ND | 0.022 | 5 | 11/21/2023 15:53 |
| 1-Methylphenanthrene | ND | 0.022 | 5 | 11/21/2023 15:53 |
| Perylene | **0.036** | 0.022 | 5 | 11/21/2023 15:53 |
| 2,3,5-Trimethylnaphthalene | ND | 0.022 | 5 | 11/21/2023 15:53 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 2-Fluorobiphenyl | 99 | 70-130 | 11/21/2023 15:53 |
| 4-Terphenyl-d14 | 115 | 70-130 | 11/21/2023 15:53 |

Analyst(s): LAT

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Received:** | 11/16/2023 9:52 | **Extraction Method:** | ASTM D2216 |
| **Date Prepared:** | 11/20/2023 | **Analytical Method:** | SW8000 |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Unit:** | wet wt% |

## Percent Moisture

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-TERMINAL | 2311B88-001A | Soil | 11/09/2023 15:13 | WetChem | 282670 |

| Analytes | Result | RL | Date Analyzed |
|---|---|---|---|
| % Moisture | **11.7** | 0.100 | 11/20/2023 20:05 |

Analyst(s): JRA

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-BELOW-35 MLLW | 2311B88-002A | Soil | 11/09/2023 15:30 | WetChem | 282670 |

| Analytes | Result | RL | Date Analyzed |
|---|---|---|---|
| % Moisture | **49.0** | 0.100 | 11/21/2023 12:30 |

Analyst(s): JRA

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| 01TB-SURFACE TO-35 MLLW | 2311B88-003A | Soil | 11/09/2023 16:25 | WetChem | 282670 |

| Analytes | Result | RL | Date Analyzed |
|---|---|---|---|
| % Moisture | **45.2** | 0.100 | 11/21/2023 12:35 |

Analyst(s): JRA

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Prepared:** | 11/20/2023 | **BatchID:** | 282610 |
| **Date Analyzed:** | 11/27/2023 | **Extraction Method:** | SW3550B/3640Am/3630Cm |
| **Instrument:** | GC20 | **Analytical Method:** | SW8081A |
| **Matrix:** | Soil | **Unit:** | mg/kg |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Sample ID:** | MB-282610 |

## QC Summary Report for SW8081B

| Analyte | MB Result | MDL | RL | SPK Val | MB SS %REC | MB SS Limits |
|---|---|---|---|---|---|---|
| o,p-DDD | ND | 0.000035 | 0.00010 | - | - | - |
| o,p-DDE | ND | 0.000036 | 0.00010 | - | - | - |
| o,p-DDT | ND | 0.000045 | 0.00010 | - | - | - |
| **Surrogate Recovery** | | | | | | |
| Decachlorobiphenyl | 0.0058 | | | 0.005 | 115 | 28-170 |

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Prepared:** | 11/21/2023 | **BatchID:** | 282702 |
| **Date Analyzed:** | 11/21/2023 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC17 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Sample ID:** | MB/LCS/LCSD-282702 |

## QC Summary Report for SW8270C

| Analyte | MB Result | MDL | RL | SPK Val | MB SS %REC | MB SS Limits |
|---|---|---|---|---|---|---|
| Acenaphthene | ND | 0.00035 | 0.0013 | - | - | - |
| Acenaphthylene | ND | 0.00028 | 0.0013 | - | - | - |
| Anthracene | ND | 0.00057 | 0.0013 | - | - | - |
| Benzo (a) anthracene | ND | 0.0036 | 0.012 | - | - | - |
| Benzo (a) pyrene | ND | 0.00070 | 0.0013 | - | - | - |
| Benzo (b) fluoranthene | ND | 0.0011 | 0.0025 | - | - | - |
| Benzo (g,h,i) perylene | ND | 0.00089 | 0.0025 | - | - | - |
| Benzo (k) fluoranthene | ND | 0.0010 | 0.0025 | - | - | - |
| 1,1-Biphenyl | ND | 0.0029 | 0.012 | - | - | - |
| Chrysene | ND | 0.00067 | 0.0013 | - | - | - |
| Dibenzo (a,h) anthracene | ND | 0.0011 | 0.0025 | - | - | - |
| Fluoranthene | ND | 0.00079 | 0.0025 | - | - | - |
| Fluorene | ND | 0.0010 | 0.0025 | - | - | - |
| Indeno (1,2,3-cd) pyrene | ND | 0.0016 | 0.0025 | - | - | - |
| 1-Methylnaphthalene | ND | 0.00033 | 0.0013 | - | - | - |
| 2-Methylnaphthalene | ND | 0.00048 | 0.0013 | - | - | - |
| Naphthalene | ND | 0.00042 | 0.0025 | - | - | - |
| Phenanthrene | ND | 0.00068 | 0.0013 | - | - | - |
| Pyrene | ND | 0.00063 | 0.0013 | - | - | - |
| **Surrogate Recovery** | | | | | | |
| 2-Fluorophenol | 1.4 | | | 1.25 | 111 | 70-130 |
| Phenol-d5 | 1.3 | | | 1.25 | 104 | 70-130 |
| Nitrobenzene-d5 | 1.2 | | | 1.25 | 99 | 60-130 |
| 2-Fluorobiphenyl | 1.1 | | | 1.25 | 91 | 60-130 |
| 2,4,6-Tribromophenol | 1.1 | | | 1.25 | 88 | 30-130 |
| 4-Terphenyl-d14 | 1.3 | | | 1.25 | 103 | 40-130 |

*(Cont.)*

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Prepared:** | 11/21/2023 | **BatchID:** | 282702 |
| **Date Analyzed:** | 11/21/2023 | **Extraction Method:** | SW3550B |
| **Instrument:** | GC17 | **Analytical Method:** | SW8270C |
| **Matrix:** | Soil | **Unit:** | mg/Kg |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Sample ID:** | MB/LCS/LCSD-282702 |

## QC Summary Report for SW8270C

| Analyte | LCS Result | LCSD Result | SPK Val | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 0.045 | 0.042 | 0.062 | 71 | 68 | 60-130 | 5.07 | 30 |
| Acenaphthylene | 0.045 | 0.043 | 0.062 | 72 | 69 | 60-130 | 4.93 | 30 |
| Anthracene | 0.047 | 0.044 | 0.062 | 75 | 71 | 60-130 | 5.90 | 30 |
| Benzo (a) anthracene | 0.052 | 0.048 | 0.062 | 83 | 76 | 70-130 | 8.96 | 30 |
| Benzo (a) pyrene | 0.054 | 0.049 | 0.062 | 87 | 78 | 70-130 | 10.5 | 30 |
| Benzo (b) fluoranthene | 0.053 | 0.047 | 0.062 | 85 | 75 | 60-130 | 11.4 | 30 |
| Benzo (g,h,i) perylene | 0.052 | 0.047 | 0.062 | 84 | 75 | 70-130 | 10.9 | 30 |
| Benzo (k) fluoranthene | 0.052 | 0.048 | 0.062 | 83 | 76 | 70-130 | 9.04 | 30 |
| 1,1-Biphenyl | 0.047 | 0.045 | 0.062 | 76 | 73 | 60-130 | 4.47 | 30 |
| Chrysene | 0.050 | 0.046 | 0.062 | 80 | 74 | 70-130 | 8.29 | 30 |
| Dibenzo (a,h) anthracene | 0.054 | 0.051 | 0.062 | 87 | 81 | 70-130 | 6.87 | 30 |
| Fluoranthene | 0.048 | 0.044 | 0.062 | 78 | 70 | 70-130 | 9.61 | 30 |
| Fluorene | 0.050 | 0.047 | 0.062 | 80 | 76 | 60-130 | 5.41 | 30 |
| Indeno (1,2,3-cd) pyrene | 0.053 | 0.048 | 0.062 | 84 | 77 | 70-130 | 8.84 | 30 |
| 1-Methylnaphthalene | 0.044 | 0.044 | 0.062 | 71 | 70 | 70-130 | 2.20 | 30 |
| 2-Methylnaphthalene | 0.047 | 0.046 | 0.062 | 75 | 73 | 70-130 | 2.61 | 30 |
| Naphthalene | 0.046 | 0.044 | 0.062 | 73 | 70 | 70-130 | 4.15 | 30 |
| Phenanthrene | 0.050 | 0.047 | 0.062 | 80 | 75 | 60-130 | 6.04 | 30 |
| Pyrene | 0.054 | 0.051 | 0.062 | 86 | 81 | 70-130 | 5.73 | 30 |
| **Surrogate Recovery** | | | | | | | | |
| 2-Fluorophenol | 1.3 | 1.3 | 1.25 | 101 | 100 | 70-130 | 1.11 | 30 |

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2

# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | SGS North America In. | **WorkOrder:** | 2311B88 |
| **Date Prepared:** | 11/20/2023 | **BatchID:** | 282670 |
| **Date Analyzed:** | 11/20/2023 | **Extraction Method:** | ASTM D2216 |
| **Instrument:** | WetChem | **Analytical Method:** | SW8000 |
| **Matrix:** | Soil | **Unit:** | wet wt% |
| **Project:** | FC11168X; FC11168X/ Oakland Harbor | **Sample ID:** | MB-282670 |

## QC Summary Report for Percent Moisture

| Analyte | MB Result | MDL | RL | | | |
|---|---|---|---|---|---|---|
| % Moisture | ND | 0.100 | 0.100 | - | - | - |

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# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 2311B88** **ClientCode: SGSAF**

☐ WaterTrax ☐ CLIP ☐ EDF ☐ EQuIS ☐ Dry-Weight ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☑ Excel [SGS N. America (Hist)]

**Report to:**
Elvin Kumar
SGS North America In.
4405 Vineland Rd. Suite C-15
Orlando, FL 32811
(407) 425-6700 FAX:

Email: elvin.kumar@sgs.com
cc/3rd Party:
PO:
Project: FC11168X; FC11168X/ Oakland Harbor

**Bill to:**
Accounts Payable
SGS North America Inc.
4405 Vineland Rd. Suite C-15
Orlando, FL 32811
elvin.kumar@sgs.com; sgs.ap.us@hero

**Requested TAT:** 5 days;

*Date Received:* 11/16/2023
*Date Logged:* 11/16/2023

| Lab ID | ClientSampID | Matrix | Collection Date | Hold | Requested Tests (See legend below) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2311B88-001 | 01TB-TERMINAL | Soil | 11/9/2023 15:13 | ☐ | A | A | A | A | | | | | | | | |
| 2311B88-002 | 01TB-BELOW-35 MLLW | Soil | 11/9/2023 15:30 | ☐ | A | A | A | A | | | | | | | | |
| 2311B88-003 | 01TB-SURFACE TO-35 MLLW | Soil | 11/9/2023 16:25 | ☐ | A | A | A | A | | | | | | | | |

**Test Legend:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 8081O,P_ESL_LL_S | 2 | 8270_PNAEXT_S | 3 | PERmoist_S | 4 | PRDisposal Fee |
| 5 | | 6 | | 7 | | 8 | |
| 9 | | 10 | | 11 | | 12 | |

**Prepared by: Agustina Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

# WORK ORDER SUMMARY

**Client Name:** SGS NORTH AMERICA IN.
**Client Contact:** Elvin Kumar
**Contact's Email:** elvin.kumar@sgs.com

**Project:** FC11168X; FC11168X/ Oakland Harbor
**Comments:**

**Work Order:** 2311B88
**QC Level:** LEVEL 2
**Date Logged:** 11/16/2023

☐ WaterTrax ☐ CLIP ☐ EDF ☑ Excel ■ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

| LabID | ClientSampID | Matrix | Test Name | Containers /Composites | Bottle & Preservative | U** | Head Space | Dry-Weight | Collection Date & Time | TAT | Test Due Date | Sediment Content | Hold | Sub Out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 001A | 01TB-TERMINAL | Soil | SW 8000 (Percent Moisture) | 1 | 8OZ GJ, Unpres | ☐ | ☐ | ☑ | 11/9/2023 15:13 | 5 days | 11/27/2023 | | ☐ | ☐ |
| | | | SW8270E (PAHs/PNAs) <1-Methylphenanthrene, 2,3,5-Trimethylnaphthalene, 2,6-Dimethylnaphthalene, Perylene> | | | ☐ | ☐ | ☑ | | 5 days | 11/27/2023 | | ☐ | ☐ |
| | | | SW8081B (OC Pesticides) Low Level ESLs | | | ☐ | ☐ | ☑ | | 5 days | 11/29/2023 | | ☐ | ☐ |
| 002A | 01TB-BELOW-35 MLLW | Soil | SW 8000 (Percent Moisture) | 1 | 8OZ GJ, Unpres | ☐ | ☐ | ☑ | 11/9/2023 15:30 | 5 days | 11/27/2023 | | ☐ | ☐ |
| | | | SW8270E (PAHs/PNAs) <1-Methylphenanthrene, 2,3,5-Trimethylnaphthalene, 2,6-Dimethylnaphthalene, Perylene> | | | ☐ | ☐ | ☑ | | 5 days | 11/27/2023 | | ☐ | ☐ |
| | | | SW8081B (OC Pesticides) Low Level ESLs | | | ☐ | ☐ | ☑ | | 5 days | 11/29/2023 | | ☐ | ☐ |
| 003A | 01TB-SURFACE TO-35 MLLW | Soil | SW 8000 (Percent Moisture) | 1 | 8OZ GJ, Unpres | ☐ | ☐ | ☑ | 11/9/2023 16:25 | 5 days | 11/27/2023 | | ☐ | ☐ |

**NOTES:** *** STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

**- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.**

**- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.**

**- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.**

**U** = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

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# WORK ORDER SUMMARY

**Client Name:** SGS NORTH AMERICA IN.
**Client Contact:** Elvin Kumar
**Contact's Email:** elvin.kumar@sgs.com

**Project:** FC11168X; FC11168X/ Oakland Harbor
**Comments:**

**Work Order:** 2311B88
**QC Level:** LEVEL 2
**Date Logged:** 11/16/2023

☐ WaterTrax ☐ CLIP ☐ EDF ☑ Excel ■ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

| LabID | ClientSampID | Matrix | Test Name | Containers /Composites | Bottle & Preservative | U** | Head Space | Dry-Weight | Collection Date & Time | TAT | Test Due Date | Sediment Content | Hold | Sub Out |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003A | 01TB-SURFACE TO-35 MLLW | Soil | SW8270E (PAHs/PNAs) <1-Methylphenanthrene, 2,3,5-Trimethylnaphthalene, 2,6-Dimethylnaphthalene, Perylene> | 1 | 8OZ GJ, Unpres | ☐ | ☐ | ☑ | 11/9/2023 16:25 | 5 days | 11/27/2023 | | ☐ | ☐ |
| | | | SW8081B (OC Pesticides) Low Level ESLs | | | ☐ | ☐ | ☑ | | 5 days | 11/29/2023 | | ☐ | ☐ |

**NOTES:** *** STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

**- ISM prep requires 5 to 10 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 6 to 11 days from sample submission). Due date listed on WO summary will not accurately reflect the time needed for sample preparation.**

**- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.**

**- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.**

**U** = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

FC11168-1 FC11168-1 SUB

Bot # 3 Bot # 3 NP SUB

SUB

NP

2311B88

# CHAIN OF CUSTODY

"SGS North America Inc. - Orlando
4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com/ehsusa"



FED-EX Tracking #

Bottle Order Control #

SGS Quote #

SGS Job # FC11168X

**Client / Reporting Information**

Company Name: SGS North America Inc.

Street Address: 4405 Vineland Rd, Suite C-15

City State Zip: Orlando FL 3281

Project Contact E-mail: Elvin.Kumar@sgs.com

Phone # 408-612-9410 Fax #

Sampler(s) Name(s) ED Phone

**Project Information**

Project Name: FC11168X / Oakland Harbor

Street

City State

Project #

Client Purchase Order #

Project Manager: Elvin Kumar

**Billing Information ( if different from Report to)**

Company Name: SGS North America Inc.

Street Address: 201 Route 17 North, 7th Floor

City State Zip: Rutherford, New Jersey 07070

Attention: Elvin Kumar (email Invoices)

**Requested Analysis ( see TEST CODE sheet)**

Matrix Codes: DW - Drinking Wa; GW - Ground Wat; WW - Water; SW - Surface Wat; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liqui; AIR - Air; SOL - Other Soli; WP - Wipe; FB-Field Blank; EB-Equipment Bla; RB- Rinse Blank; TB-Trip Blank

| SGS Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | %MOISTURE (Report Data on Dry Weight Basis) | Pesticides by EPA 8081A: 2,4' DDD; 2,4' DDE; 2,4' DDT | PAHs by EPA 8270C: 1-Methylphenanthrene; 2,3,5- | Standard EDD in Excel and EQUIS Format | LAB USE ONL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1X | 01TB-TERMINAL | | 11/9/23 | 3:13:00 PM | ED | SO | 1 | | | | | 1 | | | | X | X | X | X | |
| 2X | 01TB-BELOW-35 MLLW | | 11/9/23 | 3:30:00 PM | ED | SO | 1 | | | | | 1 | | | | X | X | X | X | |
| 1X | 01TB-SURFACE TO-35 MLLW | | 11/9/23 | 4:25:00 PM | ED | SO | 1 | | | | | 1 | | | | X | X | X | X | |

Turnaround Time ( Business days)

Approved By (SGS PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other Due: STANDARD TAT

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" ( Level 2)
- [ ] FULLT1 ( Level 3+4 )
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [X] EDD Format
- [ ] Other

X COMMBN

Commercial "A" = Results Only

Commercial "B" = Results + QC Summary

Comments / Special Instructions

Sub to: McCampbell Analytical - 1534 Willow Pass Rd, Pittsburg, CA 94565
(925) 252-9262
**Ship 1 x 8oz Glass Jar per sample.

1.00 wt

FEDEX: 702466232361

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|
| [signature] | 11/15/23 1730 | 1 | 2 | 11/16/23 0957 | 2 [signature] |
| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
| | | 3 | 4 | | 4 |
| Relinquished by: | Date Time: | Received By: | Custody Seal # | Intact | Preserved where applicable | On Ice | Cooler Temp |

## Christine Askari

**From:** Kumar, Elvin (Orlando) <Elvin.Kumar@sgs.com>
**Sent:** Tuesday, January 2, 2024 2:26 PM
**To:** Nicole Hisamoto; Jennifer Lagerbom
**Cc:** MAI Sales; Mccampbell Analytical, Inc.
**Subject:** RE: [EXTERNAL] RE: Sediment samples for Pesticides and SVOCs
**Attachments:** 2311B88.pdf; RE: [EXTERNAL] RE: Sediment samples for Pesticides and SVOCs

**Importance:** High

Good afternoon,

This is regarding Work Order: **2311B88**

Per email attached, the following compounds need reported.

My apologies, the 3 other compounds for PAHs(8270SIM) got cut off on the original COC.

Would you please provide a revised report?

Pesticides by EPA 8081B

- 2,4' DDD,
- 2,4' DDE
- 2,4' DDT

PAHs by EPA 8270C

- 1-Methylphenanthrene
- 2,3,5- Trimethylnaphthalene
- Perylene
- 2,6 – Dimethylnapthalene

Thank you,

**Elvin Kumar**
**Industries & Environment**
Sr. Project Manager

**SGS North America Inc.**

---

**From:** Nicole Hisamoto <nicole.hisamoto@mccampbell.com>
**Sent:** Thursday, November 16, 2023 11:31 AM
**To:** Kumar, Elvin (Orlando) <Elvin.Kumar@sgs.com>
**Cc:** MAI Sales <sales@mccampbell.com>; Mccampbell Analytical, Inc. <main@mccampbell.com>
**Subject:** RE: [EXTERNAL] RE: Sediment samples for Pesticides and SVOCs

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

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http://www.mccampbell.com / E-mail: main@mccampbell.com

2

# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Client Name: | SGS North America In. | Date and Time Received: | 11/16/2023 09:52 |
| Project: | FC11168X; FC11168X/ Oakland Harbor | Date Logged: | 11/16/2023 |
| | | Received by: | Agustina Venegas |
| WorkOrder №: | 2311B88 Matrix: Soil | Logged by: | Agustina Venegas |
| Carrier: | FedEx | | |

## Chain of Custody (COC) Information

| | | | |
|---|---|---|---|
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Sample IDs noted by Client on COC? | Yes ☑ | No ☐ | |
| Date and Time of collection noted by Client on COC? | Yes ☑ | No ☐ | |
| Sampler's name noted on COC? | Yes ☐ | No ☑ | |
| COC agrees with Quote? | Yes ☐ | No ☐ | NA ☑ |

## Sample Receipt Information

| | | | |
|---|---|---|---|
| Custody seals intact on shipping container/cooler? | Yes ☐ | No ☐ | NA ☑ |
| Custody seals intact on sample bottles? | Yes ☐ | No ☐ | NA ☑ |
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | |
| Samples in proper containers/bottles? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |

## Sample Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | NA ☐ |
| Samples Received on Ice? | Yes ☑ | No ☐ | |
| | (Ice Type: WET ICE ) | | |
| Sample/Temp Blank temperature | Temp: 1°C | | NA ☐ |
| ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)? | Yes ☐ | No ☐ | NA ☑ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)? | Yes ☐ | No ☐ | NA ☑ |
| UCMR Samples: | | | |
| pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)? | Yes ☐ | No ☐ | NA ☑ |
| Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]? | Yes ☐ | No ☐ | NA ☑ |

Comments:

## Misc. Forms

### Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# SGS North America Inc - Orlando

## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC11168

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

**Client / Reporting Information**

Company Name: Geosyntec Consultants
Address: 920 SW 6th Ave, Suite 600
City: Portland State: OR Zip: 97204
Project Contact: Erin Dunbar Email: edunbar@geosyntec.com
Phone #: 971-271-5916
Sampler(s) Name(s) (Printed)
Sampler 1: Erin Dunbar Sampler 2: Megan Ogburn

**Project Information**

Project Name: Oakland Harbor
Street
City: Oakland State: CA
Project #: PNG1060
Fax #
Client Purchase Order #: 1000539162

**Analytical Information**

| SGS Orlando Sample # | Field ID / Point of Collection | Collection Date | Time | Sampled By: | Matrix | Total # of Bottles | Other | None | HCl | NaOH | HNO3 | H2SO4 | NaOH+ZnAc | DI WATER | MEOH | PAHs 8270 | Pesticides 8081 | PCBs Congeners 8082/1668 | TOC 9060 | Dioxin/Furan 1613 | Butyltins Krone 1988 | Grain Size D422 | Metals 6020/7471 | Solids 2540 | Archive | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OITB - Terminal | 11/9/23 | 1513 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 2 | OITB - Below -35 MLLW | 11/9/23 | 1530 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 3 | Archive-02 | 11/9/23 | 1552 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 4 | Archive-03 | 11/9/23 | 1556 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 5 | Archive-04 | 11/9/23 | 1559 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 6 | Archive-01 | 11/9/23 | 1606 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 7 | Archive-08 | 11/9/23 | 1609 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 8 | Archive-05A | 11/9/23 | 1611 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 9 | Archive-07 | 11/9/23 | 1618 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 10 | Archive-05 | 11/9/23 | 1622 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 11 | OITB - Surface to -35 MLLW | 11/9/23 | 1625 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |

INITIAL ASSESSMENT
LABEL VERIFICATION

**Matrix Codes**: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

**Turnaround Time ( Business days)**

10 Day (Business) — Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

Metals include: As, Cr, Cd, Cu, Pb, Ni, Se, Ag, Zn, Hg

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|
| 1 Erin Dunbar Geosyntec | 11/10/23 1151 | 2 to FedEx | 3 | | 4 1000 11/11/23 |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
| 5 | | 6 | 7 | | 8 |

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.6 IR1

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FC11168X: Chain of Custody
Page 1 of 2

# SGS Sample Receipt Summary

**Job Number:** fc11168 **Client:** Geosyntec Consultants **Project:** Oakland Harbor

**Date / Time Received:** 11/11/2023 10:00:00 AM **Delivery Method:** FedEx **Airbill #'s:** 786219631416

**Cooler Temps (Raw Measured) °C:** Cooler 1: (4.6);

**Cooler Temps (Corrected) °C:** Cooler 1: (5.0);

| Cooler Informatio | Y | or | N |
|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ |
| 3. Temp criteria achieved: | ☑ | | ☐ |
| 4. Cooler temp verification: | | IR Gun | |
| 5. Cooler media: | | Ice (Bag) | |

| Trip Blank Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |

| | W | or | S | N/A |
|---|---|---|---|---|
| 3. Type of TB Received | ☐ | | ☐ | ☑ |

| Sample Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ | |
| 2. Samples presented properly | ☑ | | ☐ | |
| 3. Suffiient volume/containers recv'd for analysi | ☑ | | ☐ | |
| 4. Condition of sample: | Intact | | | |
| 5. Sample recv'd within HT | ☑ | | ☐ | |
| 6. Dates/Times/IDs on COC match sample labe | ☑ | | ☐ | |
| 7. VOCs have headspace | ☐ | | ☐ | ☑ |
| 8. Bottles received for unspecified tests | ☐ | | ☑ | |
| 9. Compositing instructions clear | ☐ | | ☐ | ☑ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | | ☐ | ☑ |
| 11. % Solids Jar Received? | ☑ | | ☐ | ☐ |
| 12. Residual Chlorine Present? | ☐ | | ☐ | ☑ |

**Misc Information**

Number of Encores: 25 Gram 5 Gram Number of Lab Filtered Metals

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot _____

Comments

SM001
Rev. Date 05/04/17

Technician: DONM Date: 11/11/2023 3:46:04 PM Reviewer: ZD Date: 11/11/2023

**FC11168X: Chain of Custody**
**Page 2 of 2**

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*
*Automated Report*

# Technical Report for

## Geosyntec Consultants - Portland, OR

Oakland Harbor

PNG1060

SGS Job Number: FC11168XE

Sampling Date: 11/09/23

Report to:

Geosyntec Consultants - Portland, OR
920 SW 6th Ave Suite 600
Portland, OR 97204
edunbar@geosyntec.com

ATTN: Erin Dunbar

Total number of pages in report: **26**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.



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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

# Table of Contents

-1-

**Section 1: Sample Summary** ..... **3**
**Section 2: Subcontract Lab Data** ..... **4**
**Section 3: Misc. Forms** ..... **24**
**3.1:** Chain of Custody ..... 25

SGS North America Inc.

# Sample Summary

Geosyntec Consultants - Portland, OR

**Job No:** FC11168XE

Oakland Harbor
Project No: PNG1060

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FC11168-1XE | 11/09/23 | 15:13 | ED | 11/11/23 | SO | Sediment | 01TB-TERMINAL |
| FC11168-2XE | 11/09/23 | 15:30 | ED | 11/11/23 | SO | Sediment | 01TB-BELOW-35 MLLW |
| FC11168-11XE | 11/09/23 | 16:25 | ED | 11/11/23 | SO | Sediment | 01TB-SURFACE TO-35 MLLW |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Subcontract Lab Data

Report of Analysis

eurofins | Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Elvin Kumar
SGS North America, Inc
4405 Vineland Road
Suite C-15
Orlando, Florida 32811

Generated 1/10/2024 11:49:35 AM Revision 1

## JOB DESCRIPTION

Tributyltin in Sediments

## JOB NUMBER

570-161346-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.



my EOL



SGS
FC11168XE

# Eurofins Calscience

## Job Notes

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## Authorization

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# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 3
Definitions/Glossary . . . . . 4
Case Narrative . . . . . 5
Detection Summary . . . . . 6
Client Sample Results . . . . . 7
Surrogate Summary . . . . . 9
QC Sample Results . . . . . 10
QC Association Summary . . . . . 12
Lab Chronicle . . . . . 13
Certification Summary . . . . . 14
Method Summary . . . . . 15
Sample Summary . . . . . 16
Chain of Custody . . . . . 17
Receipt Checklists . . . . . 19

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD recovery exceeds control limits. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| H | Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements. |
| H3 | Sample was received and analyzed past holding time. This does not meet regulatory requirements. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

**Job Narrative**
**570-161346-1**

REVISION

The report being provided is a revision of the original report sent on 12/13/2023. The report (revision 1) is being revised due to Revised to report Organotins full list per client's request on 01/02/24.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

**Receipt**
The samples were received on 11/17/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C

**GC/MS Semi VOA**
Method Organotins_SIM: The method blank for preparation batch 570-386121 and analytical batch 570-387328 contained Dibutyltin and Monobutyltin above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method Organotins_SIM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-386121 and analytical batch 570-386903 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method Organotins_SIM: The surrogate recovery for the blank associated with preparation batch 570-386121 and analytical batch 570-386903 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**General Chemistry**
Method Moisture: The following samples were received outside of holding time: 01TB-TERMINAL (570-161346-1), 01TB-BELOW-35 MLLW (570-161346-2) and 01TB-SURFACE TO-35 MLLW (570-161346-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## Client Sample ID: 01TB-TERMINAL — Lab Sample ID: 570-161346-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Sample Homogenized | yes | | | | NONE | 1 | | Homogenization | Total/NA |

## Client Sample ID: 01TB-BELOW-35 MLLW — Lab Sample ID: 570-161346-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Dibutyltin | 5.6 | J | 5.8 | 2.5 | ug/Kg | 1 | ☼ | Organotins SIM | Total/NA |
| Sample Homogenized | yes | | | | NONE | 1 | | Homogenization | Total/NA |

## Client Sample ID: 01TB-SURFACE TO-35 MLLW — Lab Sample ID: 570-161346-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Dibutyltin | 3.1 | J | 5.3 | 2.3 | ug/Kg | 1 | ☼ | Organotins SIM | Total/NA |
| Sample Homogenized | yes | | | | NONE | 1 | | Homogenization | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## Method: Lab SOP Organotins SIM - Organotins (GC/MS SIM)

**Client Sample ID: 01TB-TERMINAL** — **Lab Sample ID: 570-161346-1**
**Date Collected: 11/09/23 15:13** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dibutyltin | ND | | 4.5 | 1.9 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:10 | 1 |
| Monobutyltin | ND | F1 | 4.5 | 0.81 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:10 | 1 |
| Tetrabutyltin | ND | | 4.5 | 2.4 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:10 | 1 |
| Tributyltin | ND | | 4.5 | 2.1 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tripentyltin* | *88* | | *39 - 150* | *11/21/23 17:35* | *11/27/23 16:10* | *1* |

**Client Sample ID: 01TB-BELOW-35 MLLW** — **Lab Sample ID: 570-161346-2**
**Date Collected: 11/09/23 15:30** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dibutyltin** | **5.6** | **J** | 5.8 | 2.5 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:28 | 1 |
| Monobutyltin | ND | | 5.8 | 1.0 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:28 | 1 |
| Tetrabutyltin | ND | | 5.8 | 3.1 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:28 | 1 |
| Tributyltin | ND | | 5.8 | 2.7 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tripentyltin* | *85* | | *39 - 150* | *11/21/23 17:35* | *11/27/23 16:28* | *1* |

**Client Sample ID: 01TB-SURFACE TO-35 MLLW** — **Lab Sample ID: 570-161346-3**
**Date Collected: 11/09/23 16:25** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dibutyltin** | **3.1** | **J** | 5.3 | 2.3 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:46 | 1 |
| Monobutyltin | ND | | 5.3 | 0.95 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:46 | 1 |
| Tetrabutyltin | ND | | 5.3 | 2.9 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:46 | 1 |
| Tributyltin | ND | | 5.3 | 2.5 | ug/Kg | ☼ | 11/21/23 17:35 | 11/27/23 16:46 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tripentyltin* | *91* | | *39 - 150* | *11/21/23 17:35* | *11/27/23 16:46* | *1* |

## General Chemistry

**Client Sample ID: 01TB-TERMINAL** — **Lab Sample ID: 570-161346-1**
**Date Collected: 11/09/23 15:13** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sample Homogenized (None Homogenization) | yes | | | | NONE | | | 11/20/23 11:17 | 1 |
| Percent Moisture (EPA Moisture) | 35.5 | H H3 | 0.1 | 0.1 | % | | | 11/22/23 10:04 | 1 |

**Client Sample ID: 01TB-BELOW-35 MLLW** — **Lab Sample ID: 570-161346-2**
**Date Collected: 11/09/23 15:30** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sample Homogenized (None Homogenization) | yes | | | | NONE | | | 11/20/23 11:17 | 1 |
| Percent Moisture (EPA Moisture) | 48.7 | H H3 | 0.1 | 0.1 | % | | | 11/22/23 10:04 | 1 |

**Client Sample ID: 01TB-SURFACE TO-35 MLLW** — **Lab Sample ID: 570-161346-3**
**Date Collected: 11/09/23 16:25** — **Matrix: Solid**
**Date Received: 11/17/23 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sample Homogenized (None Homogenization) | yes | | | | NONE | | | 11/20/23 11:17 | 1 |
| Percent Moisture (EPA Moisture) | 45.7 | H H3 | 0.1 | 0.1 | % | | | 11/22/23 10:04 | 1 |

# Surrogate Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## Method: Organotins SIM - Organotins (GC/MS SIM)

**Matrix: Solid** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Lab Sample ID** | **Client Sample ID** | **TPTT (39-150)** | | | | | | | |
| 570-161346-1 | 01TB-TERMINAL | 88 | | | | | | | |
| 570-161346-1 MS | 01TB-TERMINAL | 65 | | | | | | | |
| 570-161346-1 MSD | 01TB-TERMINAL | 72 | | | | | | | |
| 570-161346-2 | 01TB-BELOW-35 MLLW | 85 | | | | | | | |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | 91 | | | | | | | |
| LCS 570-386121/2-A | Lab Control Sample | 55 | | | | | | | |
| LCSD 570-386121/3-A | Lab Control Sample Dup | 54 | | | | | | | |
| MB 570-386121/1-A | Method Blank | 31 S1- | | | | | | | |
| MB 570-386121/1-A | Method Blank | 78 | | | | | | | |

**Surrogate Legend**

TPTT = Tripentyltin

## Method: Organotins SIM - Organotins (GC/MS SIM)

**Lab Sample ID: MB 570-386121/1-A**
**Matrix: Solid**
**Analysis Batch: 386903**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dibutyltin | ND | | 3.0 | 1.3 | ug/Kg | | 11/21/23 17:35 | 11/27/23 14:38 | 1 |
| Monobutyltin | ND | | 3.0 | 0.54 | ug/Kg | | 11/21/23 17:35 | 11/27/23 14:38 | 1 |
| Tetrabutyltin | ND | | 3.0 | 1.6 | ug/Kg | | 11/21/23 17:35 | 11/27/23 14:38 | 1 |
| Tributyltin | ND | | 3.0 | 1.4 | ug/Kg | | 11/21/23 17:35 | 11/27/23 14:38 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tripentyltin* | *31* | *S1-* | *39 - 150* | *11/21/23 17:35* | *11/27/23 14:38* | *1* |

**Lab Sample ID: MB 570-386121/1-A**
**Matrix: Solid**
**Analysis Batch: 387328**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dibutyltin | 1.873 | J | 3.0 | 1.3 | ug/Kg | | 11/21/23 17:35 | 11/28/23 10:58 | 1 |
| Monobutyltin | 0.6596 | J | 3.0 | 0.54 | ug/Kg | | 11/21/23 17:35 | 11/28/23 10:58 | 1 |
| Tetrabutyltin | ND | | 3.0 | 1.6 | ug/Kg | | 11/21/23 17:35 | 11/28/23 10:58 | 1 |
| Tributyltin | ND | | 3.0 | 1.4 | ug/Kg | | 11/21/23 17:35 | 11/28/23 10:58 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Tripentyltin* | *78* | | *39 - 150* | *11/21/23 17:35* | *11/28/23 10:58* | *1* |

**Lab Sample ID: LCS 570-386121/2-A**
**Matrix: Solid**
**Analysis Batch: 386903**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrabutyltin | | | 20.0 | 13.18 | | ug/Kg | | 66 | 10 - 153 | | |
| Tributyltin | | | 17.8 | 13.16 | | ug/Kg | | 74 | 10 - 126 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *Tripentyltin* | *55* | | *39 - 150* |

**Lab Sample ID: LCSD 570-386121/3-A**
**Matrix: Solid**
**Analysis Batch: 386903**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrabutyltin | | | 20.0 | 13.32 | | ug/Kg | | 67 | 10 - 153 | 1 | 30 |
| Tributyltin | | | 17.8 | 13.20 | | ug/Kg | | 74 | 10 - 126 | 0 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *Tripentyltin* | *54* | | *39 - 150* |

## Method: Organotins SIM - Organotins (GC/MS SIM) (Continued)

**Lab Sample ID: 570-161346-1 MS**
**Matrix: Solid**
**Analysis Batch: 386903**

**Client Sample ID: 01TB-TERMINAL**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Tetrabutyltin | ND | | 29.9 | 29.93 | | ug/Kg | ☼ | 100 | 10 - 140 |
| Tributyltin | ND | | 26.6 | 21.39 | | ug/Kg | ☼ | 80 | 10 - 135 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *Tripentyltin* | *65* | | *39 - 150* |

**Lab Sample ID: 570-161346-1 MSD**
**Matrix: Solid**
**Analysis Batch: 386903**

**Client Sample ID: 01TB-TERMINAL**
**Prep Type: Total/NA**
**Prep Batch: 386121**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrabutyltin | ND | | 29.9 | 32.07 | | ug/Kg | ☼ | 107 | 10 - 140 | 7 | 40 |
| Tributyltin | ND | | 26.7 | 23.19 | | ug/Kg | ☼ | 87 | 10 - 135 | 8 | 40 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *Tripentyltin* | *72* | | *39 - 150* |

# QC Association Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## GC/MS Semi VOA

### Prep Batch: 386121

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 570-161346-1 | 01TB-TERMINAL | Total/NA | Solid | Organotin Prep | |
| 570-161346-2 | 01TB-BELOW-35 MLLW | Total/NA | Solid | Organotin Prep | |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | Total/NA | Solid | Organotin Prep | |
| MB 570-386121/1-A | Method Blank | Total/NA | Solid | Organotin Prep | |
| LCS 570-386121/2-A | Lab Control Sample | Total/NA | Solid | Organotin Prep | |
| LCSD 570-386121/3-A | Lab Control Sample Dup | Total/NA | Solid | Organotin Prep | |
| 570-161346-1 MS | 01TB-TERMINAL | Total/NA | Solid | Organotin Prep | |
| 570-161346-1 MSD | 01TB-TERMINAL | Total/NA | Solid | Organotin Prep | |

### Analysis Batch: 386903

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 570-161346-1 | 01TB-TERMINAL | Total/NA | Solid | Organotins SIM | 386121 |
| 570-161346-2 | 01TB-BELOW-35 MLLW | Total/NA | Solid | Organotins SIM | 386121 |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | Total/NA | Solid | Organotins SIM | 386121 |
| MB 570-386121/1-A | Method Blank | Total/NA | Solid | Organotins SIM | 386121 |
| LCS 570-386121/2-A | Lab Control Sample | Total/NA | Solid | Organotins SIM | 386121 |
| LCSD 570-386121/3-A | Lab Control Sample Dup | Total/NA | Solid | Organotins SIM | 386121 |
| 570-161346-1 MS | 01TB-TERMINAL | Total/NA | Solid | Organotins SIM | 386121 |
| 570-161346-1 MSD | 01TB-TERMINAL | Total/NA | Solid | Organotins SIM | 386121 |

### Analysis Batch: 387328

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 570-386121/1-A | Method Blank | Total/NA | Solid | Organotins SIM | 386121 |

## General Chemistry

### Analysis Batch: 385447

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 570-161346-1 | 01TB-TERMINAL | Total/NA | Solid | Homogenization | |
| 570-161346-2 | 01TB-BELOW-35 MLLW | Total/NA | Solid | Homogenization | |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | Total/NA | Solid | Homogenization | |

### Analysis Batch: 386844

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 570-161346-1 | 01TB-TERMINAL | Total/NA | Solid | Moisture | |
| 570-161346-2 | 01TB-BELOW-35 MLLW | Total/NA | Solid | Moisture | |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | Total/NA | Solid | Moisture | |

# Lab Chronicle

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## Client Sample ID: 01TB-TERMINAL — Lab Sample ID: 570-161346-1

**Date Collected: 11/09/23 15:13**
**Date Received: 11/17/23 09:40**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | Organotin Prep | | | 20.61 g | 2 mL | 386121 | 11/21/23 17:35 | UWEZ | EET CAL 4 |
| Total/NA | Analysis | Organotins SIM | | 1 | 1 mL | 1 mL | 386903 | 11/27/23 16:10 | ULLI | EET CAL 4 |
| | Instrument ID: | GCMSY | | | | | | | | |
| Total/NA | Analysis | Homogenization | | 1 | | | 385447 | 11/20/23 11:17 | KZX6 | EET CAL 4 |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Analysis | Moisture | | 1 | | | 386844 | 11/22/23 10:04 | B4QL | EET CAL 4 |
| | Instrument ID: | MOI4 | | | | | | | | |

## Client Sample ID: 01TB-BELOW-35 MLLW — Lab Sample ID: 570-161346-2

**Date Collected: 11/09/23 15:30**
**Date Received: 11/17/23 09:40**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | Organotin Prep | | | 20.06 g | 2 mL | 386121 | 11/21/23 17:35 | UWEZ | EET CAL 4 |
| Total/NA | Analysis | Organotins SIM | | 1 | 1 mL | 1 mL | 386903 | 11/27/23 16:28 | ULLI | EET CAL 4 |
| | Instrument ID: | GCMSY | | | | | | | | |
| Total/NA | Analysis | Homogenization | | 1 | | | 385447 | 11/20/23 11:17 | KZX6 | EET CAL 4 |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Analysis | Moisture | | 1 | | | 386844 | 11/22/23 10:04 | B4QL | EET CAL 4 |
| | Instrument ID: | MOI4 | | | | | | | | |

## Client Sample ID: 01TB-SURFACE TO-35 MLLW — Lab Sample ID: 570-161346-3

**Date Collected: 11/09/23 16:25**
**Date Received: 11/17/23 09:40**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | Organotin Prep | | | 20.71 g | 2 mL | 386121 | 11/21/23 17:35 | UWEZ | EET CAL 4 |
| Total/NA | Analysis | Organotins SIM | | 1 | 1 mL | 1 mL | 386903 | 11/27/23 16:46 | ULLI | EET CAL 4 |
| | Instrument ID: | GCMSY | | | | | | | | |
| Total/NA | Analysis | Homogenization | | 1 | | | 385447 | 11/20/23 11:17 | KZX6 | EET CAL 4 |
| | Instrument ID: | NOEQUIP | | | | | | | | |
| Total/NA | Analysis | Moisture | | 1 | | | 386844 | 11/22/23 10:04 | B4QL | EET CAL 4 |
| | Instrument ID: | MOI4 | | | | | | | | |

**Laboratory References:**
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

# Accreditation/Certification Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

## Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| California | State | 3082 | 07-31-24 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| Homogenization | | Solid | Sample Homogenized |
| Moisture | | Solid | Percent Moisture |
| Organotins SIM | Organotin Prep | Solid | Dibutyltin |
| Organotins SIM | Organotin Prep | Solid | Monobutyltin |
| Organotins SIM | Organotin Prep | Solid | Tetrabutyltin |
| Organotins SIM | Organotin Prep | Solid | Tributyltin |

| | | | |
|---|---|---|---|
| Oregon | NELAP | 4175 | 02-02-24 |

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| Homogenization | | Solid | Sample Homogenized |

# Method Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| Organotins SIM | Organotins (GC/MS SIM) | Lab SOP | EET CAL 4 |
| Homogenization | Homogenization | None | EET CAL 4 |
| Moisture | Percent Moisture | EPA | EET CAL 4 |
| Organotin Prep | Extraction (Organotins) | None | EET CAL 4 |

**Protocol References:**

EPA = US Environmental Protection Agency
Lab SOP = Laboratory Standard Operating Procedure
None = None

**Laboratory References:**

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

# Sample Summary

Client: SGS North America, Inc
Project/Site: Tributyltin in Sediments

Job ID: 570-161346-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 570-161346-1 | 01TB-TERMINAL | Solid | 11/09/23 15:13 | 11/17/23 09:40 |
| 570-161346-2 | 01TB-BELOW-35 MLLW | Solid | 11/09/23 15:30 | 11/17/23 09:40 |
| 570-161346-3 | 01TB-SURFACE TO-35 MLLW | Solid | 11/09/23 16:25 | 11/17/23 09:40 |

XGW4

Loc: 570
161346

# CHAIN OF CUSTODY

"SGS North America Inc. - Orlando
4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com/ehsusa"



| FED-EX Tracking # | Bottle Order Control # |
|---|---|
| SGS Quote # | SGS Job # FC11168XE |

**Client / Reporting Information**

Company Name: SGS North America Inc.
Street Address: 4405 Vineland Rd, Suite C-15
City: Orlando State: FL Zip: 3281
Project Contact: Elvin.Kumar@sgs.com E-mail:
Phone #: 408-612-9410 Fax #:
Sampler(s) Name(s): ED Phone:

**Project Information**

Project Name: FC11168XE / Oakland Harbor
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Elvin Kumar
Billing Information ( if different from Report to)
Company Name: SGS North America Inc.
Street Address: 201 Route 17 North, 7th Floor
City: Rutherford, New Jersey 07070 State: Zip:
Attention: Elvin Kumar (Email Invoice)

Requested Analysis ( see TEST CODE sheet)

Matrix Codes: DW - Drinking Wa; GW - Ground Wat; WW - Water; SW - Surface Wa; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liqui; AIR - Air; SOL - Other Soli; WP - Wipe; FB-Field Blank; EB-Equipment Bla; RB- Rinse Blank; TB-Trip Blank

| SGS Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | Organotins/Tributyltin in Sediments | %MOISTURE (Report Data on Dry Weight Basis) | Standard EDD in Excel and EQUIS Format | Quote 57017554 | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1XE | 01TB-TERMINAL 1 | | 11/9/23 | 3:13:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |
| 2XE | 01TB-BELOW-35 MLLW 2 | | 11/9/23 | 3:30:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |
| 11XE | 01TB-SURFACE TO-35 MLLW 3 | | 11/9/23 | 4:25:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |

570-161346 Chain of Custody

**Turnaround Time ( Business days)**

Approved By (SGS PM): / Date:

- ☐ Std. 10 Business Days
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☒ other Standard TAT

Emergency & Rush T/A data available VIA Lablink

**Data Deliverable Information**

- ☐ Commercial "A" (Level 1)
- ☒ Commercial "B" ( Level 2)
- ☐ FULLT1 ( Level 3+4 )
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C" X COMMBN
- ☐ TRRP
- ☒ EDD Format
- ☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

**Comments / Special Instructions**

Sub to:
**Eurofins Environment Testing Southwest, LLC**
2841 Dow Ave, Suite 100, Tustin, CA 92780
Attention: Janice Hsu Phone: 714-895-5494

XC-S: 1.8/1.7 542

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|
| 11/16/23 | 1600 | 1 EL 11/17/23 0940 | 2 | | 2 |
| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
| | | 3 | 4 | | 4 |
| Relinquished by: | Date Time: | Received By: | Custody Seal # ☐ Intact | Preserved where applicable | On Ice Cooler Temp |



1/10/2024 (Rev. 1)

ORIGI
SAMPL
SGS N
4405 \
STE C
ORLAN
-UNITE

TES

TE: 16NOV23
GT: 25.00 LB MAN
: 0358759/CAFE3755

L SENDER

TO JA E HS
EU FINS EN OUTHWEST
2841 DOW AVE, SU 00

TUSTIN CA 92780
(714) 895-5494
REF: SUBS – EUROFINS

FedEx Express

TRK# 0201 7024 6623 2497

FRI – 17 NOV 10:30A
PRIORITY OVERNIGHT

NW DTHA

92780
CA-US SNA

Part # 156148-434 MTW EXP 06/24

570-161346 Waybill

# Login Sample Receipt Checklist

Client: SGS North America, Inc

Job Number: 570-161346-1

**Login Number: 161346**
**List Number: 1**
**Creator: Hsu, Janice**

**List Source: Eurofins Calscience**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

## Misc. Forms

### Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# SGS North America Inc - Orlando

## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC11168

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

**Client / Reporting Information**

Company Name: Geosyntec Consultants
Address: 920 SW 6th Ave, Suite 600
City: Portland State: OR Zip: 97204
Project Contact: Erin Dunbar Email: edunbar@geosyntec.com
Phone #: 971-271-5916
Sampler(s) Name(s) (Printed)
Sampler 1: Erin Dunbar Sampler 2: Megan Ogburn

**Project Information**

Project Name: Oakland Harbor
Street
City: Oakland State: CA
Project #: PNG1060
Fax #
Client Purchase Order # 1000539162

**Analytical Information**

| SGS Orlando Sample # | Field ID / Point of Collection | Collection Date | Time | Sampled By: | Matrix | Total # of Bottles | Other | None | HCl | NaOH | HNO3 | H2SO4 | NaOH+ZnAc | DI WATER | MEOH | PAHs 8270 | Pesticides 8081 | PCBs Congeners 8082/1668 | TOC 9060 | Dioxin/Furan 1613 | Butyltins Krone 1988 | Grain Size D422 | Metals 6020/7471 | Solids 2540 | Archive | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OITB - Terminal | 11/9/23 | 1513 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 2 | OITB - Below -35 MLLW | 11/9/23 | 1530 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 3 | Archive-02 | 11/9/23 | 1552 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 4 | Archive-03 | 11/9/23 | 1556 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 5 | Archive-04 | 11/9/23 | 1559 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 6 | Archive-01 | 11/9/23 | 1606 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 7 | Archive-08 | 11/9/23 | 1609 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 8 | Archive-05A | 11/9/23 | 1611 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 9 | Archive-07 | 11/9/23 | 1618 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 10 | Archive-05 | 11/9/23 | 1622 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 11 | OITB - Surface to -35 MLLW | 11/9/23 | 1625 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |

INITIAL ASSESSMENT
LABEL VERIFICATION AK

**Matrix Codes**: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

**Turnaround Time ( Business days)**

- 10 Day (Business)
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Approved By: / Date:

Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

Metals include: As, Cr, Cd, Cu, Pb, Ni, Se, Ag, Zn, Hg

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|
| 1 Erin Dunbar Geosyntec | 11/10/23 1151 | 2 to FedEx | 3 | | 4 1000 11/11/23 |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
| 5 | | 6 | 7 | | 8 |

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.6 IR1

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FC11168XE: Chain of Custody
Page 1 of 2

# SGS Sample Receipt Summary

**Job Number:** fc11168 **Client:** Geosyntec Consultants **Project:** Oakland Harbor

**Date / Time Received:** 11/11/2023 10:00:00 AM **Delivery Method:** FedEx **Airbill #'s:** 786219631416

**Cooler Temps (Raw Measured) °C:** Cooler 1: (4.6);

**Cooler Temps (Corrected) °C:** Cooler 1: (5.0);

| Cooler Informatio | Y | or | N |
|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ |
| 3. Temp criteria achieved: | ☑ | | ☐ |
| 4. Cooler temp verification: | | IR Gun | |
| 5. Cooler media: | | Ice (Bag) | |

| Trip Blank Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |

| | W | or | S | N/A |
|---|---|---|---|---|
| 3. Type of TB Received | ☐ | | ☐ | ☑ |

| Sample Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ | |
| 2. Samples presented properly | ☑ | | ☐ | |
| 3. Suffiient volume/containers recv'd for analysi | ☑ | | ☐ | |
| 4. Condition of sample: | Intact | | | |
| 5. Sample recv'd within HT | ☑ | | ☐ | |
| 6. Dates/Times/IDs on COC match sample labe | ☑ | | ☐ | |
| 7. VOCs have headspace | ☐ | | ☐ | ☑ |
| 8. Bottles received for unspecified tests | ☐ | | ☑ | |
| 9. Compositing instructions clear | ☐ | | ☐ | ☑ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | | ☐ | ☑ |
| 11. % Solids Jar Received? | ☑ | | ☐ | ☐ |
| 12. Residual Chlorine Present? | ☐ | | ☐ | ☑ |

**Misc Information**

Number of Encores: 25 Gram 5 Gram Number of Lab Filtered Metals

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot _____

Comments

SM001
Rev. Date 05/04/17

Technician: DONM Date: 11/11/2023 3:46:04 PM Reviewer: ZD Date: 11/11/2023

**FC11168XE: Chain of Custody**
**Page 2 of 2**

The results set forth herein are provided by SGS North America Inc.

*e-Hardcopy 2.0*
*Automated Report*

# Technical Report for

## Geosyntec Consultants - Portland, OR

Oakland Harbor

PNG1060

SGS Job Number: FC11168XW

Sampling Date: 11/09/23

Report to:

Geosyntec Consultants - Portland, OR
920 SW 6th Ave Suite 600
Portland, OR 97204
edunbar@geosyntec.com

ATTN: Erin Dunbar

Total number of pages in report: 40

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.



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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

# Table of Contents

-1-

**Section 1: Sample Summary** ..... **3**
**Section 2: Subcontract Lab Data** ..... **4**
**Section 3: Misc. Forms** ..... **38**
**3.1:** Chain of Custody ..... 39

SGS North America Inc.

# Sample Summary

Geosyntec Consultants - Portland, OR

**Job No:** FC11168XW

Oakland Harbor
Project No: PNG1060

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FC11168-1XW | 11/09/23 | 15:13 | ED | 11/11/23 | SO | Sediment | 01TB-TERMINAL |
| FC11168-2XW | 11/09/23 | 15:30 | ED | 11/11/23 | SO | Sediment | 01TB-BELOW-35 MLLW |
| FC11168-11XW | 11/09/23 | 16:25 | ED | 11/11/23 | SO | Sediment | 01TB-SURFACE TO-35 MLLW |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Subcontract Lab Data

Report of Analysis

# FINAL LAB REPORT

Prepared by

## SGS NORTH AMERICA

Prepared for

*This report is approved by*

---

**PROJECT INFORMATION SUMMARY** *(When applicable, see QC Annotations for details)*

| | |
|---|---|
| Client Project | |
| SGS Project # | |
| Analytical Protocol(s) | |
| No. Samples Submitted | |
| Additional QC Sample(s) | |
| No. Laboratory Method Blanks | |
| No. OPRs / Batch CS3 | |
| Date Received | |
| Condition Received | |
| Temperature upon Receipt (ºC) | |
| Extraction within Holding Time | |
| Analysis within Holding Time | |

## QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

## APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

| | |
|---|---|
| **B** | The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample. |
| **C** | Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter. |
| **E** | The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value. |
| **EMPC** | Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference. |
| **H/h** | If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned. |
| **J** | Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value. |
| **ND** | Indicates a non-detect. |
| **NR or R** | Indicates a value that is not reportable. |
| **PR** | Due to interference, the associated congener is poorly resolved. |
| **QI** | Indicates the presence of a quantitative interference. |
| **SI** | Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates. |
| **U** | The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte. |
| **V** | The labeled standard recovery was found to be outside of the method control limits. |

## APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

| | |
|---|---|
| **J** | The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL). |
| **U** | The analyte was not detected in the sample at the estimated detection limit (EDL). |
| **E** | The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve). |
| **D** | Dilution Data. Result was obtained from the analysis of a dilution. |
| **B** | Analyte found in the sample and associated method blank. |
| **C** | Co-eluting congener |
| **Cxx** | Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener. |
| **NR** | Analyte is not reportable because of problems in sample preparation or analysis. |
| **V** | Labeled standard recovery is not within method control limits. |
| **X** | Results from re-injection/repeat/second-column analysis. |
| **EMPC** | Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio. |

## APPENDIX C: LAB IDENTIFIERS

| | |
|---|---|
| **AR** | Indicates use of the archived portion of the sample extract. |
| **CU** | Indicates a sample that required additional clean-up prior to MS injection/processing. |
| **D** | Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor. |
| **DE** | Indicates a dilution performed with the addition of ES (extraction standard) solution. |
| **DUP** | Designation for a duplicate sample. |
| **MS** | Designation for a matrix spike. |
| **MSD** | Designation for a matrix spike duplicate. |
| **RJ** | Indicates a reinjection of the sample extract. |
| **S** | Indicates a sample split. The number that follows the "S" indicates the split factor. |

## SGS CERTIFICATIONS / APPROVALS / PERMITS

| | |
|---|---|
| Alaska DEC LAP | 17-012 |
| Alaska DEC LCP | NC00919 |
| Arkansas | 88-0682 |
| California (ELAP) | ELAP Cert #2914 |
| CLIA | 34D1013708 |
| Colorado | NC00919 |
| Connecticut | PH-0258 |
| USDA Soil Permit | P330-20-00103 |
| American Association for Laboratory Accreditation (A2LA) | 2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.4) |
| Florida DOH | E87634 |
| Hawaii DOH | Approval |
| Louisiana DEQ | 4115 |
| Louisiana DOH | LA031 |
| Maine | 2020020 |
| Massachusetts | M-NC919 |
| Michigan | 9950 |
| Minnesota (Primary NELAP For Method 23) | 037-999-459 |
| Montana | 0106 |
| New Hampshire (Secondary NELAP) | 2083 |
| New Jersey | NC100 |
| New York | 11685 |
| North Carolina DEQ | 481 |
| Ohio | 87785 |
| Oklahoma | 2205 |
| Oregon | NC200002 |
| Pennsylvania | 68-03675 |
| South Carolina | 99029002 |
| Texas | T104704260 |
| UCMR 5 | NC00919 |
| US Coast Guard | 16714/159.317/SGS |
| U.S. Fish and Wildlife Service | A22801 |
| Vermont | VT-87634 |
| Virginia | 460214 |
| Washington | C913 |

# Sample ID: 01TB-TERMINAL — Method 1613B

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Project ID: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.12 g | Lab Sample ID | B8803_20707_DF_001 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid: | 58.3 % | QC Batch No: | 20707 | Date Analyzed: | 19-Dec-2023 |
| | | Split: | - | Dilution: | - | Time Analyzed: | 12:44:44 |

| Analyte | Conc. (pg/g) | DL (pg/g) | EMPC (pg/g) | Qualifiers | Standard | ES Recoveries | Qualifiers |
|---|---|---|---|---|---|---|---|
| 2378-TCDD | 0.317 | | | J | ES 2378-TCDD | 92.5 | |
| 12378-PeCDD | 1.09 | | | J | ES 12378-PeCDD | 92.9 | |
| 123478-HxCDD | 1.19 | | | J B | ES 123478-HxCDD | 85.1 | |
| 123678-HxCDD | 2.41 | | | J | ES 123678-HxCDD | 90.2 | |
| 123789-HxCDD | EMPC | | 2.35 | J | ES 123789-HxCDD | 85.6 | |
| 1234678-HpCDD | 56.1 | | | | ES 1234678-HpCDD | 79.2 | |
| OCDD | 580 | | | | ES OCDD | 87.1 | |
| | | | | | | | |
| 2378-TCDF | 1.14 | | | | ES 2378-TCDF | 95.2 | |
| 12378-PeCDF | 0.526 | | | J | ES 12378-PeCDF | 98.1 | |
| 23478-PeCDF | EMPC | | 1.36 | J | ES 23478-PeCDF | 96.2 | |
| 123478-HxCDF | 1.02 | | | J B | ES 123478-HxCDF | 98.6 | |
| 123678-HxCDF | 0.985 | | | J B | ES 123678-HxCDF | 98.6 | |
| 234678-HxCDF | 1.34 | | | J B | ES 234678-HxCDF | 98.8 | |
| 123789-HxCDF | ND | 0.211 | | | ES 123789-HxCDF | 90.7 | |
| 1234678-HpCDF | 12.7 | | | | ES 1234678-HpCDF | 88.1 | |
| 1234789-HpCDF | EMPC | | 0.65 | J B | ES 1234789-HpCDF | 83.4 | |
| OCDF | 27 | | | | ES OCDF | 92.1 | |
| **Totals** | | | | | **Standard** | **CS Recoveries** | |
| | | | | | CS 37Cl-2378-TCDD | 91.1 | |
| Total TCDD | 1.7 | | 1.7 | | | | |
| Total PeCDD | 2.46 | | 5.93 | | | | |
| Total HxCDD | 27.4 | | 30.3 | | | | |
| Total HpCDD | 150 | | 150 | | | | |
| | | | | | | | |
| Total TCDF | 8.71 | | 11.5 | | | | |
| Total PeCDF | 11.8 | | 14 | | | | |
| Total HxCDF | 20.6 | | 21.1 | | | | |
| Total HpCDF | 31.2 | | 31.9 | | | | |
| **Total PCDD/Fs** | **860** | | **873** | | | | |
| **ITEF TEQs** | | | | | | | |
| TEQ: ND=0 | 2.99 | | 3.91 | | | | |
| TEQ: ND=DL/2 | 3 | 0.29 | 3.92 | | | | |
| TEQ: ND=DL | 3.01 | 0.581 | 3.93 | | | | |

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# Sample ID: 01TB-TERMINAL — TEQ Summary — Method 1613B

| | | | | | |
|---|---|---|---|---|---|
| Client Project Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Sample ID: | B8803_20707_DF_001 |
| Cliend Project ID: | FC11168XW | Weight/Volume: | 10.12 g | QC Batch No.: | 20707 |
| Date Collected: | 09-Nov-2023 | Split: | - | Date Extracted: | 04-Dec-2023 |
| Date Received: | 17-Nov-2023 | Dilution: | - | Date Analyzed: | 19-Dec-2023 12:44 |
| Lab Project No: | B8803 | Units | pg/g | | |

| Analyte | Result | Qualifiers | DLs | I-TEQ | WHO-1998 | WHO-2005 |
|---|---|---|---|---|---|---|
| 2378-TCDD | 0.317 | J | 0.192 | 0.317 | 0.317 | 0.317 |
| 12378-PeCDD | 1.09 | J | 0.193 | 0.543 | 1.09 | 1.09 |
| 123478-HxCDD | 1.19 | J B | 0.325 | 0.119 | 0.119 | 0.119 |
| 123678-HxCDD | 2.41 | J | 0.316 | 0.241 | 0.241 | 0.241 |
| 123789-HxCDD | [2.35] | J | 0.309 | [0.235] | [0.235] | [0.235] |
| 1234678-HpCDD | 56.1 | | 0.382 | 0.561 | 0.561 | 0.561 |
| OCDD | 580 | | 0.291 | 0.58 | 0.058 | 0.174 |
| | | | | | | |
| 2378-TCDF | 1.14 | | 0.112 | 0.114 | 0.114 | 0.114 |
| 12378-PeCDF | 0.526 | J | 0.182 | 0.0263 | 0.0263 | 0.0158 |
| 23478-PeCDF | [1.36] | J | 0.188 | [0.682] | [0.682] | [0.409] |
| 123478-HxCDF | 1.02 | J B | 0.18 | 0.102 | 0.102 | 0.102 |
| 123678-HxCDF | 0.985 | J B | 0.169 | 0.0985 | 0.0985 | 0.0985 |
| 234678-HxCDF | 1.34 | J B | 0.198 | 0.134 | 0.134 | 0.134 |
| 123789-HxCDF | (0.211) | | 0.211 | (0.0211) | (0.0211) | (0.0211) |
| 1234678-HpCDF | 12.7 | | 0.16 | 0.127 | 0.127 | 0.127 |
| 1234789-HpCDF | [0.65] | J B | 0.196 | [0.0065] | [0.0065] | [0.0065] |
| OCDF | 27 | | 0.256 | 0.027 | 0.0027 | 0.0081 |

| TEQ Summaries | | | |
|---|---|---|---|
| EMPC = 0, ND = 0 | 2.99 | 2.99 | 3.1 |
| EMPC = 0, ND = DL / 2 | 3 | 3 | 3.11 |
| EMPC = 0, ND = DL | 3.01 | 3.01 | 3.12 |
| EMPC = 0, < J-level = 0 | 1.41 | 0.863 | 0.985 |
| | | | |
| EMPC = EMPC, ND = 0 | 3.91 | 3.91 | 3.75 |
| EMPC = EMPC, ND = DL / 2 | 3.92 | 3.92 | 3.76 |
| EMPC = EMPC, ND = DL | 3.93 | 3.93 | 3.77 |
| EMPC = EMPC, < J-level = 0 | 1.41 | 0.863 | 0.985 |

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# Sample ID: 01TB-BELOW-35 MLLW — Method 1613B

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Project ID: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.35 g | Lab Sample ID | B8803_20707_DF_002 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid: | 53.4 % | QC Batch No: | 20707 | Date Analyzed: | 19-Dec-2023 |
| | | Split: | - | Dilution: | - | Time Analyzed: | 13:31:16 |

| Analyte | Conc. (pg/g) | DL (pg/g) | EMPC (pg/g) | Qualifiers | Standard | ES Recoveries | Qualifiers |
|---|---|---|---|---|---|---|---|
| 2378-TCDD | 1.04 | | | | ES 2378-TCDD | 84.9 | |
| 12378-PeCDD | 3.16 | | | | ES 12378-PeCDD | 87.5 | |
| 123478-HxCDD | 6.1 | | | | ES 123478-HxCDD | 79.5 | |
| 123678-HxCDD | 16.1 | | | | ES 123678-HxCDD | 62.5 | |
| 123789-HxCDD | 9.22 | | | | ES 123789-HxCDD | 73.9 | |
| 1234678-HpCDD | 312 | | | | ES 1234678-HpCDD | 82.6 | |
| OCDD | 2,270 | | | | ES OCDD | 96.4 | |
| | | | | | | | |
| 2378-TCDF | 4.62 | | | | ES 2378-TCDF | 84.9 | |
| 12378-PeCDF | 2.57 | | | | ES 12378-PeCDF | 92.7 | |
| 23478-PeCDF | 9.3 | | | | ES 23478-PeCDF | 88.2 | |
| 123478-HxCDF | 5.37 | | | | ES 123478-HxCDF | 90.9 | |
| 123678-HxCDF | 5.63 | | | | ES 123678-HxCDF | 91.3 | |
| 234678-HxCDF | 10.8 | | | | ES 234678-HxCDF | 55.1 | |
| 123789-HxCDF | 1.57 | | | J B | ES 123789-HxCDF | 55.8 | |
| 1234678-HpCDF | 59.2 | | | | ES 1234678-HpCDF | 92.8 | |
| 1234789-HpCDF | 4.15 | | | | ES 1234789-HpCDF | 92.8 | |
| OCDF | 131 | | | | ES OCDF | 98.4 | |
| **Totals** | | | | | **Standard** | **CS Recoveries** | |
| | | | | | CS 37Cl-2378-TCDD | 86.6 | |
| Total TCDD | 7.99 | | 12 | | | | |
| Total PeCDD | 24.7 | | 27.2 | | | | |
| Total HxCDD | 212 | | 212 | | | | |
| Total HpCDD | 958 | | 958 | | | | |
| | | | | | | | |
| Total TCDF | 64 | | 68.4 | | | | |
| Total PeCDF | 126 | | 127 | | | | |
| Total HxCDF | 192 | | 192 | | | | |
| Total HpCDF | 169 | | 169 | | | | |
| **Total PCDD/Fs** | **4,150** | | **4,170** | | | | |
| **ITEF TEQs** | | | | | | | |
| TEQ: ND=0 | 19.5 | | 19.5 | | | | |
| TEQ: ND=DL/2 | 19.5 | 0.319 | 19.5 | | | | |
| TEQ: ND=DL | 19.5 | 0.637 | 19.5 | | | | |

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# Sample ID: 01TB-BELOW-35 MLLW — TEQ Summary — Method 1613B

| | | | | | |
|---|---|---|---|---|---|
| Client Project Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Sample ID: | B8803_20707_DF_002 |
| Cliend Project ID: | FC11168XW | Weight/Volume: | 10.35 g | QC Batch No.: | 20707 |
| Date Collected: | 09-Nov-2023 | Split: | - | Date Extracted: | 04-Dec-2023 |
| Date Received: | 17-Nov-2023 | Dilution: | - | Date Analyzed: | 19-Dec-2023 13:31 |
| Lab Project No: | B8803 | Units | pg/g | | |

| Analyte | Result | Qualifiers | DLs | I-TEQ | WHO-1998 | WHO-2005 |
|---|---|---|---|---|---|---|
| 2378-TCDD | 1.04 | | 0.164 | 1.04 | 1.04 | 1.04 |
| 12378-PeCDD | 3.16 | | 0.234 | 1.58 | 3.16 | 3.16 |
| 123478-HxCDD | 6.1 | | 0.478 | 0.61 | 0.61 | 0.61 |
| 123678-HxCDD | 16.1 | | 0.571 | 1.61 | 1.61 | 1.61 |
| 123789-HxCDD | 9.22 | | 0.295 | 0.922 | 0.922 | 0.922 |
| 1234678-HpCDD | 312 | | 0.246 | 3.12 | 3.12 | 3.12 |
| OCDD | 2270 | | 0.322 | 2.27 | 0.227 | 0.681 |
| | | | | | | |
| 2378-TCDF | 4.62 | | 0.111 | 0.462 | 0.462 | 0.462 |
| 12378-PeCDF | 2.57 | | 0.153 | 0.129 | 0.129 | 0.0771 |
| 23478-PeCDF | 9.3 | | 0.172 | 4.65 | 4.65 | 2.79 |
| 123478-HxCDF | 5.37 | | 0.252 | 0.537 | 0.537 | 0.537 |
| 123678-HxCDF | 5.63 | | 0.257 | 0.563 | 0.563 | 0.563 |
| 234678-HxCDF | 10.8 | | 0.406 | 1.08 | 1.08 | 1.08 |
| 123789-HxCDF | 1.57 | J B | 0.211 | 0.157 | 0.157 | 0.157 |
| 1234678-HpCDF | 59.2 | | 0.0955 | 0.592 | 0.592 | 0.592 |
| 1234789-HpCDF | 4.15 | | 0.128 | 0.0415 | 0.0415 | 0.0415 |
| OCDF | 131 | | 0.186 | 0.131 | 0.0131 | 0.0392 |
| | | **TEQ Summaries** | | | | |
| | | EMPC = 0, ND = 0 | | 19.5 | 18.9 | 17.5 |
| | | EMPC = 0, ND = DL / 2 | | 19.5 | 18.9 | 17.5 |
| | | EMPC = 0, ND = DL | | 19.5 | 18.9 | 17.5 |
| | | EMPC = 0, < J-level = 0 | | 19.3 | 18.8 | 17.3 |
| | | | | | | |
| | | EMPC = EMPC, ND = 0 | | 19.5 | 18.9 | 17.5 |
| | | EMPC = EMPC, ND = DL / 2 | | 19.5 | 18.9 | 17.5 |
| | | EMPC = EMPC, ND = DL | | 19.5 | 18.9 | 17.5 |
| | | EMPC = EMPC, < J-level = 0 | | 19.3 | 18.8 | 17.3 |

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# Sample ID: 01TB-SURFACE TO-35 MLLW — Method 1613B

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Project ID: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.16 g | Lab Sample ID | B8803_20707_DF_003 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid: | 53.4 % | QC Batch No: | 20707 | Date Analyzed: | 19-Dec-2023 |
| | | Split: | - | Dilution: | - | Time Analyzed: | 14:17:48 |

| Analyte | Conc. (pg/g) | DL (pg/g) | EMPC (pg/g) | Qualifiers | Standard | ES Recoveries | Qualifiers |
|---|---|---|---|---|---|---|---|
| 2378-TCDD | 0.409 | | | J | ES 2378-TCDD | 87.8 | |
| 12378-PeCDD | 1.53 | | | J | ES 12378-PeCDD | 90.5 | |
| 123478-HxCDD | EMPC | | 2.04 | J B | ES 123478-HxCDD | 85.1 | |
| 123678-HxCDD | 7.59 | | | | ES 123678-HxCDD | 85.6 | |
| 123789-HxCDD | 4.62 | | | | ES 123789-HxCDD | 87.3 | |
| 1234678-HpCDD | 162 | | | | ES 1234678-HpCDD | 87.4 | |
| OCDD | 1,240 | | | | ES OCDD | 99.5 | |
| | | | | | | | |
| 2378-TCDF | EMPC | | 2.06 | | ES 2378-TCDF | 88 | |
| 12378-PeCDF | 1.36 | | | J | ES 12378-PeCDF | 92.6 | |
| 23478-PeCDF | 3.89 | | | | ES 23478-PeCDF | 89.1 | |
| 123478-HxCDF | 2.7 | | | | ES 123478-HxCDF | 96.6 | |
| 123678-HxCDF | 2.32 | | | J | ES 123678-HxCDF | 98.4 | |
| 234678-HxCDF | 3.85 | | | | ES 234678-HxCDF | 96.8 | |
| 123789-HxCDF | 0.745 | | | J B | ES 123789-HxCDF | 98 | |
| 1234678-HpCDF | 32.3 | | | | ES 1234678-HpCDF | 96.7 | |
| 1234789-HpCDF | 2.28 | | | J | ES 1234789-HpCDF | 99.4 | |
| OCDF | 89.4 | | | | ES OCDF | 105 | |
| **Totals** | | | | | **Standard** | **CS Recoveries** | |
| | | | | | CS 37Cl-2378-TCDD | 90.6 | |
| Total TCDD | 4.39 | | 5.72 | | | | |
| Total PeCDD | 8.92 | | 14.2 | | | | |
| Total HxCDD | 89.7 | | 91.7 | | | | |
| Total HpCDD | 479 | | 479 | | | | |
| | | | | | | | |
| Total TCDF | 17.1 | | 26.7 | | | | |
| Total PeCDF | 45 | | 46 | | | | |
| Total HxCDF | 57.9 | | 59 | | | | |
| Total HpCDF | 92.1 | | 92.1 | | | | |
| **Total PCDD/Fs** | **2,120** | | **2,140** | | | | |
| **ITEF TEQs** | | | | | | | |
| TEQ: ND=0 | 8.66 | | 9.07 | | | | |
| TEQ: ND=DL/2 | 8.66 | 0.315 | 9.07 | | | | |
| TEQ: ND=DL | 8.66 | 0.63 | 9.07 | | | | |

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# Sample ID: 01TB-SURFACE TO-35 MLLW — TEQ Summary — Method 1613B

| | | | | | |
|---|---|---|---|---|---|
| Client Project Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Sample ID: | B8803_20707_DF_003 |
| Cliend Project ID: | FC11168XW | Weight/Volume: | 10.16 g | QC Batch No.: | 20707 |
| Date Collected: | 09-Nov-2023 | Split: | - | Date Extracted: | 04-Dec-2023 |
| Date Received: | 17-Nov-2023 | Dilution: | - | Date Analyzed: | 19-Dec-2023 14:17 |
| Lab Project No: | B8803 | Units | pg/g | | |

| Analyte | Result | Qualifiers | DLs | I-TEQ | WHO-1998 | WHO-2005 |
|---|---|---|---|---|---|---|
| 2378-TCDD | 0.409 | J | 0.21 | 0.409 | 0.409 | 0.409 |
| 12378-PeCDD | 1.53 | J | 0.282 | 0.765 | 1.53 | 1.53 |
| 123478-HxCDD | [2.04] | J B | 0.436 | [0.204] | [0.204] | [0.204] |
| 123678-HxCDD | 7.59 | | 0.432 | 0.759 | 0.759 | 0.759 |
| 123789-HxCDD | 4.62 | | 0.452 | 0.462 | 0.462 | 0.462 |
| 1234678-HpCDD | 162 | | 0.24 | 1.62 | 1.62 | 1.62 |
| OCDD | 1240 | | 0.393 | 1.24 | 0.124 | 0.372 |
| | | | | | | |
| 2378-TCDF | [2.06] | | 0.116 | [0.206] | [0.206] | [0.206] |
| 12378-PeCDF | 1.36 | J | 0.145 | 0.068 | 0.068 | 0.0408 |
| 23478-PeCDF | 3.89 | | 0.144 | 1.95 | 1.95 | 1.17 |
| 123478-HxCDF | 2.7 | | 0.137 | 0.27 | 0.27 | 0.27 |
| 123678-HxCDF | 2.32 | J | 0.123 | 0.232 | 0.232 | 0.232 |
| 234678-HxCDF | 3.85 | | 0.139 | 0.385 | 0.385 | 0.385 |
| 123789-HxCDF | 0.745 | J B | 0.104 | 0.0745 | 0.0745 | 0.0745 |
| 1234678-HpCDF | 32.3 | | 0.0935 | 0.323 | 0.323 | 0.323 |
| 1234789-HpCDF | 2.28 | J | 0.109 | 0.0228 | 0.0228 | 0.0228 |
| OCDF | 89.4 | | 0.204 | 0.0894 | 0.00894 | 0.0268 |

| TEQ Summaries | | | |
|---|---|---|---|
| EMPC = 0, ND = 0 | 8.66 | 8.23 | 7.69 |
| EMPC = 0, ND = DL / 2 | 8.66 | 8.23 | 7.69 |
| EMPC = 0, ND = DL | 8.66 | 8.23 | 7.69 |
| EMPC = 0, < J-level = 0 | 7.09 | 5.9 | 5.38 |
| | | | |
| EMPC = EMPC, ND = 0 | 9.07 | 8.64 | 8.1 |
| EMPC = EMPC, ND = DL / 2 | 9.07 | 8.64 | 8.1 |
| EMPC = EMPC, ND = DL | 9.07 | 8.64 | 8.1 |
| EMPC = EMPC, < J-level = 0 | 7.3 | 6.1 | 5.59 |

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# Sample ID: Method Blank B8803_20707 — Method 1613B

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Project ID: | B8803 | Date Received: | n/a |
| Project ID: | FC11168XW | Weight/Volume: | 10.00 g | Lab Sample ID | MB1_20707_DF_SDS | Date Extracted: | 04-Dec-2023 |
| Date Collected: | n/a | % Solid: | n/a | QC Batch No: | 20707 | Date Analyzed: | 19-Dec-2023 |
| | | Split: | - | Dilution: | - | Time Analyzed: | 11:58:11 |

| Analyte | Conc. (pg/g) | DL (pg/g) | EMPC (pg/g) | Qualifiers | Standard | ES Recoveries | Qualifiers |
|---|---|---|---|---|---|---|---|
| 2378-TCDD | ND | 0.201 | | | ES 2378-TCDD | 82.6 | |
| 12378-PeCDD | ND | 0.184 | | | ES 12378-PeCDD | 93.1 | |
| 123478-HxCDD | EMPC | | 0.313 | J | ES 123478-HxCDD | 86.4 | |
| 123678-HxCDD | ND | 0.172 | | | ES 123678-HxCDD | 90.7 | |
| 123789-HxCDD | ND | 0.169 | | | ES 123789-HxCDD | 88.4 | |
| 1234678-HpCDD | 0.302 | | | J | ES 1234678-HpCDD | 92.4 | |
| OCDD | 7.06 | | | | ES OCDD | 93.6 | |
| | | | | | | | |
| 2378-TCDF | ND | 0.111 | | | ES 2378-TCDF | 80.6 | |
| 12378-PeCDF | ND | 0.161 | | | ES 12378-PeCDF | 89 | |
| 23478-PeCDF | ND | 0.164 | | | ES 23478-PeCDF | 85.6 | |
| 123478-HxCDF | 0.18 | | | J | ES 123478-HxCDF | 97.6 | |
| 123678-HxCDF | 0.179 | | | J | ES 123678-HxCDF | 103 | |
| 234678-HxCDF | 0.186 | | | J | ES 234678-HxCDF | 97.3 | |
| 123789-HxCDF | EMPC | | 0.288 | J | ES 123789-HxCDF | 92.7 | |
| 1234678-HpCDF | EMPC | | 0.215 | J | ES 1234678-HpCDF | 105 | |
| 1234789-HpCDF | 0.203 | | | J | ES 1234789-HpCDF | 96.3 | |
| OCDF | ND | 0.198 | | | ES OCDF | 92.3 | |
| **Totals** | | | | | **Standard** | **CS Recoveries** | |
| | | | | | CS 37Cl-2378-TCDD | 91.9 | |
| Total TCDD | ND | 0.201 | ND | | | | |
| Total PeCDD | ND | 0.184 | ND | | | | |
| Total HxCDD | ND | | 0.313 | | | | |
| Total HpCDD | 0.501 | | 0.501 | | | | |
| | | | | | | | |
| Total TCDF | ND | 0.111 | ND | | | | |
| Total PeCDF | ND | 0.162 | ND | | | | |
| Total HxCDF | 0.545 | | 0.833 | | | | |
| Total HpCDF | 0.203 | | 0.418 | | | | |
| **Total PCDD/Fs** | **8.31** | | **9.12** | | | | |
| **ITEF TEQs** | | | | | | | |
| TEQ: ND=0 | 0.0666 | | 0.129 | | | | |
| TEQ: ND=DL/2 | 0.281 | 0.249 | 0.343 | | | | |
| TEQ: ND=DL | 0.495 | 0.499 | 0.557 | | | | |

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# Sample ID: Method Blank B8803_20707 — TEQ Summary — Method 1613B

| | | | | | |
|---|---|---|---|---|---|
| Client Project Name: | SGS North America Inc. - Orlando | Matrix: | Solid | Lab Sample ID: | MB1_20707_DF_SDS |
| Cliend Project ID: | FC11168XW | Weight/Volume: | 10.00 g | QC Batch No.: | 20707 |
| Date Collected: | n/a | Split: | - | Date Extracted: | 04-Dec-2023 |
| Date Received: | n/a | Dilution: | - | Date Analyzed: | 19-Dec-2023 11:58 |
| Lab Project No: | B8803 | Units | pg/g | | |

| Analyte | Result | Qualifiers | DLs | I-TEQ | WHO-1998 | WHO-2005 |
|---|---|---|---|---|---|---|
| 2378-TCDD | (0.201) | | 0.201 | (0.201) | (0.201) | (0.201) |
| 12378-PeCDD | (0.184) | | 0.184 | (0.092) | (0.184) | (0.184) |
| 123478-HxCDD | [0.313] | J | 0.18 | [0.0313] | [0.0313] | [0.0313] |
| 123678-HxCDD | (0.172) | | 0.172 | (0.0172) | (0.0172) | (0.0172) |
| 123789-HxCDD | (0.169) | | 0.169 | (0.0169) | (0.0169) | (0.0169) |
| 1234678-HpCDD | 0.302 | J | 0.118 | 0.00302 | 0.00302 | 0.00302 |
| OCDD | 7.06 | | 0.238 | 0.00706 | 0.000706 | 0.00212 |
| | | | | | | |
| 2378-TCDF | (0.111) | | 0.111 | (0.0111) | (0.0111) | (0.0111) |
| 12378-PeCDF | (0.161) | | 0.161 | (0.00805) | (0.00805) | (0.00483) |
| 23478-PeCDF | (0.164) | | 0.164 | (0.0818) | (0.0818) | (0.0491) |
| 123478-HxCDF | 0.18 | J | 0.113 | 0.018 | 0.018 | 0.018 |
| 123678-HxCDF | 0.179 | J | 0.117 | 0.0179 | 0.0179 | 0.0179 |
| 234678-HxCDF | 0.186 | J | 0.124 | 0.0186 | 0.0186 | 0.0186 |
| 123789-HxCDF | [0.288] | J | 0.138 | [0.0288] | [0.0288] | [0.0288] |
| 1234678-HpCDF | [0.215] | J | 0.0843 | [0.00215] | [0.00215] | [0.00215] |
| 1234789-HpCDF | 0.203 | J | 0.108 | 0.00203 | 0.00203 | 0.00203 |
| OCDF | (0.198) | | 0.198 | (0.000198) | (0.0000198) | (0.0000593) |

| TEQ Summaries | | | |
|---|---|---|---|
| EMPC = 0, ND = 0 | 0.0666 | 0.0602 | 0.0616 |
| EMPC = 0, ND = DL / 2 | 0.281 | 0.32 | 0.304 |
| EMPC = 0, ND = DL | 0.495 | 0.58 | 0.546 |
| EMPC = 0, < J-level = 0 | 0.00706 | 0.000706 | 0.00212 |
| | | | |
| EMPC = EMPC, ND = 0 | 0.129 | 0.123 | 0.124 |
| EMPC = EMPC, ND = DL / 2 | 0.343 | 0.382 | 0.366 |
| EMPC = EMPC, ND = DL | 0.557 | 0.642 | 0.608 |
| EMPC = EMPC, < J-level = 0 | 0.00706 | 0.000706 | 0.00212 |

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Checkcode: 842-171-PRH

SGS North America - DF v0.99

**METHOD 1613B** **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

| | | | |
|---|---|---|---|
| Lab Name: | SGS North America | | |
| Initial Calibration: | ICAL: HRMS3_DF_10172022_26APR2023 | | |
| Instrument ID: | HRMS3 | GC Column ID: | ZB-5ms |
| VER Data Filename: | 231219C02 | Analysis Date: | 19-DEC-2023 10:25:36 |
| Lab ID: | OPR1_20707_DF | | |

| NATIVE ANALYTES | SPIKE CONC. | CONC. FOUND | RANGE (ng/mL) | | | OK |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 10 | 12.7 | 6.7 | - | 15.8 | Y |
| 1,2,3,7,8-PeCDD | 50 | 54.1 | 35 | - | 71 | Y |
| 1,2,3,4,7,8-HxCDD | 50 | 58.9 | 35 | - | 82 | Y |
| 1,2,3,6,7,8-HxCDD | 50 | 59.2 | 38 | - | 67 | Y |
| 1,2,3,7,8,9-HxCDD | 50 | 54.3 | 32 | - | 81 | Y |
| 1,2,3,4,6,7,8-HpCDD | 50 | 57.3 | 35 | - | 70 | Y |
| OCDD | 100 | 110 | 78 | - | 144 | Y |
| 2,3,7,8-TCDF | 10 | 12 | 7.5 | - | 15.8 | Y |
| 1,2,3,7,8-PeCDF | 50 | 55.7 | 40 | - | 67 | Y |
| 2,3,4,7,8-PeCDF | 50 | 58.7 | 34 | - | 80 | Y |
| 1,2,3,4,7,8-HxCDF | 50 | 56.3 | 36 | - | 67 | Y |
| 1,2,3,6,7,8-HxCDF | 50 | 55.2 | 42 | - | 65 | Y |
| 2,3,4,6,7,8-HxCDF | 50 | 55.8 | 35 | - | 78 | Y |
| 1,2,3,7,8,9-HxCDF | 50 | 52 | 39 | - | 65 | Y |
| 1,2,3,4,6,7,8-HpCDF | 50 | 54.1 | 41 | - | 61 | Y |
| 1,2,3,4,7,8,9-HpCDF | 50 | 52.7 | 39 | - | 69 | Y |
| OCDF | 100 | 108 | 63 | - | 170 | Y |

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2023 09:28 Analyst: pw

**METHOD 1613B** **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

| | | | |
|---|---|---|---|
| Lab Name: | SGS North America | | |
| Initial Calibration: | ICAL: HRMS3_DF_10172022_26APR2023 | | |
| Instrument ID: | HRMS3 | GC Column ID: | ZB-5ms |
| VER Data Filename: | 231219C02 | Analysis Date: | 19-DEC-2023 10:25:36 |
| Lab ID: | OPR1_20707_DF | | |

| LABELED ANALYTES | SPIKE CONC. | CONC. FOUND | RANGE (ng/mL) | | | OK |
|---|---|---|---|---|---|---|
| 13C-2,3,7,8-TCDD | 100 | 82.9 | 20 | - | 175 | Y |
| 13C-1,2,3,7,8-PeCDD | 100 | 89.3 | 21 | - | 227 | Y |
| 13C-1,2,3,4,7,8-HxCDD | 100 | 90.1 | 21 | - | 193 | Y |
| 13C-1,2,3,6,7,8-HxCDD | 100 | 92.3 | 25 | - | 163 | Y |
| 13C-1,2,3,7,8,9-HxCDD | 100 | 90.2 | 26 | - | 166 | Y |
| 13C-1,2,3,4,6,7,8-HpCDD | 100 | 91.7 | 26 | - | 166 | Y |
| 13C-OCDD | 200 | 207 | 26 | - | 397 | Y |
| 13C-2,3,7,8-TCDF | 100 | 80.3 | 22 | - | 152 | Y |
| 13C-1,2,3,7,8-PeCDF | 100 | 86.8 | 21 | - | 192 | Y |
| 13C-2,3,4,7,8-PeCDF | 100 | 85.1 | 13 | - | 328 | Y |
| 13C-1,2,3,4,7,8-HxCDF | 100 | 100 | 19 | - | 202 | Y |
| 13C-1,2,3,6,7,8-HxCDF | 100 | 110 | 21 | - | 159 | Y |
| 13C-2,3,4,6,7,8-HxCDF | 100 | 100 | 22 | - | 176 | Y |
| 13C-1,2,3,7,8,9-HxCDF | 100 | 97.8 | 17 | - | 205 | Y |
| 13C-1,2,3,4,6,7,8-HpCDF | 100 | 106 | 21 | - | 158 | Y |
| 13C-1,2,3,4,7,8,9-HpCDF | 100 | 101 | 20 | - | 186 | Y |
| 13C-OCDF | 200 | 220 | 26 | - | 397 | Y |
| CLEANUP STANDARD | | | | | | |
| 37Cl-2,3,7,8-TCDD | 40 | 37.9 | 12.4 | - | 76.4 | Y |

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2023 09:28 Analyst: pw

# Sample ID: 01TB-TERMINAL

# Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.12 g | Sample ID: | B8803_20707_PCB_001 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 58.3 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |

| Analyte | Conc. | DL | EMPC | Qualifier | Standard | Recovery |
|---|---|---|---|---|---|---|
| | pg/g | pg/g | pg/g | | | % |
| PCB-77 33'44'-TeCB | 30.7 | | | | ES PCB-1 | 55.2 |
| PCB-81 344'5-TeCB | ND | 1.43 | | | ES PCB-3 | 64.4 |
| PCB-105 233'44'-PeCB | 220 | | | | ES PCB-4 | 78.4 |
| PCB-114 2344'5-PeCB | 10.4 | | | | ES PCB-15 | 65.6 |
| PCB-118 23'44'5-PeCB | 628 | | | | ES PCB-19 | 71.7 |
| PCB-123 23'44'5'-PeCB | 10.5 | | | | ES PCB-37 | 61.1 |
| PCB-126 33'44'5-PeCB | EMPC | | 3.18 | | ES PCB-54 | 82.9 |
| PCB-156/157 233'44'5/233'44'5'-HxCB | 115 | | | C | ES PCB-77 | 71.9 |
| PCB-167 23'44'55'-HxCB | 45.2 | | | | ES PCB-81 | 67.4 |
| PCB-169 33'44'55'-HxCB | ND | 1.67 | | | ES PCB-104 | 97.7 |
| PCB-189 233'44'55'-HpCB | 11.8 | | | | ES PCB-105 | 81.9 |
| | | | | | ES PCB-114 | 81.6 |
| **TEQs (WHO 2005 M/H)** | | | | | ES PCB-118 | 80.4 |
| | | | | | ES PCB-123 | 82.4 |
| ND = 0 | 0.0343 | | 0.352 | | ES PCB-126 | 70.2 |
| ND = 0.5 x DL | 0.124 | | 0.378 | | ES PCB-153 | 88 |
| ND = DL | 0.213 | | 0.403 | | ES PCB-155 | 78.4 |
| | | | | | ES PCB-156/157 | 57.2 |
| **Totals** | | | | | ES PCB-167 | 65.4 |
| Mono-CB | 31.3 | | | | ES PCB-169 | 56.6 |
| Di-CB | 313 | | | | ES PCB-170 | 111 |
| Tri-CB | 1,080 | | 1,100 | | ES PCB-180 | 111 |
| Tetra-CB | 2,100 | | 2,110 | | ES PCB-188 | 113 |
| Penta-CB | 4,130 | | 4,130 | | ES PCB-189 | 86 |
| Hexa-CB | 4,610 | | 4,630 | | ES PCB-202 | 94.7 |
| Hepta-CB | 2,320 | | 2,340 | | ES PCB-205 | 90.8 |
| Octa-CB | 755 | | | | ES PCB-206 | 111 |
| Nona-CB | 228 | | | | ES PCB-208 | 106 |
| Deca-CB | 169 | | | | ES PCB-209 | 101 |
| | | | | | CS PCB-28 | 70.4 |
| Total PCB (Mono-Deca) | 15,700 | | 15,800 | | CS PCB-111 | 86.5 |
| | | | | | CS PCB-178 | 121 |

Checkcode: 204-704-HHS/C SGS North America - PCB v0.99 Report Created: 27-Dec-2023 10:11 Analyst: RB

# Sample ID: 01TB-TERMINAL — Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.12 g | Sample ID: | B8803_20707_PCB_001 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 58.3 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |
| | | Units | pg/g | Checkcode: | 204-704-HHS/C | Time Analyzed: | 07:36:28 |

| Mono | Conc. | Qualifiers | Tri | Conc. | Qualifiers | Tetra | Conc. | Qualifiers | Tetra | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1 | 13.8 | | PCB-19 | [12.2] | EMPC | PCB-54 | 2.08 | | PCB-72 | 5.33 | |
| PCB-2 | 8.07 | | PCB-30/18 | 109 | C | PCB-50/53 | 42.2 | C | PCB-68 | [5.29] | EMPC |
| PCB-3 | 9.4 | | PCB-17 | 81 | | PCB-45 | 27 | | PCB-57 | 1.85 | |
| | | | PCB-27 | 18.2 | | PCB-51 | 18.8 | | PCB-58 | [1.32] | EMPC |
| **Conc.** | 31.3 | | PCB-24 | (3.14) | | PCB-46 | 14.8 | | PCB-67 | 8.42 | |
| **EMPC** | 31.3 | | PCB-16 | 52.7 | | PCB-52 | 306 | | PCB-63 | 11.7 | |
| | | | PCB-32 | 58.4 | | PCB-73 | [2.17] | EMPC | PCB-61/70/74/76 | 391 | C |
| **Di** | **Conc.** | **Qualifiers** | PCB-34 | (4.5) | | PCB-43 | 5.65 | | PCB-66 | 256 | |
| PCB-4 | 27.7 | | PCB-23 | (4.52) | | PCB-69/49 | 246 | C | PCB-55 | 2.48 | |
| PCB-10 | 1.71 | | PCB-26/29 | 60.2 | C | PCB-48 | 42 | | PCB-56 | 82 | |
| PCB-9 | 5.05 | | PCB-25 | 26.8 | | PCB-44/47/65 | 269 | C | PCB-60 | 39.1 | |
| PCB-7 | 8.13 | | PCB-31 | 162 | | PCB-59/62/75 | 20.7 | C | PCB-80 | 2.46 | |
| PCB-6 | 24.9 | | PCB-28/20 | 255 | C | PCB-42 | 65.5 | | PCB-79 | 3.69 | |
| PCB-5 | (1.74) | | PCB-21/33 | 127 | C | PCB-41 | 10.5 | | PCB-78 | (1.46) | |
| PCB-8 | 102 | | PCB-22 | 60.4 | | PCB-71/40 | 108 | C | PCB-81 | (1.43) | |
| PCB-14 | (1.74) | | PCB-36 | (3.82) | | PCB-64 | 89.9 | | PCB-77 | 30.7 | |
| PCB-11 | 37.3 | B | PCB-39 | (4.2) | | | | | | | |
| PCB-13/12 | 16.6 | C | PCB-38 | (4.17) | | | | | | | |
| PCB-15 | 88.9 | | PCB-35 | (4.22) | | | | | | | |
| | | | PCB-37 | 73 | | | | | | | |
| **Conc.** | 313 | | **Conc.** | 1,080 | | | | | **Conc.** | 2,100 | |
| **EMPC** | 313 | | **EMPC** | 1,100 | | | | | **EMPC** | 2,110 | |

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| Totals | Conc. | EMPC |
|---|---|---|
| Mono-Tri | 1,430 | 1,440 |
| Tetra-Hexa | 10,800 | 10,900 |
| Hepta-Deca | 3,470 | 3,490 |
| Mono-Deca | 15,700 | 15,800 |

# Sample ID: 01TB-TERMINAL — Method 1668C

| Penta | Conc. | Qualifiers | Penta | Conc. | Qualifiers | Hexa | Conc. | Qualifiers | Hexa | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-104 | (0.725) | | PCB-109/119/86/97/125/87 | 391 | C | PCB-155 | (0.389) | | PCB-165 | [1.56] | EMPC |
| PCB-96 | 3.09 | | PCB-117 | 20.2 | | PCB-152 | [1.09] | EMPC | PCB-146 | 180 | |
| PCB-103 | 14.8 | | PCB-116/85 | 100 | C | PCB-150 | [4.66] | EMPC | PCB-161 | (0.388) | |
| PCB-94 | 4.56 | | PCB-110 | 678 | | PCB-136 | 131 | | PCB-153/168 | 963 | C |
| PCB-95 | 386 | | PCB-115 | (1.44) | | PCB-145 | (0.458) | | PCB-141 | 142 | |
| PCB-100/93 | 11.5 | C | PCB-82 | 49 | | PCB-148 | 4.41 | | PCB-130 | 71.4 | |
| PCB-102 | 21 | | PCB-111 | (1.74) | | PCB-151/135 | 322 | C | PCB-137 | 39.4 | |
| PCB-98 | (2.07) | | PCB-120 | 5.41 | | PCB-154 | 34.7 | | PCB-164 | 59.1 | |
| PCB-88 | (2.42) | | PCB-108/124 | 22.3 | C | PCB-144 | 37.6 | | PCB-163/138/129 | 1,120 | C |
| PCB-91 | 104 | | PCB-107 | 55.8 | | PCB-147/149 | 720 | C | PCB-160 | (0.432) | |
| PCB-84 | 132 | | PCB-123 | 10.5 | | PCB-134 | 54.5 | | PCB-158 | 100 | |
| PCB-89 | 4.69 | | PCB-106 | (1.62) | | PCB-143 | 2.07 | | PCB-128/166 | 165 | C |
| PCB-121 | (1.55) | | PCB-118 | 628 | | PCB-139/140 | 18.8 | C | PCB-159 | [4.63] | EMPC |
| PCB-92 | 130 | | PCB-122 | 8.29 | | PCB-131 | 10.9 | | PCB-162 | 4.32 | |
| PCB-113/90/101 | 702 | C | PCB-114 | 10.4 | | PCB-142 | (0.577) | | PCB-167 | 45.2 | |
| PCB-83 | 33.1 | | PCB-105 | 220 | | PCB-132 | 256 | | PCB-156/157 | 115 | C |
| PCB-99 | 386 | | PCB-127 | (1.7) | | PCB-133 | 18 | | PCB-169 | (1.67) | |
| PCB-112 | (1.47) | | PCB-126 | [3.18] | EMPC | | | | | | |
| | | | **Conc.** | 4,130 | | | | | **Conc.** | 4,610 | |
| | | | **EMPC** | 4,130 | | | | | **EMPC** | 4,630 | |

| Hepta | Conc. | Qualifiers | Hepta | Conc. | Qualifiers | Octa | Conc. | Qualifiers | Nona | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-188 | [2.17] | EMPC | PCB-174 | 226 | | PCB-202 | 52.2 | | PCB-208 | 51.8 | |
| PCB-179 | 113 | | PCB-177 | 186 | | PCB-201 | 39 | | PCB-207 | 21.9 | |
| PCB-184 | [0.789] | J EMPC | PCB-181 | (0.953) | | PCB-204 | (0.353) | | PCB-206 | 154 | |
| PCB-176 | 38.3 | | PCB-171/173 | 97.6 | C | PCB-197 | 8.76 | | | | |
| PCB-186 | (0.356) | | PCB-172 | 47.7 | | PCB-200 | 20 | | **Conc.** | 228 | |
| PCB-178 | 72.8 | | PCB-192 | (0.751) | | PCB-198/199 | 197 | C | **EMPC** | 228 | |
| PCB-175 | [12.4] | EMPC | PCB-180/193 | 598 | C | PCB-196 | 94.9 | | | | |
| PCB-187 | 399 | | PCB-191 | 11.7 | | PCB-203 | 111 | | **Deca** | **Conc.** | **Qualifiers** |
| PCB-182 | [2.63] | EMPC | PCB-170 | 270 | | PCB-195 | 55.3 | | PCB-209 | 169 | |
| PCB-183 | 185 | | PCB-190 | 46.1 | | PCB-194 | 169 | | | | |
| PCB-185 | 19.3 | | PCB-189 | 11.8 | | PCB-205 | 8.25 | | | | |
| | | | **Conc.** | 2,320 | | **Conc.** | 755 | | | | |
| | | | **EMPC** | 2,340 | | **EMPC** | 755 | | | | |

# Sample ID: 01TB-BELOW-35 MLLW

# Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.35 g | Sample ID: | B8803_20707_PCB_002 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 53.4 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |

| Analyte | Conc. | DL | EMPC | Qualifier | Standard | Recovery |
|---|---|---|---|---|---|---|
| | pg/g | pg/g | pg/g | | | % |
| PCB-77 33'44'-TeCB | 437 | | | | ES PCB-1 | 48.9 |
| PCB-81 344'5-TeCB | 12.7 | | | | ES PCB-3 | 57.3 |
| PCB-105 233'44'-PeCB | 2,670 | | | | ES PCB-4 | 70.6 |
| PCB-114 2344'5-PeCB | 133 | | | | ES PCB-15 | 60.8 |
| PCB-118 23'44'5-PeCB | 8,010 | | | E | ES PCB-19 | 66.4 |
| PCB-123 23'44'5'-PeCB | 146 | | | | ES PCB-37 | 54 |
| PCB-126 33'44'5-PeCB | 38.5 | | | | ES PCB-54 | 80.7 |
| PCB-156/157 233'44'5/233'44'5'-HxCB | 1,390 | | | C | ES PCB-77 | 58.7 |
| PCB-167 23'44'55'-HxCB | 591 | | | | ES PCB-81 | 59.8 |
| PCB-169 33'44'55'-HxCB | ND | 7.21 | | | ES PCB-104 | 107 |
| PCB-189 233'44'55'-HpCB | 156 | | | | ES PCB-105 | 76.2 |
| | | | | | ES PCB-114 | 73.9 |
| **TEQs (WHO 2005 M/H)** | | | | | ES PCB-118 | 79.5 |
| | | | | | ES PCB-123 | 74.7 |
| ND = 0 | 4.29 | | 4.29 | | ES PCB-126 | 64.4 |
| ND = 0.5 x DL | 4.4 | | 4.4 | | ES PCB-153 | 86.2 |
| ND = DL | 4.5 | | 4.5 | | ES PCB-155 | 80.5 |
| | | | | | ES PCB-156/157 | 50.9 |
| **Totals** | | | | | ES PCB-167 | 51.3 |
| Mono-CB | 248 | | | | ES PCB-169 | 52.5 |
| Di-CB | 6,460 | | | | ES PCB-170 | 98.7 |
| Tri-CB | 29,000 | | | E | ES PCB-180 | 99.7 |
| Tetra-CB | 42,200 | | | E | ES PCB-188 | 111 |
| Penta-CB | 60,800 | | 60,800 | E | ES PCB-189 | 69.1 |
| Hexa-CB | 51,100 | | 51,100 | E | ES PCB-202 | 88.1 |
| Hepta-CB | 26,500 | | 26,500 | E | ES PCB-205 | 79.4 |
| Octa-CB | 7,290 | | | | ES PCB-206 | 112 |
| Nona-CB | 1,560 | | | | ES PCB-208 | 95.6 |
| Deca-CB | 845 | | | | ES PCB-209 | 82.6 |
| | | | | | CS PCB-28 | 70 |
| Total PCB (Mono-Deca) | 226,000 | | 226,000 | E | CS PCB-111 | 87.7 |
| | | | | | CS PCB-178 | 118 |

Checkcode: 013-419-DVV/C SGS North America - PCB v0.99 Report Created: 27-Dec-2023 10:12 Analyst: RB

# Sample ID: 01TB-BELOW-35 MLLW

# Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.35 g | Sample ID: | B8803_20707_PCB_002 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 53.4 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |
| | | Units | pg/g | Checkcode: | 013-419-DVV/C | Time Analyzed: | 08:33:23 |

| Mono | Conc. | Qualifiers | Tri | Conc. | Qualifiers | Tetra | Conc. | Qualifiers | Tetra | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1 | 102 | | PCB-19 | 540 | | PCB-54 | 39.3 | | PCB-72 | 86.1 | |
| PCB-2 | 43.9 | | PCB-30/18 | 4,140 | C | PCB-50/53 | 1,290 | C | PCB-68 | 96.4 | |
| PCB-3 | 102 | | PCB-17 | 2,280 | | PCB-45 | 646 | | PCB-57 | 21.3 | |
| | | | PCB-27 | 535 | | PCB-51 | 556 | | PCB-58 | 31.9 | |
| **Conc.** | 248 | | PCB-24 | 37.9 | | PCB-46 | 458 | | PCB-67 | 167 | |
| **EMPC** | 248 | | PCB-16 | 1,150 | | PCB-52 | 6,700 | E | PCB-63 | 172 | |
| | | | PCB-32 | 1,790 | | PCB-73 | 74.6 | | PCB-61/70/74/76 | 7,100 | C |
| **Di** | **Conc.** | **Qualifiers** | PCB-34 | 58.6 | | PCB-43 | 111 | | PCB-66 | 4,150 | E |
| PCB-4 | 1,240 | | PCB-23 | (8.03) | | PCB-69/49 | 5,420 | C | PCB-55 | (5.98) | |
| PCB-10 | 76 | | PCB-26/29 | 1,680 | C | PCB-48 | 939 | | PCB-56 | 1,340 | |
| PCB-9 | 122 | | PCB-25 | 759 | | PCB-44/47/65 | 5,060 | C | PCB-60 | 594 | |
| PCB-7 | 112 | | PCB-31 | 4,670 | E | PCB-59/62/75 | 435 | C | PCB-80 | (6.22) | |
| PCB-6 | 929 | | PCB-28/20 | 6,040 | C | PCB-42 | 1,420 | | PCB-79 | 61.1 | |
| PCB-5 | 10.1 | | PCB-21/33 | 2,820 | C | PCB-41 | 164 | | PCB-78 | (6.75) | |
| PCB-8 | 2,410 | | PCB-22 | 1,070 | | PCB-71/40 | 2,940 | C | PCB-81 | 12.7 | |
| PCB-14 | 2.07 | | PCB-36 | (6.8) | | PCB-64 | 1,680 | | PCB-77 | 437 | |
| PCB-11 | 93.5 | | PCB-39 | 28.5 | | | | | | | |
| PCB-13/12 | 321 | C | PCB-38 | (7.41) | | | | | | | |
| PCB-15 | 1,140 | | PCB-35 | 74.9 | | | | | | | |
| | | | PCB-37 | 1,350 | | | | | | | |
| **Conc.** | 6,460 | | **Conc.** | 29,000 | | | | | **Conc.** | 42,200 | |
| **EMPC** | 6,460 | | **EMPC** | 29,000 | | | | | **EMPC** | 42,200 | |

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www.us.sgs.com

| Totals | Conc. | EMPC |
|---|---|---|
| Mono-Tri | 35,700 | 35,700 |
| Tetra-Hexa | 154,000 | 154,000 |
| Hepta-Deca | 36,200 | 36,200 |
| Mono-Deca | 226,000 | 226,000 |

## Sample ID: 01TB-BELOW-35 MLLW — Method 1668C

| Penta | Conc. | Qualifiers | Penta | Conc. | Qualifiers | Hexa | Conc. | Qualifiers | Hexa | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-104 | [8.68] | EMPC | PCB-109/119/86/97/125/87 | 5,700 | C | PCB-155 | 2.6 | | PCB-165 | [5.87] | EMPC |
| PCB-96 | 72.6 | | PCB-117 | 271 | | PCB-152 | 12.4 | | PCB-146 | 1,670 | |
| PCB-103 | 286 | | PCB-116/85 | 1,280 | C | PCB-150 | 50.3 | | PCB-161 | (0.673) | |
| PCB-94 | 67 | | PCB-110 | 9,900 | E | PCB-136 | 1,570 | | PCB-153/168 | 10,100 | E C |
| PCB-95 | 6,720 | E | PCB-115 | (1.04) | | PCB-145 | 3.97 | | PCB-141 | 1,610 | |
| PCB-100/93 | 185 | C | PCB-82 | 763 | | PCB-148 | 33.3 | | PCB-130 | 772 | |
| PCB-102 | 338 | | PCB-111 | 10.2 | | PCB-151/135 | 3,330 | C | PCB-137 | 451 | |
| PCB-98 | 100 | | PCB-120 | 69.3 | | PCB-154 | 325 | | PCB-164 | 699 | |
| PCB-88 | (1.74) | | PCB-108/124 | 323 | C | PCB-144 | 499 | | PCB-163/138/129 | 12,100 | E C |
| PCB-91 | 1,850 | | PCB-107 | 653 | | PCB-147/149 | 8,240 | E C | PCB-160 | (0.75) | |
| PCB-84 | 2,410 | | PCB-123 | 146 | | PCB-134 | 634 | | PCB-158 | 1,170 | |
| PCB-89 | 69.6 | | PCB-106 | (1.17) | | PCB-143 | (0.933) | | PCB-128/166 | 2,110 | C |
| PCB-121 | [5.79] | EMPC | PCB-118 | 8,010 | E | PCB-139/140 | 224 | C | PCB-159 | 84.1 | |
| PCB-92 | 1,830 | | PCB-122 | 108 | | PCB-131 | 138 | | PCB-162 | 55.1 | |
| PCB-113/90/101 | 10,900 | C | PCB-114 | 133 | | PCB-142 | (1) | | PCB-167 | 591 | |
| PCB-83 | 469 | | PCB-105 | 2,670 | | PCB-132 | 3,010 | | PCB-156/157 | 1,390 | C |
| PCB-99 | 5,390 | E | PCB-127 | 9.67 | | PCB-133 | 174 | | PCB-169 | (7.21) | |
| PCB-112 | 3.85 | | PCB-126 | 38.5 | | | | | | | |
| | | | **Conc.** | 60,800 | | | | | **Conc.** | 51,100 | |
| | | | **EMPC** | 60,800 | | | | | **EMPC** | 51,100 | |

| Hepta | Conc. | Qualifiers | Hepta | Conc. | Qualifiers | Octa | Conc. | Qualifiers | Nona | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-188 | 15.5 | | PCB-174 | 2,710 | | PCB-202 | 422 | | PCB-208 | 347 | |
| PCB-179 | 1,110 | | PCB-177 | 1,930 | | PCB-201 | 342 | | PCB-207 | 160 | |
| PCB-184 | [6.6] | EMPC | PCB-181 | 27.2 | | PCB-204 | (1.22) | | PCB-206 | 1,060 | |
| PCB-176 | 433 | | PCB-171/173 | 1,150 | C | PCB-197 | 83 | | | | |
| PCB-186 | (0.537) | | PCB-172 | 559 | | PCB-200 | 235 | | **Conc.** | 1,560 | |
| PCB-178 | 662 | | PCB-192 | (3.06) | | PCB-198/199 | 1,750 | C | **EMPC** | 1,560 | |
| PCB-175 | 185 | | PCB-180/193 | 7,080 | C | PCB-196 | 913 | | | | |
| PCB-187 | 4,050 | E | PCB-191 | 163 | | PCB-203 | 1,040 | | **Deca** | **Conc.** | **Qualifiers** |
| PCB-182 | 28.1 | | PCB-170 | 3,210 | | PCB-195 | 641 | | PCB-209 | 845 | |
| PCB-183 | 2,140 | | PCB-190 | 575 | | PCB-194 | 1,770 | | | | |
| PCB-185 | 291 | | PCB-189 | 156 | | PCB-205 | 89 | | | | |
| | | | **Conc.** | 26,500 | | **Conc.** | 7,290 | | | | |
| | | | **EMPC** | 26,500 | | **EMPC** | 7,290 | | | | |

# Sample ID: 01TB-SURFACE TO-35 MLLW

# Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.16 g | Sample ID: | B8803_20707_PCB_003 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 53.4 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |

| Analyte | Conc. | DL | EMPC | Qualifier | Standard | Recovery |
|---|---|---|---|---|---|---|
| | pg/g | pg/g | pg/g | | | % |
| PCB-77 33'44'-TeCB | 179 | | | | ES PCB-1 | 56.2 |
| PCB-81 344'5-TeCB | EMPC | | 6.18 | | ES PCB-3 | 65.3 |
| PCB-105 233'44'-PeCB | 1,250 | | | | ES PCB-4 | 80.5 |
| PCB-114 2344'5-PeCB | 69 | | | | ES PCB-15 | 67.2 |
| PCB-118 23'44'5-PeCB | 3,290 | | | | ES PCB-19 | 73.7 |
| PCB-123 23'44'5'-PeCB | 58.2 | | | | ES PCB-37 | 57.2 |
| PCB-126 33'44'5-PeCB | 17.1 | | | | ES PCB-54 | 83.7 |
| PCB-156/157 233'44'5/233'44'5'-HxCB | 614 | | | C | ES PCB-77 | 60.2 |
| PCB-167 23'44'55'-HxCB | 251 | | | | ES PCB-81 | 61.6 |
| PCB-169 33'44'55'-HxCB | ND | 4.87 | | | ES PCB-104 | 113 |
| PCB-189 233'44'55'-HpCB | 59.1 | | | | ES PCB-105 | 74.9 |
| | | | | | ES PCB-114 | 75.4 |
| **TEQs (WHO 2005 M/H)** | | | | | ES PCB-118 | 77.2 |
| | | | | | ES PCB-123 | 76.8 |
| ND = 0 | 1.9 | | 1.9 | | ES PCB-126 | 64.3 |
| ND = 0.5 x DL | 1.97 | | 1.97 | | ES PCB-153 | 81.4 |
| ND = DL | 2.05 | | 2.05 | | ES PCB-155 | 73.9 |
| | | | | | ES PCB-156/157 | 49.2 |
| **Totals** | | | | | ES PCB-167 | 49 |
| Mono-CB | 120 | | | | ES PCB-169 | 46.5 |
| Di-CB | 1,930 | | | | ES PCB-170 | 111 |
| Tri-CB | 8,580 | | 8,600 | | ES PCB-180 | 106 |
| Tetra-CB | 14,700 | | 14,800 | | ES PCB-188 | 104 |
| Penta-CB | 23,900 | | 23,900 | | ES PCB-189 | 72.9 |
| Hexa-CB | 20,300 | | 20,300 | | ES PCB-202 | 86.6 |
| Hepta-CB | 9,380 | | 9,400 | | ES PCB-205 | 83.7 |
| Octa-CB | 2,630 | | | | ES PCB-206 | 118 |
| Nona-CB | 592 | | | | ES PCB-208 | 97.9 |
| Deca-CB | 363 | | | | ES PCB-209 | 89.7 |
| | | | | | CS PCB-28 | 74.4 |
| Total PCB (Mono-Deca) | 82,400 | | 82,600 | | CS PCB-111 | 88.7 |
| | | | | | CS PCB-178 | 122 |

Checkcode: 826-342-HBT/C SGS North America - PCB v0.99 Report Created: 27-Dec-2023 10:12 Analyst: RB

# Sample ID: 01TB-SURFACE TO-35 MLLW — Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | 17-Nov-2023 |
| Project ID: | FC11168XW | Weight/Volume: | 10.16 g | Sample ID: | B8803_20707_PCB_003 | Date Extracted: | 04-Dec-2023 |
| Date Collected: | 09-Nov-2023 | % Solid | 53.4 % | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |
| | | Units | pg/g | Checkcode: | 826-342-HBT/C | Time Analyzed: | 09:32:37 |

| Mono | Conc. | Qualifiers | Tri | Conc. | Qualifiers | Tetra | Conc. | Qualifiers | Tetra | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1 | 66.7 | | PCB-19 | 137 | | PCB-54 | 13.4 | | PCB-72 | 20.9 | |
| PCB-2 | 16.3 | | PCB-30/18 | 899 | C | PCB-50/53 | 395 | C | PCB-68 | 26.6 | |
| PCB-3 | 36.7 | | PCB-17 | 591 | | PCB-45 | 251 | | PCB-57 | 10.5 | |
| | | | PCB-27 | 147 | | PCB-51 | 178 | | PCB-58 | 8.2 | |
| **Conc.** | 120 | | PCB-24 | 15.6 | | PCB-46 | 139 | | PCB-67 | 59.5 | |
| **EMPC** | 120 | | PCB-16 | 387 | | PCB-52 | 2,290 | | PCB-63 | 68.1 | |
| | | | PCB-32 | 496 | | PCB-73 | 11.2 | | PCB-61/70/74/76 | 2,440 | C |
| **Di** | **Conc.** | **Qualifiers** | PCB-34 | [12.9] | EMPC | PCB-43 | 56.2 | | PCB-66 | 1,440 | |
| PCB-4 | 248 | | PCB-23 | (5.52) | | PCB-69/49 | 1,640 | C | PCB-55 | 20 | |
| PCB-10 | 15.4 | | PCB-26/29 | 460 | C | PCB-48 | 374 | | PCB-56 | 536 | |
| PCB-9 | 34.7 | | PCB-25 | 213 | | PCB-44/47/65 | 1,940 | C | PCB-60 | 290 | |
| PCB-7 | 42.5 | | PCB-31 | 1,350 | | PCB-59/62/75 | 168 | C | PCB-80 | (3.27) | |
| PCB-6 | 202 | | PCB-28/20 | 1,960 | C | PCB-42 | 486 | | PCB-79 | 22.4 | |
| PCB-5 | 6.64 | | PCB-21/33 | 959 | C | PCB-41 | [112] | EMPC | PCB-78 | (3.55) | |
| PCB-8 | 703 | | PCB-22 | 481 | | PCB-71/40 | 891 | C | PCB-81 | [6.18] | EMPC |
| PCB-14 | 1.32 | | PCB-36 | (4.67) | | PCB-64 | 713 | | PCB-77 | 179 | |
| PCB-11 | 64.1 | | PCB-39 | 9.53 | | | | | | | |
| PCB-13/12 | 88.4 | C | PCB-38 | (5.09) | | | | | | | |
| PCB-15 | 524 | | PCB-35 | 27.8 | | | | | | | |
| | | | PCB-37 | 447 | | | | | | | |
| **Conc.** | 1,930 | | **Conc.** | 8,580 | | | | | **Conc.** | 14,700 | |
| **EMPC** | 1,930 | | **EMPC** | 8,600 | | | | | **EMPC** | 14,800 | |

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Tel: +1 910 794-1613
www.us.sgs.com

| Totals | Conc. | EMPC |
|---|---|---|
| Mono-Tri | 10,600 | 10,600 |
| Tetra-Hexa | 58,800 | 59,000 |
| Hepta-Deca | 13,000 | 13,000 |
| Mono-Deca | 82,400 | 82,600 |

## Sample ID: 01TB-SURFACE TO-35 MLLW — Method 1668C

| Penta | Conc. | Qualifiers | Penta | Conc. | Qualifiers | Hexa | Conc. | Qualifiers | Hexa | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-104 | 2.43 | | PCB-109/119/86/97/125/87 | 2,410 | C | PCB-155 | [1.11] | EMPC | PCB-165 | 4.55 | |
| PCB-96 | 23.2 | | PCB-117 | 94.3 | | PCB-152 | 5.16 | | PCB-146 | 659 | |
| PCB-103 | 76.5 | | PCB-116/85 | 616 | C | PCB-150 | 20.3 | | PCB-161 | (0.602) | |
| PCB-94 | 28.1 | | PCB-110 | 3,890 | | PCB-136 | 595 | | PCB-153/168 | 3,840 | C |
| PCB-95 | 2,460 | | PCB-115 | (1.14) | | PCB-145 | (0.561) | | PCB-141 | 674 | |
| PCB-100/93 | 61.1 | C | PCB-82 | 352 | | PCB-148 | 11.1 | | PCB-130 | 334 | |
| PCB-102 | 111 | | PCB-111 | [4.68] | EMPC | PCB-151/135 | 1,310 | C | PCB-137 | 244 | |
| PCB-98 | 39 | | PCB-120 | 23 | | PCB-154 | 120 | | PCB-164 | 273 | |
| PCB-88 | (1.92) | | PCB-108/124 | 147 | C | PCB-144 | 188 | | PCB-163/138/129 | 4,990 | C |
| PCB-91 | 610 | | PCB-107 | 284 | | PCB-147/149 | 3,020 | C | PCB-160 | [2.24] | EMPC |
| PCB-84 | 900 | | PCB-123 | 58.2 | | PCB-134 | 254 | | PCB-158 | 488 | |
| PCB-89 | 31.9 | | PCB-106 | [1.96] | EMPC | PCB-143 | 12.3 | | PCB-128/166 | 913 | C |
| PCB-121 | 2.27 | | PCB-118 | 3,290 | | PCB-139/140 | 93.3 | C | PCB-159 | 28 | |
| PCB-92 | 743 | | PCB-122 | 47.5 | | PCB-131 | 57.1 | | PCB-162 | 21.4 | |
| PCB-113/90/101 | 4,070 | C | PCB-114 | 69 | | PCB-142 | (0.896) | | PCB-167 | 251 | |
| PCB-83 | 214 | | PCB-105 | 1,250 | | PCB-132 | 1,240 | | PCB-156/157 | 614 | C |
| PCB-99 | 1,920 | | PCB-127 | [4.62] | EMPC | PCB-133 | 69.4 | | PCB-169 | (4.87) | |
| PCB-112 | 4.26 | | PCB-126 | 17.1 | | | | | | | |
| | | | **Conc.** | 23,900 | | | | | **Conc.** | 20,300 | |
| | | | **EMPC** | 23,900 | | | | | **EMPC** | 20,300 | |

| Hepta | Conc. | Qualifiers | Hepta | Conc. | Qualifiers | Octa | Conc. | Qualifiers | Nona | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-188 | 6.32 | | PCB-174 | 980 | | PCB-202 | 152 | | PCB-208 | 141 | |
| PCB-179 | 406 | | PCB-177 | 696 | | PCB-201 | 121 | | PCB-207 | 61 | |
| PCB-184 | [1.71] | EMPC | PCB-181 | [10.8] | EMPC | PCB-204 | (1.39) | | PCB-206 | 390 | |
| PCB-176 | 154 | | PCB-171/173 | 409 | C | PCB-197 | 34.3 | | | | |
| PCB-186 | (0.663) | | PCB-172 | 202 | | PCB-200 | 77.8 | | **Conc.** | 592 | |
| PCB-178 | 246 | | PCB-192 | (2.03) | | PCB-198/199 | 645 | C | **EMPC** | 592 | |
| PCB-175 | 64.6 | | PCB-180/193 | 2,470 | C | PCB-196 | 335 | | | | |
| PCB-187 | 1,480 | | PCB-191 | 57 | | PCB-203 | 363 | | **Deca** | **Conc.** | **Qualifiers** |
| PCB-182 | 10.8 | | PCB-170 | 1,130 | | PCB-195 | 224 | | PCB-209 | 363 | |
| PCB-183 | 744 | | PCB-190 | 199 | | PCB-194 | 646 | | | | |
| PCB-185 | 71.5 | | PCB-189 | 59.1 | | PCB-205 | 32.9 | | | | |
| | | | **Conc.** | 9,380 | | **Conc.** | 2,630 | | | | |
| | | | **EMPC** | 9,400 | | **EMPC** | 2,630 | | | | |

# Sample ID: Method Blank B8803_20707

# Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | n/a |
| Project ID: | FC11168XW | Weight/Volume: | 10.00 g | Sample ID: | MB1_20707_PCB_SDS | Date Extracted: | 04-Dec-2023 |
| Date Collected: | n/a | % Solid | n/a | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |

| Analyte | Conc. | DL | EMPC | Qualifier | Standard | Recovery |
|---|---|---|---|---|---|---|
| | pg/g | pg/g | pg/g | | | % |
| PCB-77 33'44'-TeCB | ND | 0.463 | | | ES PCB-1 | 68.1 |
| PCB-81 344'5-TeCB | ND | 0.496 | | | ES PCB-3 | 65.5 |
| PCB-105 233'44'-PeCB | ND | 0.282 | | | ES PCB-4 | 85.3 |
| PCB-114 2344'5-PeCB | ND | 0.293 | | | ES PCB-15 | 65.8 |
| PCB-118 23'44'5-PeCB | 0.696 | | | J | ES PCB-19 | 78.2 |
| PCB-123 23'44'5'-PeCB | ND | 0.306 | | | ES PCB-37 | 59.7 |
| PCB-126 33'44'5-PeCB | ND | 0.192 | | | ES PCB-54 | 89 |
| PCB-156/157 233'44'5/233'44'5'-HxCB | EMPC | | 0.297 | J C | ES PCB-77 | 66.1 |
| PCB-167 23'44'55'-HxCB | ND | 0.24 | | | ES PCB-81 | 66.8 |
| PCB-169 33'44'55'-HxCB | ND | 0.238 | | | ES PCB-104 | 99.7 |
| PCB-189 233'44'55'-HpCB | ND | 0.174 | | | ES PCB-105 | 74.9 |
| | | | | | ES PCB-114 | 73.7 |
| **TEQs (WHO 2005 M/H)** | | | | | ES PCB-118 | 75 |
| | | | | | ES PCB-123 | 75.1 |
| ND = 0 | 0.0000209 | | 0.0000298 | | ES PCB-126 | 72.6 |
| ND = 0.5 x DL | 0.0133 | | 0.0133 | | ES PCB-153 | 77.3 |
| ND = DL | 0.0266 | | 0.0266 | | ES PCB-155 | 69.5 |
| | | | | | ES PCB-156/157 | 62.8 |
| **Totals** | | | | | ES PCB-167 | 62.6 |
| Mono-CB | ND | 0.385 | | | ES PCB-169 | 64.2 |
| Di-CB | 1.43 | | 6.64 | | ES PCB-170 | 99.4 |
| Tri-CB | 0.661 | | | | ES PCB-180 | 95.4 |
| Tetra-CB | 0.578 | | 2.97 | | ES PCB-188 | 94.9 |
| Penta-CB | 4.23 | | 5.21 | | ES PCB-189 | 83.4 |
| Hexa-CB | 2.67 | | 4.01 | | ES PCB-202 | 87.1 |
| Hepta-CB | 0.855 | | 1.42 | | ES PCB-205 | 90.3 |
| Octa-CB | | | 0.406 | | ES PCB-206 | 106 |
| Nona-CB | ND | 0.69 | | | ES PCB-208 | 95.7 |
| Deca-CB | ND | 0.253 | | | ES PCB-209 | 99.8 |
| | | | | | CS PCB-28 | 73.6 |
| Total PCB (Mono-Deca) | 10.4 | | 21.3 | | CS PCB-111 | 90.9 |
| | | | | | CS PCB-178 | 116 |

Checkcode: 171-486-FQJ/C SGS North America - PCB v0.99 Report Created: 27-Dec-2023 10:11 Analyst: RB

# Sample ID: Method Blank B8803_20707 — Method 1668C

| Client Data | | Sample Data | | Laboratory Data | | | |
|---|---|---|---|---|---|---|---|
| Name: | SGS North America Inc. - Orlando | Matrix: | Soil | Project No.: | B8803 | Date Received: | n/a |
| Project ID: | FC11168XW | Weight/Volume: | 10.00 g | Sample ID: | MB1_20707_PCB_SDS | Date Extracted: | 04-Dec-2023 |
| Date Collected: | n/a | % Solid | n/a | QC Batch No.: | 20707 | Date Analyzed: | 22-Dec-2023 |
| | | Units | pg/g | Checkcode: | 171-486-FQJ/C | Time Analyzed: | 04:26:48 |

| Mono | Conc. | Qualifiers | Tri | Conc. | Qualifiers | Tetra | Conc. | Qualifiers | Tetra | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1 | (0.505) | | PCB-19 | (0.866) | | PCB-54 | (0.262) | | PCB-72 | (0.455) | |
| PCB-2 | (0.246) | | PCB-30/18 | (0.67) | C | PCB-50/53 | (0.394) | C | PCB-68 | (0.49) | |
| PCB-3 | (0.264) | | PCB-17 | (0.915) | | PCB-45 | (0.444) | | PCB-57 | (0.483) | |
| | | | PCB-27 | (0.682) | | PCB-51 | (0.401) | | PCB-58 | (0.442) | |
| Conc. | 0 | | PCB-24 | (0.682) | | PCB-46 | (0.481) | | PCB-67 | (0.432) | |
| EMPC | 0 | | PCB-16 | (0.944) | | PCB-52 | [0.498] | J EMPC | PCB-63 | (0.521) | |
| | | | PCB-32 | (0.614) | | PCB-73 | (0.297) | | PCB-61/70/74/76 | [1.06] | J EMPC C |
| **Di** | **Conc.** | **Qualifiers** | PCB-34 | (0.918) | | PCB-43 | (0.39) | | PCB-66 | (0.455) | |
| PCB-4 | (0.409) | | PCB-23 | (0.922) | | PCB-69/49 | 0.578 | J C | PCB-55 | (0.447) | |
| PCB-10 | (0.331) | | PCB-26/29 | (0.907) | C | PCB-48 | (0.405) | | PCB-56 | (0.464) | |
| PCB-9 | (0.291) | | PCB-25 | (0.766) | | PCB-44/47/65 | [0.833] | J EMPC C | PCB-60 | (0.542) | |
| PCB-7 | (0.319) | | PCB-31 | 0.661 | J | PCB-59/62/75 | (0.323) | C | PCB-80 | (0.465) | |
| PCB-6 | 0.362 | J | PCB-28/20 | (0.86) | C | PCB-42 | (0.445) | | PCB-79 | (0.429) | |
| PCB-5 | (0.323) | | PCB-21/33 | (0.88) | C | PCB-41 | (0.507) | | PCB-78 | (0.505) | |
| PCB-8 | 0.648 | J | PCB-22 | (0.789) | | PCB-71/40 | (0.372) | C | PCB-81 | (0.496) | |
| PCB-14 | (0.324) | | PCB-36 | (0.78) | | PCB-64 | (0.308) | | PCB-77 | (0.463) | |
| PCB-11 | [5.21] | EMPC | PCB-39 | (0.856) | | | | | | | |
| PCB-13/12 | (0.324) | C | PCB-38 | (0.85) | | | | | | | |
| PCB-15 | 0.426 | J | PCB-35 | (0.862) | | | | | | | |
| | | | PCB-37 | (0.849) | | | | | | | |
| **Conc.** | 1.43 | | **Conc.** | 0.661 | | | | | **Conc.** | 0.578 | |
| **EMPC** | 6.64 | | **EMPC** | 0.661 | | | | | **EMPC** | 2.97 | |

5500 Business Drive
Wilmington, NC 28405, USA
Tel: +1 910 794-1613
www.us.sgs.com

| Totals | Conc. | EMPC |
|---|---|---|
| Mono-Tri | 2.1 | 7.3 |
| Tetra-Hexa | 7.48 | 12.2 |
| Hepta-Deca | 0.855 | 1.83 |
| Mono-Deca | 10.4 | 21.3 |

# Sample ID: Method Blank B8803_20707 — Method 1668C

| Penta | Conc. | Qualifiers | Penta | Conc. | Qualifiers | Hexa | Conc. | Qualifiers | Hexa | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-104 | (0.129) | | PCB-109/119/86/97/125/87 | 1 | J C | PCB-155 | (0.122) | | PCB-165 | (0.148) | |
| PCB-96 | (0.148) | | PCB-117 | (0.349) | | PCB-152 | (0.132) | | PCB-146 | (0.149) | |
| PCB-103 | (0.408) | | PCB-116/85 | (0.401) | C | PCB-150 | (0.151) | | PCB-161 | (0.128) | |
| PCB-94 | (0.496) | | PCB-110 | 1.04 | | PCB-136 | [0.186] | J EMPC | PCB-153/168 | 0.752 | J C |
| PCB-95 | 0.665 | J | PCB-115 | (0.275) | | PCB-145 | (0.144) | | PCB-141 | (0.183) | |
| PCB-100/93 | (0.443) | C | PCB-82 | (0.449) | | PCB-148 | (0.172) | | PCB-130 | (0.21) | |
| PCB-102 | (0.384) | | PCB-111 | (0.331) | | PCB-151/135 | (0.173) | C | PCB-137 | (0.193) | |
| PCB-98 | (0.394) | | PCB-120 | (0.276) | | PCB-154 | (0.163) | | PCB-164 | (0.123) | |
| PCB-88 | (0.461) | | PCB-108/124 | (0.338) | C | PCB-144 | (0.176) | | PCB-163/138/129 | 1.47 | J C |
| PCB-91 | (0.437) | | PCB-107 | (0.285) | | PCB-147/149 | [0.86] | J EMPC C | PCB-160 | (0.142) | |
| PCB-84 | (0.507) | | PCB-123 | (0.306) | | PCB-134 | (0.207) | | PCB-158 | (0.132) | |
| PCB-89 | (0.422) | | PCB-106 | (0.309) | | PCB-143 | (0.177) | | PCB-128/166 | 0.449 | J C |
| PCB-121 | (0.295) | | PCB-118 | 0.696 | J | PCB-139/140 | (0.172) | C | PCB-159 | (0.207) | |
| PCB-92 | 0.412 | J | PCB-122 | (0.371) | | PCB-131 | (0.188) | | PCB-162 | (0.248) | |
| PCB-113/90/101 | [0.987] | J EMPC C | PCB-114 | (0.293) | | PCB-142 | (0.19) | | PCB-167 | (0.24) | |
| PCB-83 | (0.498) | | PCB-105 | (0.282) | | PCB-132 | (0.18) | | PCB-156/157 | [0.297] | J EMPC C |
| PCB-99 | 0.413 | J | PCB-127 | (0.281) | | PCB-133 | (0.171) | | PCB-169 | (0.238) | |
| PCB-112 | (0.281) | | PCB-126 | (0.192) | | | | | | | |
| | | | **Conc.** | 4.23 | | | | | **Conc.** | 2.67 | |
| | | | **EMPC** | 5.21 | | | | | **EMPC** | 4.01 | |

| Hepta | Conc. | Qualifiers | Hepta | Conc. | Qualifiers | Octa | Conc. | Qualifiers | Nona | Conc. | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-188 | (0.155) | | PCB-174 | (0.376) | | PCB-202 | (0.131) | | PCB-208 | (0.46) | |
| PCB-179 | [0.216] | J EMPC | PCB-177 | [0.35] | J EMPC | PCB-201 | (0.159) | | PCB-207 | (0.522) | |
| PCB-184 | (0.162) | | PCB-181 | (0.361) | | PCB-204 | (0.138) | | PCB-206 | (0.92) | |
| PCB-176 | (0.176) | | PCB-171/173 | (0.424) | C | PCB-197 | (0.147) | | | | |
| PCB-186 | (0.147) | | PCB-172 | (0.401) | | PCB-200 | (0.155) | | **Conc.** | 0 | |
| PCB-178 | (0.221) | | PCB-192 | (0.284) | | PCB-198/199 | (0.176) | C | **EMPC** | 0 | |
| PCB-175 | (0.4) | | PCB-180/193 | 0.855 | J C | PCB-196 | (0.195) | | | | |
| PCB-187 | (0.33) | | PCB-191 | (0.328) | | PCB-203 | (0.161) | | **Deca** | **Conc.** | **Qualifiers** |
| PCB-182 | (0.339) | | PCB-170 | (0.441) | | PCB-195 | [0.189] | J EMPC | PCB-209 | (0.253) | |
| PCB-183 | (0.359) | | PCB-190 | (0.313) | | PCB-194 | [0.217] | J EMPC | | | |
| PCB-185 | (0.438) | | PCB-189 | (0.174) | | PCB-205 | (0.162) | | | | |
| | | | **Conc.** | 0.855 | | **Conc.** | 0 | | | | |
| | | | **EMPC** | 1.42 | | **EMPC** | 0.406 | | | | |

**METHOD 1668C** **PCB ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name: SGS North America
Initial Calibration: ICAL: MM4-PCB_07AUG2023
Instrument ID: MM4 GC Column ID:
VER Data Filename: 231221S17 Analysis Date: 22-DEC-2023 02:28:20
Lab ID: OPR1_20707_PCB

| NATIVE ANALYTES | SPIKE CONC. (pg/uL) | RECOVERY (%) | RANGE (%) | | | OK |
|---|---|---|---|---|---|---|
| PCB-1 2-MoCB | 50 | 103 | 60 | - | 135 | Y |
| PCB-3 4-MoCB | 50 | 105 | 60 | - | 135 | Y |
| PCB-4 22'-DiCB | 50 | 98.5 | 60 | - | 135 | Y |
| PCB-15 44'-DiCB | 50 | 98.3 | 60 | - | 135 | Y |
| PCB-19 22'6-TrCB | 50 | 97 | 60 | - | 135 | Y |
| PCB-37 344'-TrCB | 50 | 93 | 60 | - | 135 | Y |
| PCB-54 22'66'-TeCB | 50 | 84.8 | 60 | - | 135 | Y |
| PCB-77 33'44'-TeCB | 50 | 90.7 | 60 | - | 135 | Y |
| PCB-81 344'5-TeCB | 50 | 80.3 | 60 | - | 135 | Y |
| PCB-104 22'466'-PeCB | 50 | 78.4 | 60 | - | 135 | Y |
| PCB-105 233'44'-PeCB | 50 | 91.2 | 60 | - | 135 | Y |
| PCB-114 2344'5-PeCB | 50 | 88.7 | 60 | - | 135 | Y |
| PCB-118 23'44'5-PeCB | 50 | 88.8 | 60 | - | 135 | Y |
| PCB-123 23'44'5'-PeCB | 50 | 84.4 | 60 | - | 135 | Y |
| PCB-126 33'44'5-PeCB | 50 | 108 | 60 | - | 135 | Y |
| PCB-155 22'44'66'-HxCB | 50 | 80.7 | 60 | - | 135 | Y |
| PCB-156/157 ...-HxCB | 100 | 92.9 | 60 | - | 135 | Y |
| PCB-167 23'44'55'-HxCB | 50 | 106 | 60 | - | 135 | Y |
| PCB-169 33'44'55'-HxCB | 50 | 106 | 60 | - | 135 | Y |
| PCB-188 22'34'566'-HpCB | 50 | 93.9 | 60 | - | 135 | Y |
| PCB-189 233'44'55'-HpCB | 50 | 90.8 | 60 | - | 135 | Y |
| PCB-202 22'33'55'66'-OcCB | 50 | 85.8 | 60 | - | 135 | Y |
| PCB-205 233'44'55'6-OcCB | 50 | 93.2 | 60 | - | 135 | Y |
| PCB-206 22'33'44'55'6-NoCB | 50 | 113 | 60 | - | 135 | Y |
| PCB-208 22'33'455'66'-NoCB | 50 | 89 | 60 | - | 135 | Y |
| PCB-209 DeCB | 50 | 93.2 | 60 | - | 135 | Y |

Contract-required recovery limits for OPR as specified in Table 6, Method 1668C.

Processed: 27 Dec 2023 10:10 Analyst: RB

**METHOD 1668C** **PCB ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

| | | | |
|---|---|---|---|
| Lab Name: | SGS North America | | |
| Initial Calibration: | ICAL: MM4-PCB_07AUG2023 | | |
| Instrument ID: | MM4 | GC Column ID: | |
| VER Data Filename: | 231221S17 | Analysis Date: | 22-DEC-2023 02:28:20 |
| Lab ID: | OPR1_20707_PCB | | |

| LABELED STANDARDS | SPIKE CONC. (pg/uL) | RECOVERY (%) | RANGE (%) | | | OK |
|---|---|---|---|---|---|---|
| ES PCB-1 | 100 | 65.2 | 15 | - | 145 | Y |
| ES PCB-3 | 100 | 63.1 | 15 | - | 145 | Y |
| ES PCB-4 | 100 | 83.1 | 15 | - | 145 | Y |
| ES PCB-15 | 100 | 69.7 | 15 | - | 145 | Y |
| ES PCB-19 | 100 | 79.3 | 15 | - | 145 | Y |
| ES PCB-37 | 100 | 62.7 | 15 | - | 145 | Y |
| ES PCB-54 | 100 | 85.9 | 15 | - | 145 | Y |
| ES PCB-77 | 100 | 70.8 | 40 | - | 145 | Y |
| ES PCB-81 | 100 | 71.4 | 40 | - | 145 | Y |
| ES PCB-104 | 100 | 89.9 | 40 | - | 145 | Y |
| ES PCB-105 | 100 | 73.9 | 40 | - | 145 | Y |
| ES PCB-114 | 100 | 72.7 | 40 | - | 145 | Y |
| ES PCB-118 | 100 | 72.3 | 40 | - | 145 | Y |
| ES PCB-123 | 100 | 71.7 | 40 | - | 145 | Y |
| ES PCB-126 | 100 | 68.4 | 40 | - | 145 | Y |
| ES PCB-153 | 100 | 84 | 40 | - | 145 | Y |
| ES PCB-155 | 100 | 71.8 | 40 | - | 145 | Y |
| ES PCB-156/157 | 200 | 61.9 | 40 | - | 145 | Y |
| ES PCB-167 | 100 | 57.9 | 40 | - | 145 | Y |
| ES PCB-169 | 100 | 58.9 | 40 | - | 145 | Y |
| ES PCB-170 | 100 | 102 | 40 | - | 145 | Y |
| ES PCB-180 | 100 | 99.9 | 40 | - | 145 | Y |
| ES PCB-188 | 100 | 95.6 | 40 | - | 145 | Y |
| ES PCB-189 | 100 | 79.6 | 40 | - | 145 | Y |
| ES PCB-202 | 100 | 91.3 | 40 | - | 145 | Y |
| ES PCB-205 | 100 | 89.4 | 40 | - | 145 | Y |
| ES PCB-206 | 100 | 99.5 | 40 | - | 145 | Y |
| ES PCB-208 | 100 | 95.9 | 40 | - | 145 | Y |
| ES PCB-209 | 100 | 95.1 | 40 | - | 145 | Y |
| CLEANUP STANDARDS | | | | | | |
| CS PCB-28 | 100 | 75 | 15 | - | 145 | Y |
| CS PCB-111 | 100 | 89 | 40 | - | 145 | Y |
| CS PCB-178 | 100 | 120 | 40 | - | 145 | Y |

Processed: 27 Dec 2023 10:10 Analyst: RB

# Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

| | |
|---|---|
| **Project Manager:** | *Tamara Burkamper* |
| **Receipt Date & Time:** | *17-Nov-23 at 09:23* |
| **AP Project name:** | *B8803* |
| **Requested TAT:** | *15 business days* |
| **Projected due date:** | *12-Dec-23* |
| **Matrix:** | *Soil* |
| **Phone#:** | *910-794-1613* |
| **Email Address:** | *Tamara.Burkamper@sgs.com* |

| | |
|---|---|
| **Company Contact:** | *Elvin Kumar* |
| **Company:** | *SGS North America Inc. - Orlando* |
| **Project Name & Site:** | *FC11168XW* |
| **Project PO#:** | *FC11168XW* |
| **QAAP/Contract #:** | *n/a* |
| **Requested Analysis:** | *M1668C , M1613B* |
| **Phone#:** | *408-612-9410* |
| **Email Address:** | elvin.kumar@sgs.com |

| Client Smp ID | AP Smp ID | Sample Condition & Notes | Quantity | Size | Sampling Date | Sampling Time | Received Temp (°C) | Container # | Shipping # |
|---|---|---|---|---|---|---|---|---|---|
| 01TB-TERMINAL | B8803_001 | SO | 1 | 8oz | 09-Nov-23 | 15:13 | 0.5 | 1 | 7024 6623 2486 |
| 01TB-BELOW-35 MLLW | B8803_002 | SO | 1 | 8oz | 09-Nov-23 | 15:30 | 0.5 | 1 | 7024 6623 2486 |
| 01TB-SURFACE TO-35 MLLW | B8803_003 | SO | 1 | 8oz | 09-Nov-23 | 16:25 | 0.5 | 1 | 7024 6623 2486 |

**Preservation Type:** **Sample Seals:** No

**Notes/Comments:**

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

*Received by: Malachi Clark* *Logged in by: Malachi Clark* *QC'ed by:* AEH 11/20/23

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

# CHAIN OF CUSTODY

B8803

"SGS North America Inc. - Orlando
4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com/ehsusa"



FED-EX Tracking #

Bottle Order Control #

SGS Quote #

SGS Job # FC11168XW

**Client / Reporting Information**

Company Name: SGS North America Inc.

Street Address: 4405 Vineland Rd, Suite C-15

City: Orlando State: FL Zip: 3281

Project Contact: Elvin.Kumar@sgs.com E-mail:

Phone #: 408-612-9410 Fax #:

Sampler(s) Name(s): ED Phone:

**Project Information**

Project Name: FC11168XW / Oakland Harbor

Street:

City: State:

Project #:

Client Purchase Order #:

Project Manager: Elvin Kumar

**Billing Information ( if different from Report to)**

Company Name:

Street Address:

City: State: Zip:

Attention: Elvin Kumar (Email Invoice)

**Requested Analysis ( see TEST CODE sheet)**

| SGS Sample # | Field ID / Point of Collection | MEOH/DI Vial # | Collection Date | Collection Time | Sampled by | Matrix | # of bottles | HCl | NaOH | HNO3 | H2SO4 | NONE | DI Water | MEOH | ENCORE | PCB Congeners (EPA 1668) | Dioxins/Furans (EPA 1613) | %MOISTURE (Report Data on Dry Weight Basis) | Standard EDD in Excel and EQUIS Format | LAB USE ONL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 XW | 01TB-TERMINAL | | 11/9/23 | 3:13:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |
| 2XW | 01TB-BELOW-35 MLLW | | 11/9/23 | 3:30:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |
| 11XW | 01TB-SURFACE TO-35 MLLW | | 11/9/23 | 4:25:00 PM | ED | SO | | | | | | | | | | X | X | X | X | |

Matrix Codes: DW - Drinking Wa; GW - Ground Wat; WW - Water; SW - Surface Wat; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liqui; AIR - Air; SOL - Other Soli; WP - Wipe; FB-Field Blank; EB-Equipment Bla; RB- Rinse Blank; TB-Trip Blank

Turnaround Time ( Business days)

Approved By (SGS PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [x] other Due Standard TAT

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" ( Level 2)
- [ ] FULLT1 ( Level 3+4 )
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C" X COMMBN
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results + QC Summary

Comments / Special Instructions

Sub to:
SGS - 5500 Business Drive, Wilmington, NC 28405 Phone: 910-350-1903
*Ship 1 x 8oz Glass Jar per sample

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|
| | 11/16/23 1600 | 1 | 2 | | 2 |
| Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
| | | 3 | 4 | | 4 |

2

BP8D3

ORIGIN ID:ORLA (407) 425-6700
SAMPLE RECEIVING
SGS NORTH AMERICA INC
4405 VINELAND ROAD
STE C15
ORLANDO, FL 32811
UNITED STATES US

SHIP DATE: 16NOV23
ACTWGT: 25.00 LB MAN
CAD: 0358759/CAFE3755

BILL SENDER

TO SAMPLE RECEIVINGS
SGS NORTH AMERICA INC.
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: SUBS - SGS WILMINGTON

14/17
4:27
0.8

FedEx Express

TRK# 0201 7024 6623 2486

FRI - 17 NOV 10:30A
PRIORITY OVERNIGHT

NG ILMA

28405
NC-US RDU

## Misc. Forms

### Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

# SGS North America Inc - Orlando

## Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : FC11168 PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

**Client / Reporting Information**

Company Name: Geosyntec Consultants
Address: 920 SW 6th Ave, Suite 600
City: Portland State: OR Zip: 97204
Project Contact: Erin Dunbar Email: edunbar@geosyntec.com
Phone #: 971-271-5916
Sampler(s) Name(s) (Printed)
Sampler 1: Erin Dunbar Sampler 2: Megan Ogburn

**Project Information**

Project Name: Oakland Harbor
Street
City: Oakland State: CA
Project #: PN61060
Fax #
Client Purchase Order # 1000539162

**Analytical Information**

| SGS Orlando Sample # | Field ID / Point of Collection | Collection Date | Collection Time | Sampled By | Matrix | Total # of Bottles | Other | None | HCl | NaOH | HNO3 | H2SO4 | NaOH+ZnAc | DI WATER | MEOH | PAHs 8270 | Pesticides 8081 | PCBs Congeners 8082/1668 | TOC 9060 | Dioxin/Furan 1613 | Butyltins Krone 1988 | Grain Size D422 | Metals 6020/7471 | Solids 2540 | Archive | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | OITB - Terminal | 11/9/23 | 1513 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 2 | OITB - Below -35 MLLW | 11/9/23 | 1530 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |
| 3 | Archive-02 | 11/9/23 | 1552 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 4 | Archive-03 | 11/9/23 | 1556 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 5 | Archive-04 | 11/9/23 | 1559 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 6 | Archive-01 | 11/9/23 | 1606 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 7 | Archive-08 | 11/9/23 | 1609 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 8 | Archive-05A | 11/9/23 | 1611 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 9 | Archive-07 | 11/9/23 | 1618 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 10 | Archive-05 | 11/9/23 | 1622 | ED | SOL | 1 | | X | | | | | | | | | | | | | | | | | X | |
| 11 | OITB - Surface to -35 MLLW | 11/9/23 | 1625 | ED | SOL | 6 | | X | | | | | | | | X | X | X | X | X | X | X | X | X | | |

INITIAL ASSESSMENT
LABEL VERIFICATION AK

**Matrix Codes**: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

**Turnaround Time ( Business days)**

- 10 Day (Business)
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Approved By: / Date:

Rush T/A Data Available VIA Email or Lablink

**Data Deliverable Information**

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD'S

**Comments / Remarks**

Metals include: As, Cr, Cd, Cu, Pb, Ni, Se, Ag, Zn, Hg

Sample Custody must be documented below each time samples change possession, including courier delivery.

| Relinquished by Sampler/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
|---|---|---|---|---|---|
| 1 Erin Dunbar Geosyntec | 11/10/23 1151 | 2 to FedEx | 3 | | 4 1000 11/11/23 |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | Relinquished By/Affiliation | Date Time: | Received By/Affiliation |
| 5 | | 6 | 7 | | 8 |

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 4.6 IR1

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FC11168XW: Chain of Custody
Page 1 of 2

# SGS Sample Receipt Summary

**Job Number:** fc11168 **Client:** Geosyntec Consultants **Project:** Oakland Harbor

**Date / Time Received:** 11/11/2023 10:00:00 AM **Delivery Method:** FedEx **Airbill #'s:** 786219631416

**Cooler Temps (Raw Measured) °C:** Cooler 1: (4.6);

**Cooler Temps (Corrected) °C:** Cooler 1: (5.0);

| Cooler Informatio | Y | or | N |
|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ |
| 3. Temp criteria achieved: | ☑ | | ☐ |
| 4. Cooler temp verification: | | IR Gun | |
| 5. Cooler media: | | Ice (Bag) | |

| Trip Blank Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |

| | W | or | S | N/A |
|---|---|---|---|---|
| 3. Type of TB Received | ☐ | | ☐ | ☑ |

| Sample Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ | |
| 2. Samples presented properly | ☑ | | ☐ | |
| 3. Suffiient volume/containers recv'd for analysi | ☑ | | ☐ | |
| 4. Condition of sample: | Intact | | | |
| 5. Sample recv'd within HT | ☑ | | ☐ | |
| 6. Dates/Times/IDs on COC match sample labe | ☑ | | ☐ | |
| 7. VOCs have headspace | ☐ | | ☐ | ☑ |
| 8. Bottles received for unspecified tests | ☐ | | ☑ | |
| 9. Compositing instructions clear | ☐ | | ☐ | ☑ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | | ☐ | ☑ |
| 11. % Solids Jar Received? | ☑ | | ☐ | ☐ |
| 12. Residual Chlorine Present? | ☐ | | ☐ | ☑ |

**Misc Information**

Number of Encores: 25 Gram 5 Gram Number of Lab Filtered Metals

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: _____ Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot _____

Comments

SM001
Rev. Date 05/04/17

Technician: DONM Date: 11/11/2023 3:46:04 PM Reviewer: ZD Date: 11/11/2023

**FC11168XW: Chain of Custody**
**Page 2 of 2**