

FINAL

# Semi-Annual Remediation Status Report February 2023 to August 2023

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Former Philadelphia Energy Solutions Refinery  
3144 West Passyunk Avenue, Philadelphia, PA

*Prepared for*

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August 2023

Project Number P044.001.008



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## Acronyms and Abbreviations

Act 2	<i>Land Recycling and Environmental Remediation Standards Act</i>
Act 32	<i>Storage Tank and Spill Prevention Act</i>
AST	aboveground storage tanks
CO&A	Consent Order and Agreement
ICE	internal combustion engine
the Facility	Former Philadelphia Energy Solutions Refinery, 3144 West Passyunk Avenue, Philadelphia, Pennsylvania
LNAPL	light non-aqueous phase liquid
MSCs	Medium Specific Concentrations
NIR	Notice of Intent to Remediate
NorthStar	NorthStar Contracting Group, Inc.
PADEP	Pennsylvania Department of Environmental Protection
PESRM	Philadelphia Energy Solutions Refining and Marketing LLC
Ransom	Ransom Consulting, LLC
SHS	Notice of Intent to Remediate
SSS	Site-Specific Standard
Stantec	Stantec Consulting Services, Inc.
SVE	soil vapor extraction
Terraphase	Terraphase Engineering Inc.



# 1 Introduction

On behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), Terraphase Engineering Inc. (Terraphase) has prepared this *Semi-Annual Remediation Status Report* (Status Report) to document the progress of activities being completed by PESRM to characterize and remediate certain areas of the Former Philadelphia Energy Solutions Refinery (former PES; the Facility). The Facility, which is undergoing demolition in preparation for redevelopment, is located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania.

The releases discussed in this *Status Report* do not include those which are associated with “Pre-Existing Contamination” as defined in the 2012 Consent Order and Agreement (CO&A)<sup>1</sup> among the Pennsylvania Department of Environmental Protection (PADEP), Evergreen<sup>2</sup>, and PESRM, which are being addressed by Evergreen. In accordance with the CO&A, PESRM has assumed responsibility for releases of hazardous or regulated substances from the Facility which have been identified to have occurred after September 8, 2012. The releases discussed herein are:

1. Historical releases that PESRM plans to close under the *Land Recycling and Environmental Remediation Standards Act* (Act 2) Program;
  - a) A 2019 release of light naphtha from an aboveground line near 136 process unit at the former refinery (136 Naphtha Release);
  - b) A 2013 release from a process sewer near the No. 3 separator at the former refinery (No. 3 Separator Release);
  - c) A 2018 release from the UDEX feed line at the former refinery (UDEX Feed Release);
2. Recent releases, which occurred during decommissioning and demolition of the former refinery;
  - a) A 2021 release from overhead piping near the 860 Unit Cooling Tower and Hartranft Street (860 Unit and Hartranft Street Release); and
  - b) A 2021 release from piping along the Dike Roadway near PB 881 (PB 881 Dike Roadway Release);
3. Potential releases identified during the decommissioning and closure of aboveground storage tanks (ASTs) which are being completed in accordance with the *Storage Tank and Spill Prevention Act* (Act 32) and 25 PA Code §245 (Subchapter D).

PESRM plans to remediate the releases identified above in accordance with applicable portions of Act 2, 25 PA Code §250, Act 32, and Subchapter D. The location of these release areas is shown on **Figure 1**.

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<sup>1</sup> August 14, 2012 CO&A as amended June 26, 2020 and referred to as the “Buyer-Seller Agreement”.

<sup>2</sup> Evergreen Resources Management Operations, a series of Evergreen Resources Group, LLC, is managing the legacy remedial work for Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC (“Evergreen”) and Sunoco (R&M), LLC. For clarity, Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) n/k/a Sunoco (R&M), LLC and Evergreen shall be referred to collectively as “Evergreen” in this Report.



The status of the characterization and remediation of each release area is discussed and summarized below.

This is the fourth *Status Report*. It discusses remedial activities completed during the period from February 1 through August 1, 2023. The next semi-annual *Status Report* will cover activities completed from August 1, 2023 through February 1, 2024.

## 2 Historical Releases

This section summarizes the status of historical releases that PESRM plans to close under the Act 2 Program.

### 2.1 136 Naphtha Release

On February 22, 2019, approximately 53,000 gallons of petroleum-product, identified as light naphtha, was released to the ground surface from defects in above-ground piping associated with former Process Unit 137, near the location of the former Unit 136. The petroleum-product was observed by Stantec Consulting Services, Inc. (Stantec) while on-site performing routine monitoring. The response actions included the removal of water and product from a nearby storm sewer and culvert and from test pits installed along the compromised product line via a vacuum truck. The removed water/product mixture was stored in a waste oil tank and then treated via the on-site wastewater treatment system. The defective section of product line was replaced with new above-ground piping.

In March 2019, Stantec collected 20 soil samples in the vicinity of the release to determine the extent of the impacted area. Samples from the area outside and surrounding the release were collected based on visual observation of the extent of the impacts. The samples were analyzed for the unleaded gasoline parameters (“unleaded gasoline short list”) listed in Table III-5 Short List of Petroleum Products from the PADEP’s (2021) *Land Recycling Program Technical Guidance Manual*.

Between November 25 and December 12, 2019, PESRM conducted an excavation of the soil impacted by the release. The excavation of surface soils was completed beneath approximately 130 feet of product piping that runs north to south, and then toward the storm sewer catch basin located approximately 50 feet to the east. The excavation was guided by visual observations of soil impacts and excavation depths ranged from approximately 2 to 6 feet below ground surface. Approximately 377 tons of soil were excavated and transported offsite for disposal at Clean Earth of New Castle, Delaware.

Post-excavation soil sampling<sup>3</sup> conducted by Stantec involved the collection of twelve samples from the excavation base and sidewalls. Samples were analyzed for unleaded gasoline short list parameters. The post-excavation soil sample results identified no chemicals at concentrations greater than the applicable PADEP Statewide Health Standards (SHS) Medium Specific Concentrations (MSCs).

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<sup>3</sup> Sample locations were chosen using a systematic random approach.



A Notice of Intent to Remediate (NIR) was submitted in June 2021 to address the soil-related impacts associated with the release under the non-residential SHS. Langan Engineering and Environmental Services, Inc. subsequently submitted a *Combined Remedial Investigation Report/Final Report* to PADEP on June 29, 2021, to document the remediation of the release area. PADEP identified technical deficiencies in the report in a letter dated August 26, 2021.

PESRM plans to address the technical deficiencies identified by PADEP and provide an updated Remedial Investigation Report/Final Report to PADEP once the deficiencies have been addressed.

## 2.2 No. 3 Separator Release

The No. 3 Separator Remediation System was a 10-well total fluids recovery system installed by Evergreen in 2012 to address light non-aqueous phase liquid (LNAPL) from a prior release in the area of the property along the Schuylkill River near the No. 3 oil-water separator. In 2013, PESRM assumed primary responsibility for the No. 3 Separator Remediation System due to petroleum releases from a process sewer system, which connected the 137 Unit to the No. 4 Separator.

PESRM continued to operate and monitor the recovery system until October 2021 when it was shut down due to the termination of the compressed air supply from the facility as part of decommissioning. The compressed air had been used to power the pneumatic pumps for the system. Increases in LNAPL thicknesses were periodically observed in the monitoring and recovery wells associated with the system between 2013 and October 2021. These occasions of increased thickness are likely associated with leaks from the adjacent process sewer. Increased LNAPL thickness/product recovery also coincided with the decommissioning of the 137 process unit during the spring and summer of 2021. Since the completion of decommissioning activities on August 16, 2021, the process sewer has been cleaned to remove residual oil.

After the shutdown of the plant air in October 2021, skimmer pumps have been used to remove measurable LNAPL from the monitoring and recovery wells associated with the No. 3 Separator Remediation System. Stantec (on behalf of PESRM) previously conducted bi-weekly LNAPL gauging of the monitoring and recovery wells. Stantec's LNAPL gauging data is presented in **Table 1**. LNAPL levels have been generally stable in the monitoring and recovery wells in this area since December 2021 with the exception of monitoring well C-169. The LNAPL level in C-169 increased in March and April 2022, and fluctuated in May and June 2022. When the measurable LNAPL thickness reaches 1 foot, a skimmer pump is used to remove the LNAPL from C-169. The LNAPL level in C-169 last exceeded 1 foot in September 2022; this increase in LNAPL coincided with the end of demolition of the 137 Process Unit. LNAPL levels have not exceeded 1 foot in C-169 since September 2022; however, the skimmer pump was utilized to remove free product in January 2023 when the LNAPL level reached 0.7 feet. As of January 2023, Stantec has reduced the gauging scope to routine gauging of recovery well C-169.

A NIR was submitted in March 2022 to address the soil and groundwater-related impacts associated with the release under the non-residential SHS. PESRM is continuing to conduct active monitoring associated with this release.



## 2.3 UDEX Release

In the summer of 2018, Stantec (on behalf of Evergreen) performed a routine annual well gauging event across the Facility. During their review and analysis of the data, Stantec identified LNAPL in two monitoring wells where LNAPL had not been previously identified (S-414 and S-283) and an increased LNAPL thickness in an additional well (S-382). In July 2018, Stantec (on behalf of Evergreen) collected samples of the LNAPL from the wells for analysis and fingerprint comparison to known products and refinery intermediates. The laboratory indicated that the LNAPL was a refinery intermediate called reformate. The laboratory also provided a basic interpretation indicating that the LNAPL collected from the two wells (that previously did not contain LNAPL) was a light petroleum distillate of unknown weathering degree. The LNAPL collected from the well with increased LNAPL thickness was chemically similar to the other samples, but also contained smaller amount of extremely weathered middle petroleum distillate. Based upon the results, it is believed that comingled LNAPL plumes are present in this area.

In late July 2018, PESRM identified a leak from an underground portion of a product line that conveyed reformate (a feed for the UDEX unit). The line was emptied, isolated, bypassed and replaced with a new aboveground line constructed in the same location as the underground line. PESRM has retained Stantec to characterize and remediate the release area. Multiple rounds of subsurface investigation have been conducted to characterize the nature and extent of the release. Additionally, over 96,000 gallons of free product was recovered from the subsurface by skimmer pumps operated at three recovery wells between September 2018 and November 2021, and over 24,000 gallons of free product was converted to vapor, extracted, and combusted during a pilot test of soil vapor extraction (SVE) technology between April 2021 and January 2022. A Full-Scale SVE Design Technical Memo was prepared by Stantec in February 2022 and was included in the August 2022 Status Report. The full-scale SVE system began operation in May 2022. The full scale SVE system initially used two internal combustion engine units, the Model V4 supplied by Remediation Services International, which consists of two 460 cubic inch V8 engines each. A third unit consisting of two single-engine Model V3 units plumbed together began operation on August 17, 2022. As of July 28, 2023, a total of 223,912 gallons of LNAPL were recovered/destroyed since UDEX release remediation activities began in 2018. A NIR was submitted in March 2022 to address the soil and groundwater-related impacts associated with the release under the non-residential SHS.

On March 1, 2023, Stantec identified that the internal combustion engine (ICE) Unit 407 overflowed a mixture of oil and water onto the ground surface that created a stain surrounding the ICE unit. Stantec estimated the volume released to the ground surface was approximately 20 gallons. The release was addressed promptly by shutting off the ICE unit, transferring the remaining condensate to an onsite holding tank, and placing granular clay absorbent and polyethylene sheeting on the stained area until soil excavation activities began. Approximately 24.5 cubic yards of stone/soil were removed during excavation activities on March 7, 2023. Confirmatory post-excavation and waste characterization samples were also collected. The post-excavation soil sample results identified no chemicals at concentrations greater than the applicable surface PADEP SHS MSCs and the waste characterization sample results met the disposal facility's criteria. Approximately 17 tons of excavated soil were transported offsite for disposal at Pure Soil Technologies of Farmingdale, New Jersey. To mitigate



potential future releases, secondary containments beneath the condensate collection drums and automatic shutoff high level float switches in each of the drums were installed. The response actions are summarized in the attached memorandum from Stantec (**Attachment B**) and will be further documented in future Act 2 reporting associated with UDEX Release remediation.

## 3 Releases During Decommissioning and Demolition

Below is a summary of the status of releases that have occurred during the decommissioning and demolition of the former refinery.

### 3.1 860 Unit Cooling Tower and Hartranft Street Release

On October 11, 2021, a petroleum release occurred during the removal of overhead pipelines within the pipe rack located near the 860 Unit Cooling Tower and Hartranft Street. The pipeline that caused the release was an out-of-service line used to remove water from two ASTs (PB-840 and PB-843) in the area. Both ASTs were formerly used to store crude oil. The total area of the release was approximately 1,600 square feet, and 1,200 square feet of this area is an asphalt roadway. NorthStar Contracting Group, Inc. (NorthStar) conducted immediate cleanup actions relating to the residual liquids remaining on the low-permeability asphalt. Soil located beneath this asphalt is not expected to have been impacted by the release. The remaining 400 square feet of the release occurred on soil adjacent to the asphalt.

NorthStar proceeded to conduct a limited soil excavation in the unpaved areas impacted by the release. Surficial soil up to 1 foot in depth was removed using an excavator and screened for signs of impact. Impacted soil was identified using a photoionization detector, olfactory evidence, and visual staining as indicators. Approximately 12 to 14 cubic yards of soil were removed and deposited in a roll-off container. On January 6, 2022, the excavated soil was transported to the Pure Soil Technologies facility in Jackson, New Jersey for disposal.

Following soil excavation, post-excavation soil sampling activities were conducted by NorthStar. Concentrations of the targeted constituents were either not detected above laboratory reporting limits or were detected at concentrations below the non-residential SHS MSCs.

A NIR was submitted in March 2022 to address the soil-related impacts associated with the release under the non-residential SHS. Shortly thereafter, PESRM submitted a Final Report for the site in March 2022. On May 20, 2022, PADEP issued a *Letter of Technical Deficiency* for the report that identified five technical deficiencies. On July 19, 2022, PESRM addressed these deficiencies and submitted a *Response to Letter of Technical Deficiency* to the PADEP, along with a revised version of the Final Report. PADEP issued a disapproval letter for the Final Report on September 15, 2022.

During May/June 2023, PESRM completed additional field activities to 1) define the limits of the prior excavation areas using geophysical methods and 2) perform soil sampling from borings installed along





the limits of the defined excavation. PESRM plans to discuss these findings with PADEP and present a path forward for Act 2 closure.

## 3.2 PB 881 Dike Roadway Release

On November 16, 2021, a petroleum/water mixture was released during the removal of overhead pipelines within the pipe rack located along the dike roadway west of the PB 881 tank containment dike. NorthStar was demolishing the tank infrastructure in the area at the time of the release. The pipeline that caused the releases was associated with ASTs that were formerly used to store crude oil. The releases to ground surface occurred in three distinct areas (“Areas 1, 2 and 3”), which were reported to be approximately 640, 300, and 160 square feet, respectively. NorthStar conducted a prompt interim response, including a product recovery and an excavation of obviously contaminated soil, immediately following discovery of the releases. Approximately 14 tons of soil excavated during this response effort were disposed off-site.

Following the excavation, PESRM developed and implemented a sampling plan to demonstrate attainment of the PADEP SHS and/or Site-Specific Standard (SSS) under Act 2. Sampling locations were selected at random via PADEP’s Systematic Random Sampling Workbook. The initial sampling results indicated that additional remediation was needed in one of the three impacted areas (Area 2). NorthStar conducted additional excavations in Area 2 in May and November 2022 and removed approximately 110 tons of additional soil from the area. The results from attainment sampling after completion of the additional excavation indicate that no additional remediation is warranted.

PESRM plans to seek release of liability for the Site via the SHS and SSS under Act 2. The soil sample results have demonstrated attainment of the SHS in each area, with the exception of the vapor intrusion exposure pathway, which will be managed under the SSS via pathway elimination. On June 13, 2023, PESRM issued a revised Notice of Intent to Remediate (NIR) the areas to PADEP under the SSS. On July 7, 2023, the City of Philadelphia requested development of a Public Involvement Plan (PIP) for the Site. PESRM has started the public involvement process for this release and anticipated holding a public information session during the second half of 2023.

## 4 Releases Identified during AST Closure

Removal of the ASTs and associated infrastructure began in December 2020. In accordance with Terraphase’s (2021) *Aboveground Storage Tank Closure Work Plan*, which was approved by the PADEP on April 23, 2021, site assessment sampling was initiated in May 2021 for tanks that had been adequately decommissioned and demolished to facilitate sampling. Bi-weekly status summary reports and teleconference calls have occurred since early May 2021 to document for PADEP the work performed as part of the AST closure effort.

As detailed in the *Aboveground Storage Tank Closure Work Plan*, the work is progressing in a phased approach and instead of submitting individual site assessment results, closure reports, and closure forms for individual tanks, the Site Assessment and Site Characterization results for tank groupings will



be documented in Tank Group Closure reports. The property has been divided into ten Tank Groups<sup>4</sup> (**Figure 2**). To date, demolition and Site Assessment/Site Characterization work has been performed in Tank Groups 01 through 07. Additional details relating to AST closure progress are available in Terraphase's *Bi-Weekly Status Summary Reports*, and updates to the AST closure program will be included in the next semi-annual Status Report. To date, releases have been identified in each Tank Group sampled. Site Characterization Reports have been submitted for Tank Groups 01, through 07. PESRM has received feedback from PADEP on the Site Characterization Reports for Tank Groups 01, 02, 03, 04, 05, and 07, and will address these comments in future submissions. Based on the findings of the site characterizations, releases in each tank group will be addressed through Corrective Action under Act 2 or Act 32.

## 5 Closing

Should you have any questions, please contact Joe Jeray ([jjeray@hilcoglobal.com](mailto:jjeray@hilcoglobal.com)) and Julianna Connolly ([jconnolly@hilcoglobal.com](mailto:jconnolly@hilcoglobal.com)) at Hilco Redevelopment Partners.

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<sup>4</sup> As of December 2022, aboveground storage tanks GP R 250 and GP R 251 have been re-assigned to Tank Group 07A due to inaccessibility for Site Assessment sampling and will be evaluated separately from Tank Group 07. In March 2023, Tank Group 09, located in the southern portion of the Girard Point Refinery, was added to the AST closure scope of work.

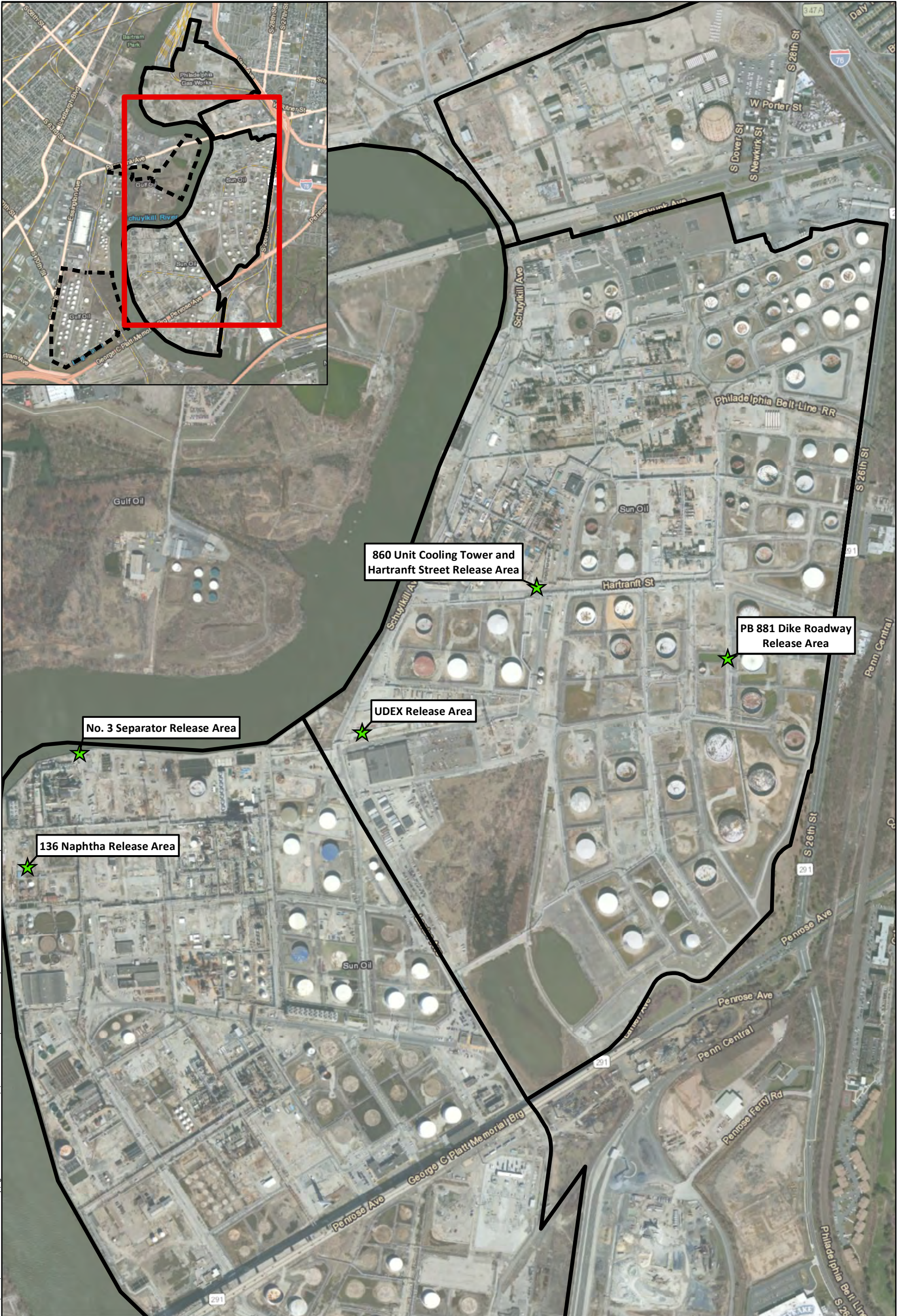


# Figures

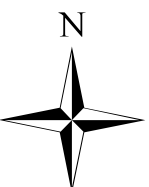
- 1 Post-2012 Release Areas Pursuing Act 2 Closure
- 2 Tank Groups







File: N:\GIS\PA\044.001\_PESRM-PES\MXD\Semi Annual Status Summary\Figure 1 - Release Areas.mxd 8/7/2023 Created by Mia Coordinate System: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 F U S



0 325 650  
 Feet  
 1 inch = 650 feet

Notes: Aerial imagery source Maxar 10/19/2019

**SAFETY FIRST**

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	August 2023 Semi-Annual Status Summary
PROJECT NUMBER:	P044.001.007

**Post-2012 Release Areas Pursuing Act 2 Closure**

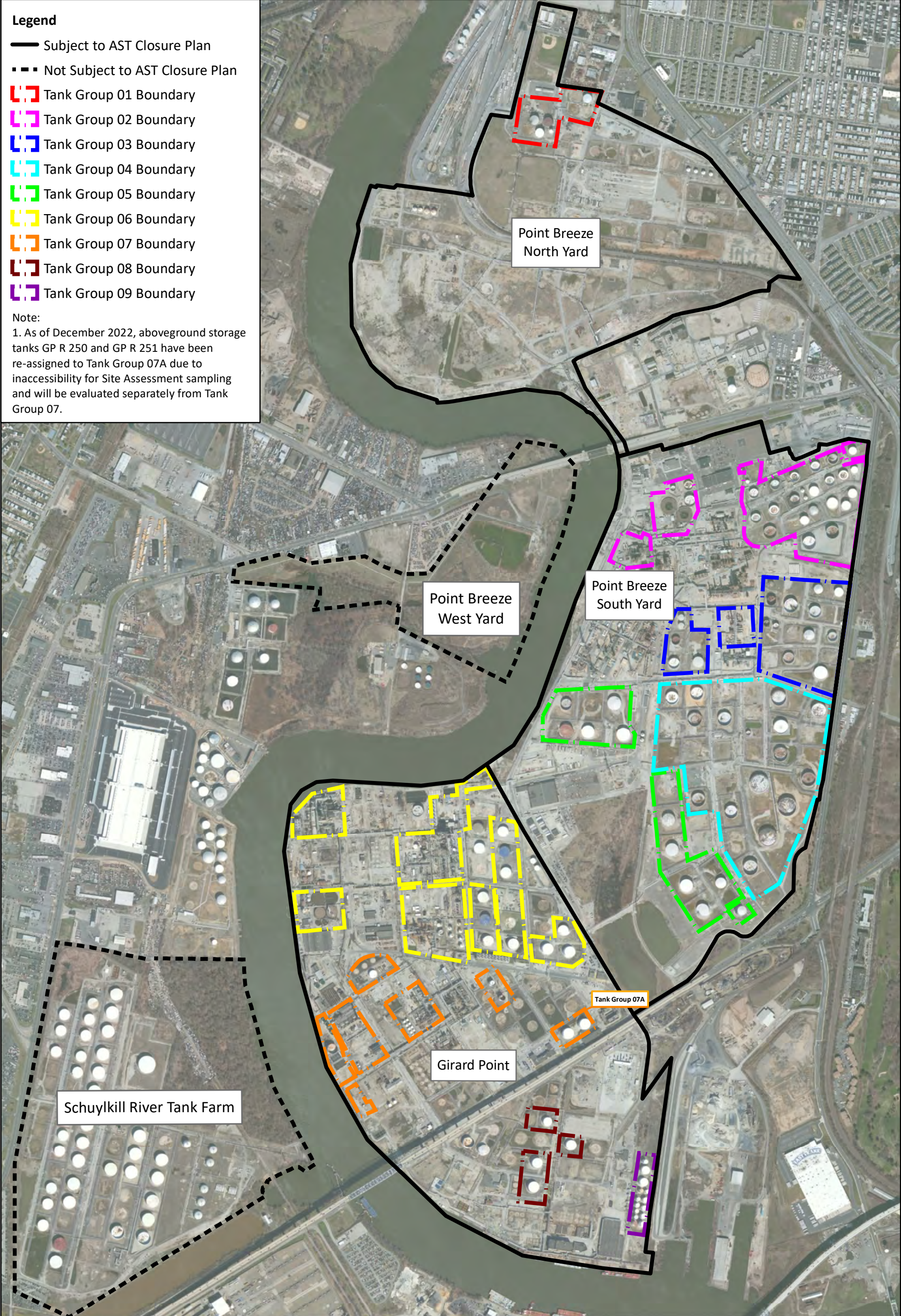
**Figure 1**



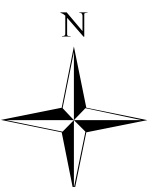
**Legend**

- Subject to AST Closure Plan
- - - Not Subject to AST Closure Plan
- ☐ Tank Group 01 Boundary
- ☐ Tank Group 02 Boundary
- ☐ Tank Group 03 Boundary
- ☐ Tank Group 04 Boundary
- ☐ Tank Group 05 Boundary
- ☐ Tank Group 06 Boundary
- ☐ Tank Group 07 Boundary
- ☐ Tank Group 08 Boundary
- ☐ Tank Group 09 Boundary

**Note:**  
 1. As of December 2022, aboveground storage tanks GP R 250 and GP R 251 have been re-assigned to Tank Group 07A due to inaccessibility for Site Assessment sampling and will be evaluated separately from Tank Group 07.



File: N:\GIS\PI\P044.001\_PESRM-PES\MXDs\Annual Status Summary\Figure 2 - Tank Groups.mxd 8/7/2023 Created by: Mia Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet



0 500 1,000  
 Feet  
 1 inch = 1,000 feet

Notes: Aerial imagery source Maxar 10/19/2019

**SAFETY FIRST**

CLIENT:	Philadelphia Energy Solutions Refining and Marketing LLC
PROJECT:	August 2023 Semi-Annual Status Summary
PROJECT NUMBER:	P044.001.007

**Tank Groups**

**Figure 2**



# Attachment A

## Table 1 - 3 Separator LNAPL Gauging Data



Table 1

## 3 Separator LNAPL Gauging Data

Well ID	Gauging Date	LNAPL Thickness (feet)
C-169	2/7/2023	0.01
C-169	2/16/2023	0.04
C-169	3/7/2023	0.02
C-169	3/16/2023	0.01
C-169	3/23/2023	0.01
C-169	3/29/2023	0.02
C-169	4/13/2023	0.04
C-169	4/20/2023	0.01
C-169	4/26/2023	0.01
C-169	5/3/2023	0.01
C-169	5/10/2023	0.01
C-169	5/16/2023	0.06
C-169	5/23/2023	0.07
C-169	5/31/2023	0.11
C-169	6/7/2023	0.09
C-169	6/20/2023	0.15
C-169	6/27/2023	0.06
C-169	7/19/2023	0.01
C-169	7/26/2023	0.02

## Notes

LNAPL - light non-aqueous phase liquid

N/A - not applicable (no LNAPL observed)

LNAPL thickness is in feet and was measured with an optical interface probe (OIP) to the nearest one hundredth of a foot

Gauging in December 2022 was limited due to on-site flooding.

# Attachment B

## Stantec Condensate Release Memorandum





To: Joseph Jeray P.E.  
Hilco Redevelopment Partners  
PESRM  
3144 West Passyunk Ave.  
Philadelphia, PA 19145-5208

From: Andrew Klingbeil P.G.  
Stantec Consulting Services Inc.  
1060 Andrew Drive Suite 140  
West Chester PA 19380-5602

Project/File: 213403039      Date: July 21, 2023

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**Reference: PESRM UDEX Release – ICE Unit 407 Condensate Release Cleanup**

The purpose of this memo is to document the occurrence of a surface release of oily condensate during operation of a soil vapor extraction (SVE) remediation system at the Philadelphia Energy Solutions Refining and Marketing LLC (PESRM) former PES refinery. Stantec Consulting Services Inc. (Stantec) operates and maintains the remediation system on behalf of PESRM for cleanup of the UDEX feed underground line release (UDEX release). A summary of the incident and ensuing corrective actions undertaken by Stantec in response to the incident follows.

***Discovery of Release***

On the morning of March 1, 2023, Stantec's operations and maintenance (O&M) technician arrived at the UDEX release area and observed that the condensate collection vessel associated with internal combustion engine (ICE) Unit 407 had overflowed and released a mixture of oil and water to the ground surface (see **Figure 1** for general location). The released fluids had created a stain on the crushed stone surface enveloping the vessel, which is a 55-gallon drum. The drum is third in a series of condensate collection vessels for the ICE unit, which includes a knockout pot/filter, 30-gallon onboard knockout tank, and transfer pump. Based on the number of transfer pump cycles and the estimated volume of fluids pumped per cycle, the volume released to the ground surface was estimated at approximately 20 gallons. Soil staining was noted to occupy an approximately 300 square foot area and remained within the stone parking area.

Stantec's technician shut off Unit 407 at the time of the discovery and manually transferred condensate remaining in the drum to the project's onsite holding tank for future disposal. Stantec notified PESRM of the release and planned corrective actions on March 2, 2023. The Pennsylvania Department of Environmental Protection (PADEP) was not notified of the release because the condensate drum is not part of a regulated tank system, the release did not threaten waters of the Commonwealth of Pennsylvania, the release occurred within an area already undergoing remediation under Pennsylvania Act 2, and the released volume of oil was estimated to be less than the 25 gallon threshold specified in the PESRM facility's Integrated Spill Response Plan (ISRP).

***Corrective Actions***

On March 3, 2023, ACV Enviro Corporation (ACV), Stantec's subcontractor, applied granular clay absorbent to the stained area and covered it with polyethylene sheeting to contain and isolate the release until soil excavation activities could commence. The condensate drum was temporarily placed into a poly

**Reference:** PESRM UDEX Release – ICE Unit 407 Condensate Release Cleanup

salvage/overpack drum for secondary containment while the SVE system resumed normal operation. On March 7, 2023, ACV returned to the release area with a backhoe and scraped the stained stone/soil into a roll off container. During excavation activities, Stantec provided full-time field oversight and observed that the staining was limited to surface soil only.

After approximately 24.5 cubic yards (cy) of stone/soil had been removed and placed into a roll off container, Stantec's technician collected eight confirmatory grab samples, spaced equidistantly, from the bottom and sidewalls of the excavation (0.8 to 0.9 feet below ground surface [bgs]) to scan for volatile organic compounds (VOCs) using a photoionization detector (PID). In accordance with Title 25 of the Pennsylvania Code (Chapter 250.707[b][1][iii][B][VI]), two of the eight soil samples that exhibited the highest concentrations of VOCs were selected for laboratory analysis of petroleum hydrocarbon compounds by SGS North America (SGS) of Dayton, New Jersey. Analytical results for the biased confirmation samples are summarized in **Table 1** and the laboratory analytical report is provided as **Attachment 1**. Following soil excavation activities, ACV regraded the area. Placement of clean fill was not warranted due to the relatively small volume of soil removed.

On March 16, 2023, a 3-point composite and grab sample were collected from the roll off container by a Stantec technician and submitted to Eurofins Lancaster Laboratories Environment Testing LLC (ELLE) of Lancaster, Pennsylvania, for waste characterization purposes. Following receipt of waste characterization results (**Attachment 2**) and confirmation that the results met the disposal facility's criteria, on May 24, 2023, Pure Soil Technologies of Farmingdale, New Jersey, received the approximately 17 tons of soil that had been excavated from the ICE Unit 407 oil/water condensate release area for disposal (**Attachment 3**).

To mitigate the potential of future condensate releases, the four ICE units operating in the UDEX release area were outfitted with secondary containment beneath the condensate collection drums. In addition, float switches were installed into each drum and wired directly into each ICE controller to automatically shut off the engine(s) each time the condensate level approaches a full condition.

### **Summary**

The estimated 20 gallons of oily condensate that overflowed from ICE Unit 407 condensate drum during the overnight hours between February 28 and March 1, 2023, was not immediately reported to the PADEP as the release was not part of a regulated tank system, the release did not threaten waters of the Commonwealth of Pennsylvania, the release occurred within an area already undergoing remediation under Pennsylvania Act 2, and the released volume of oil was estimated to be less than the 25 gallon threshold specified in the PESRM facility's ISRP. Additionally, post-excavation confirmatory soil sampling analytical results indicated no exceedances of PADEP Statewide Health Standards (SHS) for surface soil for the compounds that were analyzed. The potential for future releases to occur due to ICE unit remedial operations in the UDEX release area is low and has been mitigated further through the installation of secondary containment and automatic shutoff high level float switches in each of the condensate drums. No further action is warranted.

**Reference: PESRM UDEX Release – ICE Unit 407 Condensate Release Cleanup**

Regards,

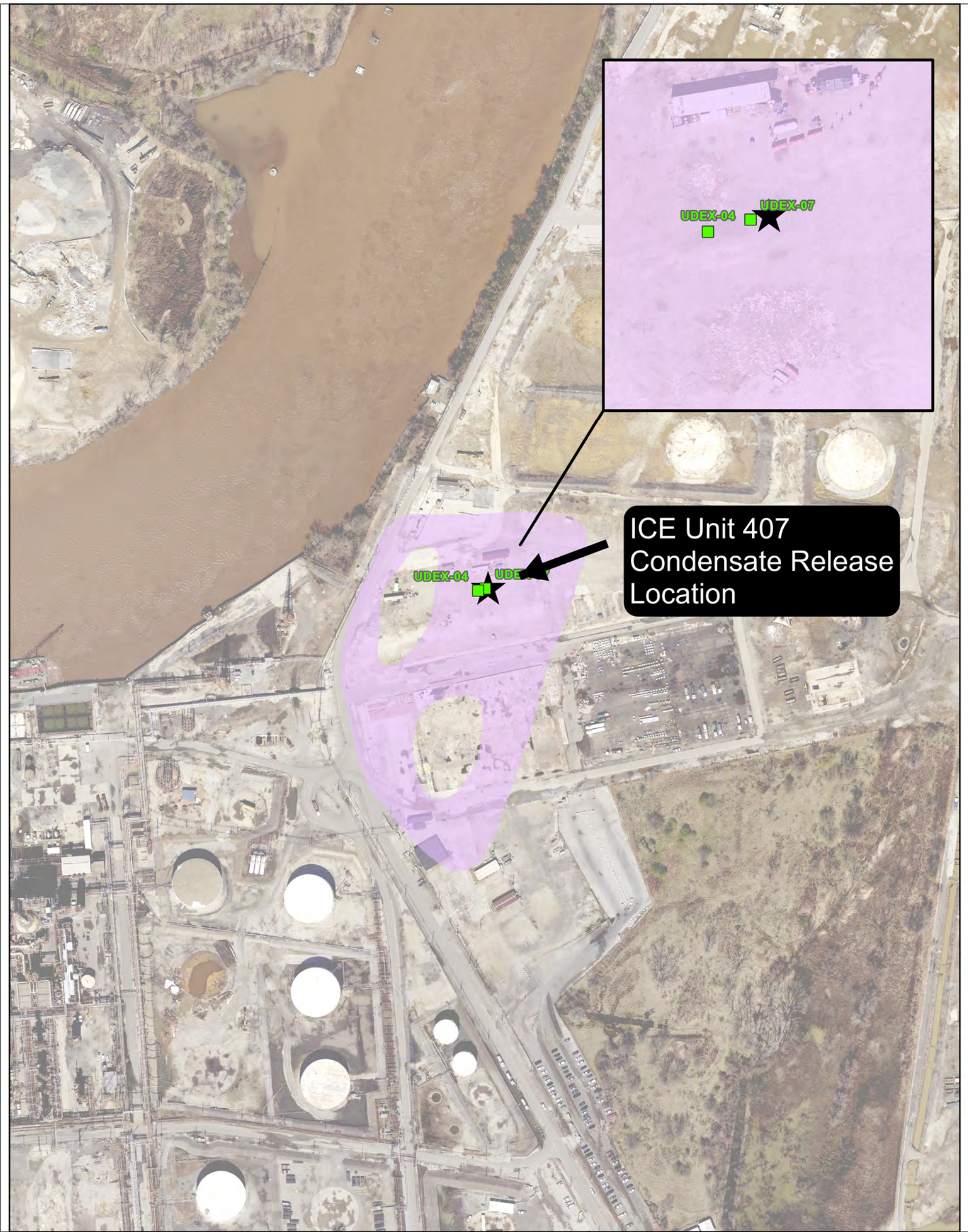
**STANTEC CONSULTING SERVICES INC.**



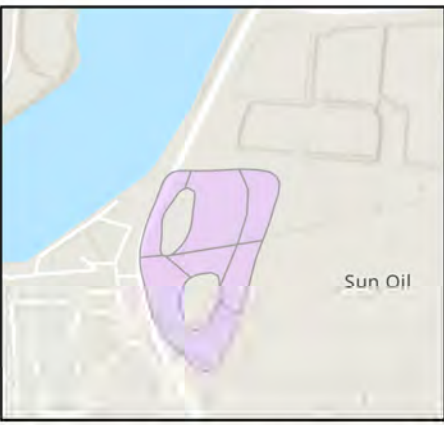
**Andrew Klingbeil** P.G.  
Associate Geologist  
Phone: 610-840-2525  
Mobile: 610-850-1420  
andrew.klingbeil@stantec.com

Attachment: Figure 1: PESRM UDEX Release ICE Unit 407 Condensate Release Location  
Table 1: Post-Excavation Soil Sample Analytical Results  
Attachment 1: Post-Excavation Soil Laboratory Analytical Report  
Attachment 2: Waste Characterization Laboratory Analytical Report  
Attachment 3: Non-Hazardous Waste Manifest for Excavated Soil

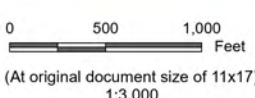




**ICE Unit 407  
Condensate Release  
Location**



- Legend**
- UDEX Release Remediation Area
  - ★ ICE Unit 407 Release Location
  - Confirmation Soil Samples Selected for Laboratory Analysis



**Project Location**  
City of Philadelphia, Philadelphia County, PA

**Client/Project**  
PHILADELPHIA ENERGY SOLUTIONS  
REFINING & MARKETING LLC  
FORMER PHILADELPHIA REFINING COMPLEX  
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

**Figure No.**  
**1**

**Title**  
**PESRM UDEX RELEASE  
ICE UNIT 407 CONDENSATE  
RELEASE LOCATION**

**Notes**

1. Vertical Datum: North American Vertical Datum of 1988 (NAVD 88)
2. Coordinate System: NAD 1983 State Plane Pennsylvania South FIPS 3702 Feet
3. 2022 aerial photography obtained from the Pennsylvania Spatial Data Access (PASDA) mapping service
4. Source: Stantec
5. Service Layer Credits: Sources: ESRI
6. ICE = internal combustion engine

C:\Users\slawling\OneDrive - Stantec\Documents\release\_map\fig\_1\_pesrm\_udex\_407release\_20230714r1.aprx Revised: 2023-07-24 By: akingbell



**Table 1 - Post-Excavation Soil Sample Analytical Results  
PESRM UDEX Release - ICE Unit 407 Condensate Release Cleanup**

Sample Location			UDEX-04_0.8-0.9_20230307	UDEX-07_0.8-0.9_20230307
Sample Date			7-Mar-23	7-Mar-23
Sample ID			UDEX-04_0.8-0.9_20230307	UDEX-07_0.8-0.9_20230307
Sample Depth			0.8 - 0.9 ft	0.8 - 0.9 ft
Sampling Company			STANTEC	STANTEC
Laboratory			SGSA	SGSA
Laboratory Work Order			JD61677	JD61677
Laboratory Sample ID	Units	SHS-PA (0 - 2 ft)	JD61677-4	JD61677-5
<b>Volatile Organic Compounds</b>				
BENZENE	mg/kg	0.5	ND (0.00050)	ND (0.00051)
CYCLOHEXANE	mg/kg	6,900	ND (0.00072)	ND (0.00073)
1,2-DIBROMOETHANE (EDB)	mg/kg	0.005	ND (0.00046)	ND (0.00047)
1,2-DICHLOROETHANE (EDC)	mg/kg	0.5	ND (0.00052)	ND (0.00052)
ETHYLBENZENE	mg/kg	70	0.0011	ND (0.00050)
ISOPROPYLBENZENE (CUMENE)	mg/kg	2,500	0.0074	0.0046
METHYL TERTIARY BUTYL ETHER	mg/kg	2	ND (0.00051)	ND (0.00052)
HEXANE	mg/kg	5,300	0.0016 J	ND (0.0011)
NAPHTHALENE	mg/kg	25	ND (0.0027)	ND (0.0028)
BUTYLBENZENE, SEC-	mg/kg	2,300	0.0121	0.0088
BUTYLBENZENE, TERT-	mg/kg	1,800	0.0011 J	0.00092 J
TOLUENE	mg/kg	100	0.0035	ND (0.00058)
1,2,4-TRIMETHYLBENZENE	mg/kg	300	0.0081	0.0045
1,3,5-TRIMETHYLBENZENE	mg/kg	93	0.0371	0.0304
XYLENES, TOTAL (DIMETHYLBENZENE)	mg/kg	1,000	0.0013	ND (0.00051)
<b>Semi-Volatile Organic Compounds</b>				
ACENAPHTHENE	mg/kg	4,700	0.340	0.305
ANTHRACENE	mg/kg	350	ND (0.021)	ND (0.11)
BENZO(A)ANTHRACENE	mg/kg	130	0.0369	0.0545 J
BENZO(A)PYRENE	mg/kg	46	0.0378	ND (0.078)
BENZO(B)FLUORANTHENE	mg/kg	76	0.0444	ND (0.076)
BENZO(G,H,I)PERYLENE	mg/kg	180	0.0283 J	ND (0.086)
BENZO(K)FLUORANTHENE	mg/kg	76	0.0197 J	ND (0.080)
1,1'-BIPHENYL	mg/kg	1.5	0.129	0.0485 J
BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	130	0.0316 J	ND (0.040)
DI-N-BUTYL PHTHALATE	mg/kg	4,000	ND (0.0056)	ND (0.028)
CHRYSENE	mg/kg	230	0.0544	ND (0.054)
DIBENZ(A,H)ANTHRACENE	mg/kg	22	ND (0.015)	ND (0.076)
DIETHYL PHTHALATE	mg/kg	7,800	ND (0.0074)	ND (0.037)
2,4-DIMETHYLPHENOL	mg/kg	190	ND (0.062)	ND (0.31)
2,4-DINITROPHENOL	mg/kg	19	ND (0.13)	ND (0.65)
FLUORANTHENE	mg/kg	3,200	0.0994	0.0852 J
FLUORENE	mg/kg	3,800	0.665	0.484
INDENO(1,2,3-C,D)PYRENE	mg/kg	76	0.0250 J	ND (0.081)
2-METHYLNAPHTHALENE	mg/kg	100	0.0971	0.0793 J
CRESOL, M,P- (3&4-METHYLPHENOL)	mg/kg	49 <sub>s2</sub>	ND (0.028)	ND (0.14)
CRESOL, O- (2-METHYLPHENOL)	mg/kg	490	ND (0.022)	ND (0.11)
4-NITROPHENOL	mg/kg	6	ND (0.092)	ND (0.46)
PHENANTHRENE	mg/kg	10,000	0.870	0.500
PHENOL	mg/kg	200	ND (0.018)	ND (0.090)
PYRENE	mg/kg	2,200	0.152	0.103 J
PYRIDINE	mg/kg	9.7	ND (0.012)	ND (0.059)
QUINOLINE	mg/kg	0.31	ND (0.0060)	ND (0.030)
<b>Metals</b>				
COBALT, Total	mg/kg	130	5.8	ND (5.1)
LEAD, Total	mg/kg	450	86.0	4.6
NICKEL, Total	mg/kg	650	30.8	20.3
VANADIUM, Total	mg/kg	220	16.6	7.0
ZINC, Total	mg/kg	12,000	1,650	24.1

**Notes:**

- SHS-PA Pennsylvania Department of Environmental Protection - Statewide Health Standards
- 15.2 Measured concentration did not exceed the indicated standard.
- ND (0.03) Concentration not detected above the method detection limit (in parentheses).
- J Indicates an estimated value.
- s2 Cresol, m&p (3-Methylphenol & 4-Methylphenol) co-elute and are reported as the summation of the co-eluting compounds. Standard shown is the stricter of the two.
- mg/kg Milligrams per kilogram
- ft feet
- SGSA SGS North America Inc.

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

*e-Hardcopy 2.0*  
*Automated Report*

## Technical Report for

**Sunoco/Evergreen**

**SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA**

**213403039**

**SGS Job Number: JD61677**

**Sampling Date: 03/07/23**



### Report to:

**Stantec**  
**1060 Andrew Drive Suite 140**  
**West Chester, PA 19380**  
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**Jennifer.Mulqueen@stantec.com**  
**ATTN: Jennifer Menges**

**Total number of pages in report: 60**



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.

**David Chastain**  
**General Manager**

**Client Service contact: Victoria Pushkova 732-329-0200**

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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## Sample Summary

Sunoco/Evergreen

**Job No:** JD61677

SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Project No: 213403039

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:

Organics ND = Not detected above the MDL

JD61677-1	03/07/23	09:45 TL	03/08/23	SO	Soil	UDEX-01_0.8-0.9_20230307
JD61677-2	03/07/23	09:47 TL	03/08/23	SO	Soil	UDEX-02_0.8-0.9_20230307
JD61677-3	03/07/23	09:50 TL	03/08/23	SO	Soil	UDEX-03_0.8-0.9_20230307
JD61677-4	03/07/23	09:55 TL	03/08/23	SO	Soil	UDEX-04_0.8-0.9_20230307
JD61677-5	03/07/23	10:08 TL	03/08/23	SO	Soil	UDEX-07_0.8-0.9_20230307

---

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



## Summary of Hits

**Job Number:** JD61677  
**Account:** Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA  
**Collected:** 03/07/23

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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**JD61677-4 UDEX-04\_0.8-0.9\_20230307**

sec-Butylbenzene <sup>a</sup>	0.0121	0.0022	0.00047	mg/kg	SW846 8260D
tert-Butylbenzene <sup>a</sup>	0.0011 J	0.0022	0.00055	mg/kg	SW846 8260D
Ethylbenzene <sup>a</sup>	0.0011	0.0011	0.00050	mg/kg	SW846 8260D
Hexane <sup>a</sup>	0.0016 J	0.0055	0.0011	mg/kg	SW846 8260D
Isopropylbenzene <sup>a</sup>	0.0074	0.0022	0.0016	mg/kg	SW846 8260D
Toluene <sup>a</sup>	0.0035	0.0011	0.00058	mg/kg	SW846 8260D
1,2,4-Trimethylbenzene <sup>a</sup>	0.0081	0.0022	0.00055	mg/kg	SW846 8260D
1,3,5-Trimethylbenzene <sup>a</sup>	0.0371	0.0022	0.00047	mg/kg	SW846 8260D
Xylene (total) <sup>a</sup>	0.0013	0.0011	0.00050	mg/kg	SW846 8260D
Acenaphthene	0.340	0.035	0.012	mg/kg	SW846 8270E
Benzo(a)anthracene	0.0369	0.035	0.0098	mg/kg	SW846 8270E
Benzo(a)pyrene	0.0378	0.035	0.016	mg/kg	SW846 8270E
Benzo(b)fluoranthene	0.0444	0.035	0.015	mg/kg	SW846 8270E
Benzo(g,h,i)perylene	0.0283 J	0.035	0.017	mg/kg	SW846 8270E
Benzo(k)fluoranthene	0.0197 J	0.035	0.016	mg/kg	SW846 8270E
1,1'-Biphenyl	0.129	0.069	0.0047	mg/kg	SW846 8270E
Chrysene	0.0544	0.035	0.011	mg/kg	SW846 8270E
bis(2-Ethylhexyl)phthalate	0.0316 J	0.069	0.0081	mg/kg	SW846 8270E
Fluoranthene	0.0994	0.035	0.015	mg/kg	SW846 8270E
Fluorene	0.665	0.035	0.016	mg/kg	SW846 8270E
Indeno(1,2,3-cd)pyrene	0.0250 J	0.035	0.016	mg/kg	SW846 8270E
2-Methylnaphthalene	0.0971	0.035	0.0078	mg/kg	SW846 8270E
Phenanthrene	0.870	0.035	0.012	mg/kg	SW846 8270E
Pyrene	0.152	0.035	0.011	mg/kg	SW846 8270E
Cobalt	5.8	5.4		mg/kg	SW846 6010D
Lead	86.0	2.1		mg/kg	SW846 6010D
Nickel	30.8	4.3		mg/kg	SW846 6010D
Vanadium	16.6	5.4		mg/kg	SW846 6010D
Zinc	1650	27		mg/kg	SW846 6010D

**JD61677-5 UDEX-07\_0.8-0.9\_20230307**

sec-Butylbenzene <sup>a</sup>	0.0088	0.0022	0.00048	mg/kg	SW846 8260D
tert-Butylbenzene <sup>a</sup>	0.00092 J	0.0022	0.00056	mg/kg	SW846 8260D
Isopropylbenzene <sup>a</sup>	0.0046	0.0022	0.0016	mg/kg	SW846 8260D
1,2,4-Trimethylbenzene <sup>a</sup>	0.0045	0.0022	0.00056	mg/kg	SW846 8260D
1,3,5-Trimethylbenzene <sup>a</sup>	0.0304	0.0022	0.00048	mg/kg	SW846 8260D
Acenaphthene	0.305	0.17	0.059	mg/kg	SW846 8270E
Benzo(a)anthracene	0.0545 J	0.17	0.049	mg/kg	SW846 8270E
1,1'-Biphenyl	0.0485 J	0.34	0.024	mg/kg	SW846 8270E
Fluoranthene	0.0852 J	0.17	0.077	mg/kg	SW846 8270E
Fluorene	0.484	0.17	0.079	mg/kg	SW846 8270E
2-Methylnaphthalene	0.0793 J	0.17	0.039	mg/kg	SW846 8270E

## Summary of Hits

**Job Number:** JD61677  
**Account:** Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA  
**Collected:** 03/07/23

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
		0.500	0.17	0.058	mg/kg	SW846 8270E
		0.103 J	0.17	0.055	mg/kg	SW846 8270E
		4.6	2.0		mg/kg	SW846 6010D
		20.3	4.1		mg/kg	SW846 6010D
		7.0	5.1		mg/kg	SW846 6010D
		24.1	5.1		mg/kg	SW846 6010D

(a) Sample was not collected per 5035A specifications. Sample preserved from intact soil by laboratory.

Sample Results

---

Report of Analysis

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# Report of Analysis

<b>Client Sample ID:</b> UDEX-04_0.8-0.9_20230307	
<b>Lab Sample ID:</b> JD61677-4	<b>Date Sampled:</b> 03/07/23
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 03/08/23
<b>Method:</b> SW846 8260D SW846 5035	<b>Percent Solids:</b> 95.0
<b>Project:</b> SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	Y199112.D	1	03/13/23 17:09	PS	03/10/23 13:00	n/a	VY8710
Run #2							

Run #	Initial Weight
Run #1	4.8 g
Run #2	

### VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.00055	0.00050	mg/kg	
135-98-8	sec-Butylbenzene	0.0121	0.0022	0.00047	mg/kg	
98-06-6	tert-Butylbenzene	0.0011	0.0022	0.00055	mg/kg	J
110-82-7	Cyclohexane	ND	0.0022	0.00072	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0011	0.00046	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0011	0.00052	mg/kg	
100-41-4	Ethylbenzene	0.0011	0.0011	0.00050	mg/kg	
110-54-3	Hexane	0.0016	0.0055	0.0011	mg/kg	J
98-82-8	Isopropylbenzene	0.0074	0.0022	0.0016	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0011	0.00051	mg/kg	
91-20-3	Naphthalene	ND	0.0055	0.0027	mg/kg	
108-88-3	Toluene	0.0035	0.0011	0.00058	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.0081	0.0022	0.00055	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	0.0371	0.0022	0.00047	mg/kg	
1330-20-7	Xylene (total)	0.0013	0.0011	0.00050	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-124%
17060-07-0	1,2-Dichloroethane-D4	95%		75-133%
2037-26-5	Toluene-D8	96%		79-125%
460-00-4	4-Bromofluorobenzene	95%		58-148%

(a) Sample was not collected per 5035A specifications. Sample preserved from intact soil by laboratory.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting 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

<b>Client Sample ID:</b> UDEX-04_0.8-0.9_20230307	<b>Date Sampled:</b> 03/07/23
<b>Lab Sample ID:</b> JD61677-4	<b>Date Received:</b> 03/08/23
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 95.0
<b>Method:</b> SW846 8270E SW846 3546	
<b>Project:</b> SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CT1514.D	1	03/15/23 02:13	RS	03/13/23 11:05	OP45190	ECT67
Run #2							

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

### ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	0.17	0.062	mg/kg	
51-28-5	2,4-Dinitrophenol	ND	0.17	0.13	mg/kg	
95-48-7	2-Methylphenol	ND	0.069	0.022	mg/kg	
	3&4-Methylphenol	ND	0.069	0.028	mg/kg	
100-02-7	4-Nitrophenol	ND	0.35	0.092	mg/kg	
108-95-2	Phenol	ND	0.069	0.018	mg/kg	
83-32-9	Acenaphthene	0.340	0.035	0.012	mg/kg	
120-12-7	Anthracene	ND	0.035	0.021	mg/kg	
56-55-3	Benzo(a)anthracene	0.0369	0.035	0.0098	mg/kg	
50-32-8	Benzo(a)pyrene	0.0378	0.035	0.016	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0444	0.035	0.015	mg/kg	
191-24-2	Benzo(g,h,i)perylene	0.0283	0.035	0.017	mg/kg	J
207-08-9	Benzo(k)fluoranthene	0.0197	0.035	0.016	mg/kg	J
92-52-4	1,1'-Biphenyl	0.129	0.069	0.0047	mg/kg	
218-01-9	Chrysene	0.0544	0.035	0.011	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.035	0.015	mg/kg	
84-74-2	Di-n-butyl phthalate	ND	0.069	0.0056	mg/kg	
84-66-2	Diethyl phthalate	ND	0.069	0.0074	mg/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	0.0316	0.069	0.0081	mg/kg	J
206-44-0	Fluoranthene	0.0994	0.035	0.015	mg/kg	
86-73-7	Fluorene	0.665	0.035	0.016	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0250	0.035	0.016	mg/kg	J
91-57-6	2-Methylnaphthalene	0.0971	0.035	0.0078	mg/kg	
85-01-8	Phenanthrene	0.870	0.035	0.012	mg/kg	
129-00-0	Pyrene	0.152	0.035	0.011	mg/kg	
110-86-1	Pyridine	ND	0.069	0.012	mg/kg	
91-22-5	Quinoline	ND	0.17	0.0060	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	67%		10-99%
4165-62-2	Phenol-d5	72%		10-96%

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting 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

<b>Client Sample ID:</b> UDEX-04_0.8-0.9_20230307	
<b>Lab Sample ID:</b> JD61677-4	<b>Date Sampled:</b> 03/07/23
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 03/08/23
<b>Method:</b> SW846 8270E SW846 3546	<b>Percent Solids:</b> 95.0
<b>Project:</b> SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA	

### ABN Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	83%		10-123%
4165-60-0	Nitrobenzene-d5	79%		10-109%
321-60-8	2-Fluorobiphenyl	74%		11-109%
1718-51-0	Terphenyl-d14	82%		10-120%

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	UDEX-04_0.8-0.9_20230307	<b>Date Sampled:</b>	03/07/23
<b>Lab Sample ID:</b>	JD61677-4	<b>Date Received:</b>	03/08/23
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	95.0
<b>Project:</b>	SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA		

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	5.8	5.4	mg/kg	1	03/17/23	03/21/23 ND	SW846 6010D <sup>1</sup>	SW846 3050B <sup>3</sup>
Lead	86.0	2.1	mg/kg	1	03/17/23	03/21/23 ND	SW846 6010D <sup>1</sup>	SW846 3050B <sup>3</sup>
Nickel	30.8	4.3	mg/kg	1	03/17/23	03/21/23 ND	SW846 6010D <sup>1</sup>	SW846 3050B <sup>3</sup>
Vanadium	16.6	5.4	mg/kg	1	03/17/23	03/21/23 ND	SW846 6010D <sup>1</sup>	SW846 3050B <sup>3</sup>
Zinc	1650	27	mg/kg	5	03/17/23	03/22/23 ND	SW846 6010D <sup>2</sup>	SW846 3050B <sup>3</sup>

- (1) Instrument QC Batch: MA53887
- (2) Instrument QC Batch: MA53898
- (3) Prep QC Batch: MP38454

RL = Reporting Limit

## Report of Analysis

32  
3

<b>Client Sample ID:</b> UDEX-07_0.8-0.9_20230307	<b>Date Sampled:</b> 03/07/23
<b>Lab Sample ID:</b> JD61677-5	<b>Date Received:</b> 03/08/23
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 95.8
<b>Method:</b> SW846 8260D SW846 5035	
<b>Project:</b> SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	Y199113.D	1	03/13/23 17:31	PS	03/10/23 13:00	n/a	VY8710
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

### VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.00056	0.00051	mg/kg	
135-98-8	sec-Butylbenzene	0.0088	0.0022	0.00048	mg/kg	
98-06-6	tert-Butylbenzene	0.00092	0.0022	0.00056	mg/kg	J
110-82-7	Cyclohexane	ND	0.0022	0.00073	mg/kg	
106-93-4	1,2-Dibromoethane	ND	0.0011	0.00047	mg/kg	
107-06-2	1,2-Dichloroethane	ND	0.0011	0.00052	mg/kg	
100-41-4	Ethylbenzene	ND	0.0011	0.00050	mg/kg	
110-54-3	Hexane	ND	0.0056	0.0011	mg/kg	
98-82-8	Isopropylbenzene	0.0046	0.0022	0.0016	mg/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0011	0.00052	mg/kg	
91-20-3	Naphthalene	ND	0.0056	0.0028	mg/kg	
108-88-3	Toluene	ND	0.0011	0.00058	mg/kg	
95-63-6	1,2,4-Trimethylbenzene	0.0045	0.0022	0.00056	mg/kg	
108-67-8	1,3,5-Trimethylbenzene	0.0304	0.0022	0.00048	mg/kg	
1330-20-7	Xylene (total)	ND	0.0011	0.00051	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-124%
17060-07-0	1,2-Dichloroethane-D4	103%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	95%		58-148%

(a) Sample was not collected per 5035A specifications. Sample preserved from intact soil by laboratory.

ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting 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

<b>Client Sample ID:</b> UDEX-07_0.8-0.9_20230307		<b>Date Sampled:</b> 03/07/23
<b>Lab Sample ID:</b> JD61677-5		<b>Date Received:</b> 03/08/23
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 95.8
<b>Method:</b> SW846 8270E SW846 3546		
<b>Project:</b> SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA		

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	74%		10-123%
4165-60-0	Nitrobenzene-d5	78%		10-109%
321-60-8	2-Fluorobiphenyl	78%		11-109%
1718-51-0	Terphenyl-d14	82%		10-120%

(a) Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to detect affected analytes. Sample was ND.

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ND = Not detected      MDL = Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting 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

<b>Client Sample ID:</b>	UDEX-07_0.8-0.9_20230307	<b>Date Sampled:</b>	03/07/23
<b>Lab Sample ID:</b>	JD61677-5	<b>Date Received:</b>	03/08/23
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	95.8
<b>Project:</b>	SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA		

### Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	< 5.1	5.1	mg/kg	1	03/17/23	03/21/23	ND	SW846 6010D <sup>1</sup> SW846 3050B <sup>2</sup>
Lead	4.6	2.0	mg/kg	1	03/17/23	03/21/23	ND	SW846 6010D <sup>1</sup> SW846 3050B <sup>2</sup>
Nickel	20.3	4.1	mg/kg	1	03/17/23	03/21/23	ND	SW846 6010D <sup>1</sup> SW846 3050B <sup>2</sup>
Vanadium	7.0	5.1	mg/kg	1	03/17/23	03/21/23	ND	SW846 6010D <sup>1</sup> SW846 3050B <sup>2</sup>
Zinc	24.1	5.1	mg/kg	1	03/17/23	03/21/23	ND	SW846 6010D <sup>1</sup> SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA53887

(2) Prep QC Batch: MP38454

RL = Reporting Limit

Misc. Forms

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Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3489/3480
www.sgs.com/ehsusa

SO
SLL

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #
Botle Order # 03323-19
SGS Quote #
SGS Job # JD61677

Client / Reporting Information
Project Information
Requested Analysis
Matrix Codes
Collection table with columns for Date, Time, Sampled by, and various chemical parameters. Includes sections for Turn Around Time, Deliverable options, and a signature chain at the bottom.

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## SGS Sample Receipt Summary

Job Number: jd61677

Client: STANTEC

Project: SECORPAE:FORMER PHILADELPHIA REFIN

Date / Time Received: 3/8/2023 2:16:00 PM

Delivery Method: SGS Courier

Airbill #'s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

<u>Cooler Security</u>	<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Cooler temp verification:	_____	
3. Cooler media:	Ice (Bag)	
4. No. Coolers:	1	

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: <u>231619</u>	pH 12+: <u>203117A</u>	Other: (Specify) _____
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Comments: All samples: Soil volatiles not collected to 5035 specifications. Lab to prep from intact soil volume for low level voc analysis.

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Responded to by: CSR: N/A

Response Date: Response Date: 3/10/2023

Response: Proceed with analysis

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**JD61677: Chain of Custody**

**Page 3 of 4**

Job Change Order: JD61677

Requested Date: 3/10/2023 Received Date: 3/8/2023  
Account Name: Sunoco/Evergreen Due Date: 3/10/2023  
Project Description: SECORPAE: PESRM UDEX Release, 3144 Pas Deliverable: COMMB  
C/O Initiated By: BETH\_WAS PM: VP TAT (Days): 14

Sample #: JD61677-4, 5

Client ID:

Change: Remove HOLD, add XEVERGREENC

Dept: TAT: 14

JD61677: Chain of Custody  
Page 4 of 4

Above Changes Per: Andrew Klingbeil Date/Time: 3/10/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



## MS Volatiles

5

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

# Method Blank Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8710-MB	Y199100.D	1	03/13/23	PS	n/a	n/a	VY8710

The QC reported here applies to the following samples:

Method: SW846 8260D

JD61677-4, JD61677-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.46	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.43	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.50	ug/kg	
110-82-7	Cyclohexane	ND	2.0	0.66	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.42	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.45	ug/kg	
110-54-3	Hexane	ND	5.0	1.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	1.4	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.47	ug/kg	
91-20-3	Naphthalene	ND	5.0	2.5	ug/kg	
108-88-3	Toluene	ND	1.0	0.53	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.50	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.46	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	95% 80-124%
17060-07-0	1,2-Dichloroethane-D4	93% 75-133%
2037-26-5	Toluene-D8	99% 79-125%
460-00-4	4-Bromofluorobenzene	94% 58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	.96	7.2	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

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# Blank Spike Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY8710-BS	Y199098.D	1	03/13/23	PS	n/a	n/a	VY8710

The QC reported here applies to the following samples:

Method: SW846 8260D

JD61677-4, JD61677-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	51.6	103	82-119
135-98-8	sec-Butylbenzene	50	51.5	103	78-120
98-06-6	tert-Butylbenzene	50	49.5	99	78-121
110-82-7	Cyclohexane	50	46.8	94	69-130
106-93-4	1,2-Dibromoethane	50	55.0	110	58-145
107-06-2	1,2-Dichloroethane	50	53.2	106	76-118
100-41-4	Ethylbenzene	50	50.2	100	83-115
110-54-3	Hexane	50	47.6	95	57-136
98-82-8	Isopropylbenzene	50	49.8	100	81-122
1634-04-4	Methyl Tert Butyl Ether	50	51.5	103	75-126
91-20-3	Naphthalene	50	53.2	106	71-129
108-88-3	Toluene	50	50.0	100	82-118
95-63-6	1,2,4-Trimethylbenzene	50	51.6	103	80-119
108-67-8	1,3,5-Trimethylbenzene	50	51.5	103	79-120
1330-20-7	Xylene (total)	150	147	98	83-119

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	80-124%
17060-07-0	1,2-Dichloroethane-D4	100%	75-133%
2037-26-5	Toluene-D8	99%	79-125%
460-00-4	4-Bromofluorobenzene	95%	58-148%

\* = Outside of Control Limits.

# Matrix Spike Summary

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD61729-1MS	Y199115.D	1	03/13/23	PS	n/a	n/a	VY8710
JD61729-1	Y199105.D	1	03/13/23	PS	n/a	n/a	VY8710

The QC reported here applies to the following samples:

Method: SW846 8260D

JD61677-4, JD61677-5

CAS No.	Compound	JD61729-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
71-43-2	Benzene	ND		51.8	49.3	95 61-132
135-98-8	sec-Butylbenzene	ND		51.8	34.7	67 27-149
98-06-6	tert-Butylbenzene	ND		51.8	38.1	74 38-142
110-82-7	Cyclohexane	ND		51.8	42.1	81 39-147
106-93-4	1,2-Dibromoethane	ND		51.8	49.1	95 45-141
107-06-2	1,2-Dichloroethane	ND		51.8	47.3	91 64-119
100-41-4	Ethylbenzene	ND		51.8	44.6	86 51-133
110-54-3	Hexane	ND		51.8	28.7	55 14-147
98-82-8	Isopropylbenzene	ND		51.8	40.8	79 44-142
1634-04-4	Methyl Tert Butyl Ether	ND		51.8	48.9	94 62-125
91-20-3	Naphthalene	ND		51.8	38.9	75 13-149
108-88-3	Toluene	ND		51.8	47.7	92 56-135
95-63-6	1,2,4-Trimethylbenzene	ND		51.8	41.5	80 30-149
108-67-8	1,3,5-Trimethylbenzene	ND		51.8	41.4	80 36-145
1330-20-7	Xylene (total)	ND		155	128	82 50-138

CAS No.	Surrogate Recoveries	MS	JD61729-1	Limits
1868-53-7	Dibromofluoromethane	101%	98%	80-124%
17060-07-0	1,2-Dichloroethane-D4	93%	97%	75-133%
2037-26-5	Toluene-D8	100%	98%	79-125%
460-00-4	4-Bromofluorobenzene	99%	92%	58-148%

\* = Outside of Control Limits.

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# Duplicate Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JD61729-2DUP	Y199117.D	1	03/13/23	PS	n/a	n/a	VY8710
JD61729-2	Y199106.D	1	03/13/23	PS	n/a	n/a	VY8710

The QC reported here applies to the following samples:

Method: SW846 8260D

JD61677-4, JD61677-5

CAS No.	Compound	JD61729-2 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	44
135-98-8	sec-Butylbenzene	ND		ND		nc	28
98-06-6	tert-Butylbenzene	ND		ND		nc	16
110-82-7	Cyclohexane	ND		ND		nc	44
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	35
110-54-3	Hexane	ND		ND		nc	33
98-82-8	Isopropylbenzene	ND		ND		nc	28
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	21
91-20-3	Naphthalene	ND		ND		nc	20
108-88-3	Toluene	ND		ND		nc	37
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	32
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	33
1330-20-7	Xylene (total)	ND		ND		nc	60

CAS No.	Surrogate Recoveries	DUP	JD61729-2	Limits
1868-53-7	Dibromofluoromethane	97%	98%	80-124%
17060-07-0	1,2-Dichloroethane-D4	102%	99%	75-133%
2037-26-5	Toluene-D8	98%	99%	79-125%
460-00-4	4-Bromofluorobenzene	97%	94%	58-148%

\* = Outside of Control Limits.

# Instrument Performance Check (BFB)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> VY8688-BFB	<b>Injection Date:</b> 02/13/23
<b>Lab File ID:</b> Y198411.D	<b>Injection Time:</b> 17:53
<b>Instrument ID:</b> GCMSY	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	25925	18.3	Pass
75	30.0 - 60.0% of mass 95	69048	48.7	Pass
95	Base peak, 100% relative abundance	141874	100.0	Pass
96	5.0 - 9.0% of mass 95	9385	6.62	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	130840	92.2	Pass
175	5.0 - 9.0% of mass 174	9786	6.90 (7.48) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	127725	90.0 (97.6) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	8705	6.14 (6.82) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY8688-IC8688	Y198412.D	02/13/23	18:21	00:28	Initial cal 0.2
VY8688-IC8688	Y198413.D	02/13/23	18:43	00:50	Initial cal 0.5
VY8688-IC8688	Y198414.D	02/13/23	19:05	01:12	Initial cal 1
VY8688-IC8688	Y198415.D	02/13/23	19:27	01:34	Initial cal 2
VY8688-IC8688	Y198416.D	02/13/23	19:49	01:56	Initial cal 4
VY8688-IC8688	Y198417.D	02/13/23	20:11	02:18	Initial cal 8
VY8688-IC8688	Y198418.D	02/13/23	20:33	02:40	Initial cal 20
VY8688-ICC8688	Y198419.D	02/13/23	20:55	03:02	Initial cal 50
VY8688-IC8688	Y198420.D	02/13/23	21:17	03:24	Initial cal 100
VY8688-IC8688	Y198421.D	02/13/23	21:39	03:46	Initial cal 200
VY8688-ICV8688	Y198424.D	02/13/23	22:45	04:52	Initial cal verification 50
VY8688-ICV8688	Y198425.D	02/13/23	23:08	05:15	Initial cal verification 50

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# Instrument Performance Check (BFB)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> VY8710-BFB	<b>Injection Date:</b> 03/13/23
<b>Lab File ID:</b> Y199097.D	<b>Injection Time:</b> 11:24
<b>Instrument ID:</b> GCMSY	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	15401	20.3	Pass
75	30.0 - 60.0% of mass 95	38853	51.1	Pass
95	Base peak, 100% relative abundance	76000	100.0	Pass
96	5.0 - 9.0% of mass 95	5039	6.63	Pass
173	Less than 2.0% of mass 174	182	0.24 (0.24) <sup>a</sup>	Pass
174	50.0 - 120.0% of mass 95	75366	99.2	Pass
175	5.0 - 9.0% of mass 174	5676	7.47 (7.53) <sup>a</sup>	Pass
176	95.0 - 101.0% of mass 174	74048	97.4 (98.3) <sup>a</sup>	Pass
177	5.0 - 9.0% of mass 176	4955	6.52 (6.69) <sup>b</sup>	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY8710-CC8688	Y199097.D	03/13/23	11:24	00:00	Continuing cal 50
VY8710-BS	Y199098.D	03/13/23	11:54	00:30	Blank Spike
VY8710-MB	Y199100.D	03/13/23	12:46	01:22	Method Blank
ZZZZZZ	Y199100A.D	03/13/23	12:46	01:22	(unrelated sample)
ZZZZZZ	Y199101.D	03/13/23	13:08	01:44	(unrelated sample)
ZZZZZZ	Y199102.D	03/13/23	13:30	02:06	(unrelated sample)
ZZZZZZ	Y199103.D	03/13/23	13:52	02:28	(unrelated sample)
ZZZZZZ	Y199104.D	03/13/23	14:13	02:49	(unrelated sample)
JD61729-1	Y199105.D	03/13/23	14:35	03:11	(used for QC only; not part of job JD61677)
JD61729-2	Y199106.D	03/13/23	14:57	03:33	(used for QC only; not part of job JD61677)
ZZZZZZ	Y199107.D	03/13/23	15:19	03:55	(unrelated sample)
ZZZZZZ	Y199108.D	03/13/23	15:41	04:17	(unrelated sample)
ZZZZZZ	Y199109.D	03/13/23	16:03	04:39	(unrelated sample)
ZZZZZZ	Y199110.D	03/13/23	16:25	05:01	(unrelated sample)
ZZZZZZ	Y199111.D	03/13/23	16:47	05:23	(unrelated sample)
JD61677-4	Y199112.D	03/13/23	17:09	05:45	UDEX-04_0.8-0.9_20230307
JD61677-5	Y199113.D	03/13/23	17:31	06:07	UDEX-07_0.8-0.9_20230307
ZZZZZZ	Y199114.D	03/13/23	17:53	06:29	(unrelated sample)
JD61729-1MS	Y199115.D	03/13/23	18:15	06:51	Matrix Spike
JD61729-2DUP	Y199117.D	03/13/23	18:59	07:35	Duplicate
ZZZZZZ	Y199118.D	03/13/23	19:21	07:57	(unrelated sample)
ZZZZZZ	Y199119.D	03/13/23	19:43	08:19	(unrelated sample)
ZZZZZZ	Y199120.D	03/13/23	20:05	08:41	(unrelated sample)
ZZZZZZ	Y199121.D	03/13/23	20:27	09:03	(unrelated sample)

5.5.2  
5

# Instrument Performance Check (BFB)

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> VY8710-BFB	<b>Injection Date:</b> 03/13/23
<b>Lab File ID:</b> Y199097.D	<b>Injection Time:</b> 11:24
<b>Instrument ID:</b> GCMSY	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	Y199122.D	03/13/23	20:49	09:25	(unrelated sample)
ZZZZZZ	Y199123.D	03/13/23	21:11	09:47	(unrelated sample)
ZZZZZZ	Y199124.D	03/13/23	21:33	10:09	(unrelated sample)
ZZZZZZ	Y199125.D	03/13/23	21:55	10:31	(unrelated sample)
ZZZZZZ	Y199126.D	03/13/23	22:17	10:53	(unrelated sample)
ZZZZZZ	Y199127.D	03/13/23	22:39	11:15	(unrelated sample)

5.5.2  
5



# Surrogate Recovery Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

**Method:** SW846 8260D

**Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD61677-4	Y199112.D	96	95	96	95
JD61677-5	Y199113.D	99	103	98	95
JD61729-1MS	Y199115.D	101	93	100	99
JD61729-2DUP	Y199117.D	97	102	98	97
VY8710-BS	Y199098.D	100	100	99	95
VY8710-MB	Y199100.D	95	93	99	94

### Surrogate Compounds

### Recovery Limits

<b>S1</b> = Dibromofluoromethane	80-124%
<b>S2</b> = 1,2-Dichloroethane-D4	75-133%
<b>S3</b> = Toluene-D8	79-125%
<b>S4</b> = 4-Bromofluorobenzene	58-148%

5.6.1

5

## MS Semi-volatiles

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### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

# Method Blank Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MB1	M187743.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	170	59	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	170	130	ug/kg	
95-48-7	2-Methylphenol	ND	67	21	ug/kg	
	3&4-Methylphenol	ND	67	27	ug/kg	
100-02-7	4-Nitrophenol	ND	330	89	ug/kg	
108-95-2	Phenol	ND	67	17	ug/kg	
83-32-9	Acenaphthene	ND	33	11	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
92-52-4	1,1'-Biphenyl	ND	67	4.6	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	67	5.4	ug/kg	
84-66-2	Diethyl phthalate	ND	67	7.1	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	67	7.8	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	7.5	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	
110-86-1	Pyridine	ND	67	11	ug/kg	
91-22-5	Quinoline	ND	170	5.7	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	64%	10-99%
4165-62-2	Phenol-d5	68%	10-96%
118-79-6	2,4,6-Tribromophenol	60%	10-123%
4165-60-0	Nitrobenzene-d5	69%	10-109%
321-60-8	2-Fluorobiphenyl	71%	11-109%

## Method Blank Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MB1	M187743.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Surrogate Recoveries	Limits
1718-51-0	Terphenyl-d14	74% 10-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.18	1500	ug/kg	J
	system artifact	1.44	290	ug/kg	J
	system artifact	1.55	440	ug/kg	J
	system artifact/aldol-condensation	1.58	340	ug/kg	J
	system artifact	1.63	990	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

# Method Blank Summary

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MB1	CT1503.D	1	03/14/23	RS	03/13/23	OP45190	ECT67

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	170	59	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	170	130	ug/kg	
95-48-7	2-Methylphenol	ND	67	21	ug/kg	
	3&4-Methylphenol	ND	67	27	ug/kg	
100-02-7	4-Nitrophenol	ND	330	89	ug/kg	
108-95-2	Phenol	ND	67	17	ug/kg	
83-32-9	Acenaphthene	ND	33	11	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
92-52-4	1,1'-Biphenyl	ND	67	4.6	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	67	5.4	ug/kg	
84-66-2	Diethyl phthalate	ND	67	7.1	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	67	7.8	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	7.5	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	
110-86-1	Pyridine	ND	67	11	ug/kg	
91-22-5	Quinoline	ND	170	5.7	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	68%	10-99%
4165-62-2	Phenol-d5	70%	10-96%
118-79-6	2,4,6-Tribromophenol	64%	10-123%
4165-60-0	Nitrobenzene-d5	68%	10-109%
321-60-8	2-Fluorobiphenyl	69%	11-109%

## Method Blank Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MB1	CT1503.D	1	03/14/23	RS	03/13/23	OP45190	ECT67

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Surrogate Recoveries	Limits
1718-51-0	Terphenyl-d14	82% 10-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	2.02	1000	ug/kg	J
	system artifact	2.41	270	ug/kg	J
	system artifact	2.56	380	ug/kg	J
	system artifact/aldol-condensation	2.61	270	ug/kg	J
	system artifact	2.66	590	ug/kg	J
	system artifact	2.68	260	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

6.12  
6

# Blank Spike Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-BS1	M187744.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
105-67-9	2,4-Dimethylphenol	1670	1290	77	10-141
51-28-5	2,4-Dinitrophenol	3330	1910	57	10-138
95-48-7	2-Methylphenol	1670	1370	82	10-139
	3&4-Methylphenol	3330	2620	79	10-174
100-02-7	4-Nitrophenol	1670	1170	70	10-144
108-95-2	Phenol	1670	1410	85	23-115
83-32-9	Acenaphthene	1670	1310	79	10-141
120-12-7	Anthracene	1670	1430	86	10-144
56-55-3	Benzo(a)anthracene	1670	1390	83	11-139
50-32-8	Benzo(a)pyrene	1670	1440	86	13-141
205-99-2	Benzo(b)fluoranthene	1670	1480	89	14-140
191-24-2	Benzo(g,h,i)perylene	1670	1540	92	13-138
207-08-9	Benzo(k)fluoranthene	1670	1260	76	12-140
92-52-4	1,1'-Biphenyl	1670	1290	77	10-141
218-01-9	Chrysene	1670	1410	85	11-139
53-70-3	Dibenzo(a,h)anthracene	1670	1500	90	14-142
84-74-2	Di-n-butyl phthalate	1670	1440	86	11-147
84-66-2	Diethyl phthalate	1670	1320	79	10-145
117-81-7	bis(2-Ethylhexyl)phthalate	1670	1420	85	26-132
206-44-0	Fluoranthene	1670	1430	86	10-147
86-73-7	Fluorene	1670	1320	79	12-139
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1550	93	13-144
91-57-6	2-Methylnaphthalene	1670	1230	74	10-140
85-01-8	Phenanthrene	1670	1400	84	10-142
129-00-0	Pyrene	1670	1430	86	13-141
110-86-1	Pyridine	1670	1360	82	10-112
91-22-5	Quinoline	1670	1330	80	10-141

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	82%	10-99%
4165-62-2	Phenol-d5	80%	10-96%
118-79-6	2,4,6-Tribromophenol	84%	10-123%
4165-60-0	Nitrobenzene-d5	75%	10-109%
321-60-8	2-Fluorobiphenyl	75%	11-109%

\* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-BS1	M187744.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Surrogate Recoveries	BSP	Limits
1718-51-0	Terphenyl-d14	83%	10-120%

\* = Outside of Control Limits.



# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MS	M187757.D	1	03/14/23	KH	03/13/23	OP45190	EM8116
OP45190-MSD	M187758.D	1	03/14/23	KH	03/13/23	OP45190	EM8116
JD61728-1	M187759.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Compound	JD61728-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
105-67-9	2,4-Dimethylphenol	ND		1760	1020	58	1750	599	34	52	10-148/87
51-28-5	2,4-Dinitrophenol	ND		3520	ND	0* a	3510	ND	0* a	nc	10-118/90
95-48-7	2-Methylphenol	ND		1760	1070	61	1750	582	33	59	10-143/86
	3&4-Methylphenol	ND		3520	2110	60	3510	1150	33	59	10-162/87
100-02-7	4-Nitrophenol	ND		1760	1030	59	1750	591	34	54	10-152/85
108-95-2	Phenol	ND		1760	1110	63	1750	609	35	58	10-118/84
83-32-9	Acenaphthene	ND		1760	1070	61	1750	611	35	55	10-156/87
120-12-7	Anthracene	ND		1760	1160	66	1750	695	40	50	10-166/88
56-55-3	Benzo(a)anthracene	10.0	J	1760	1150	65	1750	707	40	48	10-163/88
50-32-8	Benzo(a)pyrene	ND		1760	1160	66	1750	703	40	49	10-163/89
205-99-2	Benzo(b)fluoranthene	ND		1760	1210	69	1750	756	43	46	10-156/91
191-24-2	Benzo(g,h,i)perylene	ND		1760	1060	60	1750	657	37	47	10-158/89
207-08-9	Benzo(k)fluoranthene	ND		1760	1100	63	1750	704	40	44	10-157/86
92-52-4	1,1'-Biphenyl	ND		1760	1060	60	1750	605	35	55	10-143/86
218-01-9	Chrysene	ND		1760	1140	65	1750	697	40	48	10-164/87
53-70-3	Dibenzo(a,h)anthracene	ND		1760	1090	62	1750	666	38	48	10-149/89
84-74-2	Di-n-butyl phthalate	ND		1760	1150	65	1750	700	40	49	10-158/86
84-66-2	Diethyl phthalate	ND		1760	1080	61	1750	642	37	51	10-148/84
117-81-7	bis(2-Ethylhexyl)phthalate	ND		1760	1130	64	1750	693	40	48	10-153/84
206-44-0	Fluoranthene	ND		1760	1180	67	1750	709	40	50	10-165/93
86-73-7	Fluorene	ND		1760	1110	63	1750	638	36	54	10-158/87
193-39-5	Indeno(1,2,3-cd)pyrene	ND		1760	1100	63	1750	671	38	48	10-160/91
91-57-6	2-Methylnaphthalene	ND		1760	990	56	1750	549	31	57	10-145/86
85-01-8	Phenanthrene	ND		1760	1130	64	1750	675	38	50	10-158/95
129-00-0	Pyrene	ND		1760	1110	63	1750	688	39	47	10-176/90
110-86-1	Pyridine	ND		1760	1060	60	1750	618	35	53	10-103/90
91-22-5	Quinoline	ND		1760	1050	60	1750	585	33	57	10-134/91

CAS No.	Surrogate Recoveries	MS	MSD	JD61728-1	Limits
367-12-4	2-Fluorophenol	63%	38%	53%	10-99%
4165-62-2	Phenol-d5	63%	39%	56%	10-96%
118-79-6	2,4,6-Tribromophenol	71%	48%	60%	10-123%
4165-60-0	Nitrobenzene-d5	60%	37%	59%	10-109%
321-60-8	2-Fluorobiphenyl	64%	41%	62%	11-109%

\* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP45190-MS	M187757.D	1	03/14/23	KH	03/13/23	OP45190	EM8116
OP45190-MSD	M187758.D	1	03/14/23	KH	03/13/23	OP45190	EM8116
JD61728-1	M187759.D	1	03/14/23	KH	03/13/23	OP45190	EM8116

The QC reported here applies to the following samples:

Method: SW846 8270E

JD61677-4, JD61677-5

CAS No.	Surrogate Recoveries	MS	MSD	JD61728-1	Limits
1718-51-0	Terphenyl-d14	67%	47%	61%	10-120%

(a) Outside of in house control limits.

\* = Outside of Control Limits.

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT63-DFTPP	<b>Injection Date:</b> 03/07/23
<b>Lab File ID:</b> CT1405.D	<b>Injection Time:</b> 18:09
<b>Instrument ID:</b> GCMSCT	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	147246	41.4	Pass
68	Less than 2.0% of mass 69	2294	0.64 (1.27) <sup>a</sup>	Pass
69	Mass 69 relative abundance	180544	50.7	Pass
70	Less than 2.0% of mass 69	1015	0.29 (0.56) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	177411	49.8	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	355925	100.0	Pass
199	5.0 - 9.0% of mass 198	23274	6.54	Pass
275	10.0 - 30.0% of mass 198	102267	28.7	Pass
365	1.0 - 100.0% of mass 198	15004	4.22	Pass
441	Present, but less than mass 443	53251	15.0 (81.6) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	340253	95.6	Pass
443	17.0 - 23.0% of mass 442	65250	18.3 (19.2) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ECT63-ICC63	CT1406A.D	03/07/23	19:47	01:38	Initial cal 50
ECT63-IC63	CT1407.D	03/07/23	20:03	01:54	Initial cal 100
ECT63-IC63	CT1408.D	03/07/23	20:20	02:11	Initial cal 80
ECT63-IC63	CT1409.D	03/07/23	20:37	02:28	Initial cal 25
ECT63-IC63	CT1410.D	03/07/23	20:54	02:45	Initial cal 10
ECT63-IC63	CT1411.D	03/07/23	21:11	03:02	Initial cal 5
ECT63-IC63	CT1412.D	03/07/23	21:28	03:19	Initial cal 2
ECT63-IC63	CT1413.D	03/07/23	21:45	03:36	Initial cal 1

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT64-DFTPP	<b>Injection Date:</b> 03/07/23
<b>Lab File ID:</b> CT1421.D	<b>Injection Time:</b> 23:54
<b>Instrument ID:</b> GCMSCT	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	147155	41.4	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	179100	50.4	Pass
70	Less than 2.0% of mass 69	1122	0.32 (0.63) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	176907	49.8	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	355264	100.0	Pass
199	5.0 - 9.0% of mass 198	24539	6.91	Pass
275	10.0 - 30.0% of mass 198	101765	28.6	Pass
365	1.0 - 100.0% of mass 198	15240	4.29	Pass
441	Present, but less than mass 443	50120	14.1 (81.5) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	320357	90.2	Pass
443	17.0 - 23.0% of mass 442	61529	17.3 (19.2) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ECT64-ICC64	CT1422.D	03/08/23	00:05	00:11	Initial cal 50
ECT64-IC64	CT1423.D	03/08/23	00:22	00:28	Initial cal 100
ECT64-IC64	CT1424.D	03/08/23	00:39	00:45	Initial cal 80
ECT64-IC64	CT1425.D	03/08/23	00:56	01:02	Initial cal 25
ECT64-IC64	CT1426.D	03/08/23	01:13	01:19	Initial cal 10
ECT64-IC64	CT1427.D	03/08/23	01:30	01:36	Initial cal 5
ECT64-IC64	CT1428.D	03/08/23	01:47	01:53	Initial cal 2
ECT64-IC64	CT1429.D	03/08/23	02:05	02:11	Initial cal 1
ECT64-ICV64	CT1430.D	03/08/23	02:22	02:28	Initial cal verification 50

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT65-DFTPP	<b>Injection Date:</b> 03/10/23
<b>Lab File ID:</b> CT1433.D	<b>Injection Time:</b> 16:19
<b>Instrument ID:</b> GCMSCT	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	179661	45.3	Pass
68	Less than 2.0% of mass 69	2483	0.63 (1.09) <sup>a</sup>	Pass
69	Mass 69 relative abundance	228326	57.5	Pass
70	Less than 2.0% of mass 69	1509	0.38 (0.66) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	210803	53.1	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	396864	100.0	Pass
199	5.0 - 9.0% of mass 198	27696	6.98	Pass
275	10.0 - 30.0% of mass 198	107408	27.1	Pass
365	1.0 - 100.0% of mass 198	15932	4.01	Pass
441	Present, but less than mass 443	48892	12.3 (78.3) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	315096	79.4	Pass
443	17.0 - 23.0% of mass 442	62458	15.7 (19.8) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ECT65-ICV63	CT1434A.D	03/10/23	16:36	00:17	Initial cal verification 50
ECT65-ICV63	CT1435.D	03/10/23	16:53	00:34	Initial cal verification 50
ECT65-ICV63	CT1436.D	03/10/23	17:10	00:51	Initial cal verification 50
ECT65-ICV63	CT1437.D	03/10/23	17:28	01:09	Initial cal verification 50
ECT65-CC63	CT1438.D	03/10/23	18:29	02:10	Continuing cal 50
ECT65-CC64	CT1439.D	03/10/23	18:46	02:27	Continuing cal 50
OP45114-MB1	CT1441.D	03/10/23	19:29	03:10	Method Blank
OP45114-BS1	CT1442.D	03/10/23	19:46	03:27	Blank Spike
OP45114-MS	CT1443.D	03/10/23	20:03	03:44	Matrix Spike
OP45114-MSD	CT1444.D	03/10/23	20:20	04:01	Matrix Spike Duplicate
JD61468-1	CT1445.D	03/10/23	20:38	04:19	(used for QC only; not part of job JD61677)
ZZZZZZ	CT1446.D	03/10/23	20:55	04:36	(unrelated sample)
ZZZZZZ	CT1447.D	03/10/23	21:12	04:53	(unrelated sample)
ZZZZZZ	CT1448.D	03/10/23	21:29	05:10	(unrelated sample)
ZZZZZZ	CT1449.D	03/10/23	21:46	05:27	(unrelated sample)
ZZZZZZ	CT1450.D	03/10/23	22:04	05:45	(unrelated sample)
ZZZZZZ	CT1451.D	03/10/23	22:21	06:02	(unrelated sample)
ZZZZZZ	CT1452.D	03/10/23	22:38	06:19	(unrelated sample)
ZZZZZZ	CT1453.D	03/10/23	22:55	06:36	(unrelated sample)

6.4.3  
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# Instrument Performance Check (DFTPP)

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

**Sample:** ECT65-DFTPP

**Injection Date:** 03/10/23

**Lab File ID:** CT1433.D

**Injection Time:** 16:19

**Instrument ID:** GCMSCT

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	CT1454.D	03/10/23	23:13	06:54	(unrelated sample)
ZZZZZZ	CT1455.D	03/10/23	23:30	07:11	(unrelated sample)
ZZZZZZ	CT1456.D	03/10/23	23:48	07:29	(unrelated sample)
ZZZZZZ	CT1457.D	03/11/23	00:05	07:46	(unrelated sample)
ZZZZZZ	CT1459.D	03/11/23	00:40	08:21	(unrelated sample)
ZZZZZZ	CT1460.D	03/11/23	00:57	08:38	(unrelated sample)
ZZZZZZ	CT1461.D	03/11/23	01:15	08:56	(unrelated sample)
ZZZZZZ	CT1462.D	03/11/23	01:32	09:13	(unrelated sample)
ZZZZZZ	CT1463.D	03/11/23	01:50	09:31	(unrelated sample)

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT67-DFTPP	<b>Injection Date:</b> 03/14/23
<b>Lab File ID:</b> CT1496.D	<b>Injection Time:</b> 19:41
<b>Instrument ID:</b> GCMSCT	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	147892	30.3	Pass
68	Less than 2.0% of mass 69	2356	0.48 (1.20) <sup>a</sup>	Pass
69	Mass 69 relative abundance	195704	40.0	Pass
70	Less than 2.0% of mass 69	928	0.19 (0.47) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	221277	45.3	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	488683	100.0	Pass
199	5.0 - 9.0% of mass 198	33251	6.80	Pass
275	10.0 - 30.0% of mass 198	138643	28.4	Pass
365	1.0 - 100.0% of mass 198	19295	3.95	Pass
441	Present, but less than mass 443	76835	15.7 (83.1) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	483435	98.9	Pass
443	17.0 - 23.0% of mass 442	92483	18.9 (19.1) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ECT67-CC63	CT1497.D	03/14/23	21:03	01:22	Continuing cal 50
ECT67-CC64	CT1498.D	03/14/23	21:20	01:39	Continuing cal 50
OP45190-MB1	CT1503.D	03/14/23	22:45	03:04	Method Blank
ZZZZZZ	CT1507.D	03/15/23	00:13	04:32	(unrelated sample)
JD61677-4	CT1514.D	03/15/23	02:13	06:32	UDEX-04_0.8-0.9_20230307
JD60843-1R	CT1517.D	03/15/23	03:04	07:23	(used for QC only; not part of job JD61677)
ZZZZZZ	CT1519.D	03/15/23	03:38	07:57	(unrelated sample)

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT68-DFTPP	<b>Injection Date:</b> 03/15/23
<b>Lab File ID:</b> CT1521.D	<b>Injection Time:</b> 22:46
<b>Instrument ID:</b> GCMSCT	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	105654	36.5	Pass
68	Less than 2.0% of mass 69	1257	0.43 (0.90) <sup>a</sup>	Pass
69	Mass 69 relative abundance	140431	48.5	Pass
70	Less than 2.0% of mass 69	573	0.20 (0.41) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	143029	49.4	Pass
197	Less than 1.0% of mass 198	347	0.12	Pass
198	Base peak, 100% relative abundance	289373	100.0	Pass
199	5.0 - 9.0% of mass 198	20436	7.06	Pass
275	10.0 - 30.0% of mass 198	79221	27.4	Pass
365	1.0 - 100.0% of mass 198	10720	3.70	Pass
441	Present, but less than mass 443	37191	12.9 (80.8) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	235435	81.4	Pass
443	17.0 - 23.0% of mass 442	46027	15.9 (19.5) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ECT68-CC63	CT1522.D	03/15/23	22:57	00:11	Continuing cal 25
ECT68-CC64	CT1523.D	03/15/23	23:21	00:35	Continuing cal 25
ECT68-CC63	CT1524.D	03/15/23	23:59	01:13	Continuing cal 1
OP45246-MB1	CT1527.D	03/16/23	00:50	02:04	Method Blank
OP45246-LB14	CT1528.D	03/16/23	01:07	02:21	Leachate Blank
OP45246-BS1	CT1529.D	03/16/23	01:24	02:38	Blank Spike
OP45122-MB1	CT1530.D	03/16/23	01:41	02:55	Method Blank
OP45246-LS14	CT1531.D	03/16/23	01:59	03:13	Leachate Spike
OP45246-MS	CT1531.D	03/16/23	01:59	03:13	Matrix Spike
OP45246-MSD	CT1532.D	03/16/23	02:16	03:30	Matrix Spike Duplicate
JD61486-1	CT1533.D	03/16/23	02:33	03:47	(used for QC only; not part of job JD61677)
ZZZZZZ	CT1534.D	03/16/23	02:50	04:04	(unrelated sample)
ZZZZZZ	CT1535.D	03/16/23	03:07	04:21	(unrelated sample)
ZZZZZZ	CT1536.D	03/16/23	03:24	04:38	(unrelated sample)
ZZZZZZ	CT1537.D	03/16/23	03:42	04:56	(unrelated sample)
ZZZZZZ	CT1538.D	03/16/23	03:59	05:13	(unrelated sample)
ZZZZZZ	CT1539.D	03/16/23	04:16	05:30	(unrelated sample)
ZZZZZZ	CT1540.D	03/16/23	04:33	05:47	(unrelated sample)
ZZZZZZ	CT1541.D	03/16/23	04:50	06:04	(unrelated sample)

6.4.5  
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# Instrument Performance Check (DFTPP)

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> ECT68-DFTPP	<b>Injection Date:</b> 03/15/23
<b>Lab File ID:</b> CT1521.D	<b>Injection Time:</b> 22:46
<b>Instrument ID:</b> GCMSCT	

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	CT1542.D	03/16/23	05:07	06:21	(unrelated sample)
ZZZZZZ	CT1543.D	03/16/23	05:24	06:38	(unrelated sample)
JD61677-5	CT1544.D	03/16/23	05:41	06:55	UDEX-07_0.8-0.9_20230307
ZZZZZZ	CT1546.D	03/16/23	06:15	07:29	(unrelated sample)
ZZZZZZ	CT1547.D	03/16/23	06:32	07:46	(unrelated sample)
ZZZZZZ	CT1548.D	03/16/23	06:49	08:03	(unrelated sample)

6.4.5

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# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> EM8079-DFTPP	<b>Injection Date:</b> 02/02/23
<b>Lab File ID:</b> M186857.D	<b>Injection Time:</b> 15:56
<b>Instrument ID:</b> GCMSM	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	42641	39.0	Pass
68	Less than 2.0% of mass 69	479	0.44 (0.91) <sup>a</sup>	Pass
69	Mass 69 relative abundance	52903	48.4	Pass
70	Less than 2.0% of mass 69	391	0.36 (0.74) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	54570	49.9	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	109349	100.0	Pass
199	5.0 - 9.0% of mass 198	7213	6.60	Pass
275	10.0 - 30.0% of mass 198	28872	26.4	Pass
365	1.0 - 100.0% of mass 198	4462	4.08	Pass
441	Present, but less than mass 443	13813	12.6 (78.9) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	88858	81.3	Pass
443	17.0 - 23.0% of mass 442	17504	16.0 (19.7) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM8079-IC8079	M186858.D	02/02/23	16:09	00:13	Initial cal 100
EM8079-IC8079	M186859.D	02/02/23	16:30	00:34	Initial cal 2
EM8079-ICC8079	M186860.D	02/02/23	17:06	01:10	Initial cal 50
EM8079-IC8079	M186861.D	02/02/23	17:27	01:31	Initial cal 25
EM8079-IC8079	M186862.D	02/02/23	17:49	01:53	Initial cal 10
EM8079-IC8079	M186863.D	02/02/23	18:10	02:14	Initial cal 5
EM8079-IC8079	M186864.D	02/02/23	18:32	02:36	Initial cal 80
EM8079-IC8079	M186865.D	02/02/23	18:53	02:57	Initial cal 1
EM8079-ICV8079	M186866.D	02/02/23	19:15	03:19	Initial cal verification 50
EM8079-ICV8079	M186867.D	02/02/23	19:37	03:41	Initial cal verification 50
EM8079-ICV8079	M186868.D	02/02/23	19:58	04:02	Initial cal verification 50
EM8079-ICV8079	M186869A.D	02/02/23	21:17	05:21	Initial cal verification 50

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> EM8080-DFTPP	<b>Injection Date:</b> 02/03/23
<b>Lab File ID:</b> M186870.D	<b>Injection Time:</b> 10:37
<b>Instrument ID:</b> GCMSM	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	33725	39.5	Pass
68	Less than 2.0% of mass 69	733	0.86 (1.69) <sup>a</sup>	Pass
69	Mass 69 relative abundance	43274	50.7	Pass
70	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	43938	51.4	Pass
197	Less than 1.0% of mass 198	221	0.26	Pass
198	Base peak, 100% relative abundance	85426	100.0	Pass
199	5.0 - 9.0% of mass 198	6045	7.08	Pass
275	10.0 - 30.0% of mass 198	21790	25.5	Pass
365	1.0 - 100.0% of mass 198	3221	3.77	Pass
441	Present, but less than mass 443	10829	12.7 (80.6) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	67378	78.9	Pass
443	17.0 - 23.0% of mass 442	13430	15.7 (19.9) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM8080-IC8080	M186871.D	02/03/23	10:50	00:13	Initial cal 100
EM8080-IC8080	M186872.D	02/03/23	11:12	00:35	Initial cal 80
EM8080-ICC8080	M186873.D	02/03/23	11:35	00:58	Initial cal 50
EM8080-IC8080	M186874.D	02/03/23	11:57	01:20	Initial cal 25
EM8080-IC8080	M186875.D	02/03/23	12:20	01:43	Initial cal 10
EM8080-IC8080	M186876.D	02/03/23	12:42	02:05	Initial cal 5
EM8080-IC8080	M186877.D	02/03/23	13:05	02:28	Initial cal 2
EM8080-IC8080	M186878.D	02/03/23	13:28	02:51	Initial cal 1
EM8080-ICV8080	M186879.D	02/03/23	13:50	03:13	Initial cal verification 50

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b> EM8116-DFTPP	<b>Injection Date:</b> 03/14/23
<b>Lab File ID:</b> M187736.D	<b>Injection Time:</b> 08:26
<b>Instrument ID:</b> GCMSM	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
51	30.0 - 60.0% of mass 198	30720	45.0	Pass
68	Less than 2.0% of mass 69	0	0.00 (0.00) <sup>a</sup>	Pass
69	Mass 69 relative abundance	40858	59.9	Pass
70	Less than 2.0% of mass 69	384	0.56 (0.94) <sup>a</sup>	Pass
127	40.0 - 60.0% of mass 198	37976	55.7	Pass
197	Less than 1.0% of mass 198	0	0.00	Pass
198	Base peak, 100% relative abundance	68224	100.0	Pass
199	5.0 - 9.0% of mass 198	4842	7.10	Pass
275	10.0 - 30.0% of mass 198	16658	24.4	Pass
365	1.0 - 100.0% of mass 198	2606	3.82	Pass
441	Present, but less than mass 443	6640	9.73 (77.3) <sup>b</sup>	Pass
442	40.0 - 100.0% of mass 198	43621	63.9	Pass
443	17.0 - 23.0% of mass 442	8589	12.6 (19.7) <sup>c</sup>	Pass

- (a) Value is % of mass 69
- (b) Value is % of mass 443
- (c) Value is % of mass 442

**This check applies to the following Samples, MS, MSD, Blanks, and Standards:**

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EM8116-CC8079	M187737.D	03/14/23	08:39	00:13	Continuing cal 50
EM8116-CC8080	M187738.D	03/14/23	09:00	00:34	Continuing cal 50
OP45154-BS1	M187740.D	03/14/23	09:43	01:17	Blank Spike
OP45163-MB1	M187741.D	03/14/23	10:04	01:38	Method Blank
OP45163-LB14	M187742.D	03/14/23	10:26	02:00	Leachate Blank
OP45190-MB1	M187743.D	03/14/23	10:47	02:21	Method Blank
OP45190-BS1	M187744.D	03/14/23	11:09	02:43	Blank Spike
OP45163-BS1	M187745.D	03/14/23	11:30	03:04	Blank Spike
OP45163-MS	M187746A.D	03/14/23	11:52	03:26	Matrix Spike
OP45163-LS14	M187746.D	03/14/23	11:52	03:26	Leachate Spike
OP45163-MSD	M187747.D	03/14/23	12:13	03:47	Matrix Spike Duplicate
OP45060-MB1	M187766.D	03/14/23	12:35	04:09	Method Blank
ZZZZZZ	M187749.D	03/14/23	13:18	04:52	(unrelated sample)
ZZZZZZ	M187750.D	03/14/23	13:40	05:14	(unrelated sample)
ZZZZZZ	M187751.D	03/14/23	14:01	05:35	(unrelated sample)
ZZZZZZ	M187767.D	03/14/23	14:22	05:56	(unrelated sample)
ZZZZZZ	M187768.D	03/14/23	14:44	06:18	(unrelated sample)
JD61275-1	M187769.D	03/14/23	15:05	06:39	(used for QC only; not part of job JD61677)
JD61584-1	M187753.D	03/14/23	15:48	07:22	(used for QC only; not part of job JD61677)

# Instrument Performance Check (DFTPP)

**Job Number:** JD61677  
**Account:** SUNOCOSS Sunoco/Evergreen  
**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

<b>Sample:</b>	EM8116-DFTPP	<b>Injection Date:</b>	03/14/23
<b>Lab File ID:</b>	M187736.D	<b>Injection Time:</b>	08:26
<b>Instrument ID:</b>	GCMSM		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	M187754.D	03/14/23	16:10	07:44	(unrelated sample)
ZZZZZZ	M187755.D	03/14/23	16:32	08:06	(unrelated sample)
ZZZZZZ	M187756.D	03/14/23	16:54	08:28	(unrelated sample)
OP45190-MS	M187757.D	03/14/23	17:15	08:49	Matrix Spike
OP45190-MSD	M187758.D	03/14/23	17:39	09:13	Matrix Spike Duplicate
JD61728-1	M187759.D	03/14/23	18:01	09:35	(used for QC only; not part of job JD61677)
ZZZZZZ	M187760.D	03/14/23	18:22	09:56	(unrelated sample)
ZZZZZZ	M187761.D	03/14/23	18:44	10:18	(unrelated sample)
ZZZZZZ	M187762.D	03/14/23	19:06	10:40	(unrelated sample)
ZZZZZZ	M187763.D	03/14/23	19:28	11:02	(unrelated sample)
ZZZZZZ	M187764.D	03/14/23	19:49	11:23	(unrelated sample)
ZZZZZZ	M187765.D	03/14/23	20:11	11:45	(unrelated sample)

6.4.8  
6

# Surrogate Recovery Summary

**Job Number:** JD61677

**Account:** SUNOCOSS Sunoco/Evergreen

**Project:** SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

**Method:** SW846 8270E

**Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD61677-4	CT1514.D	67	72	83	79	74	82
JD61677-5	CT1544.D	70	75	74	78	78	82
OP45190-BS1	M187744.D	82	80	84	75	75	83
OP45190-MB1	M187743.D	64	68	60	69	71	74
OP45190-MB1	CT1503.D	68	70	64	68	69	82
OP45190-MS	M187757.D	63	63	71	60	64	67
OP45190-MSD	M187758.D	38	39	48	37	41	47

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-99%
S2 = Phenol-d5	10-96%
S3 = 2,4,6-Tribromophenol	10-123%
S4 = Nitrobenzene-d5	10-109%
S5 = 2-Fluorobiphenyl	11-109%
S6 = Terphenyl-d14	10-120%

## 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: JD61677  
Account: SUNOCOSS - Sunoco/Evergreen  
Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 03/17/23

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28		
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28	0.010	<5.0
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41	0.080	<2.0
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35	0.060	<4.0
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19	-0.020	<5.0
Zinc	5.0	.01	2.3	0.34	<5.0



BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JD61677  
Account: SUNOCOSS - Sunoco/Evergreen  
Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454  
Matrix Type: SOLID

Methods: SW846 6010D  
Units: mg/kg

Prep Date: 03/17/23

Metal	RL	IDL	MDL	MB raw	final
-------	----	-----	-----	-----------	-------

Zirconium 2.0 .03 .54

Associated samples MP38454: JD61677-4, JD61677-5

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

7.1.1  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD61677  
 Account: SUNOCOSS - Sunoco/Evergreen  
 Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 03/17/23

Metal	JD61677-5 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium				
Chromium				
Cobalt	2.4	186	203	90.6 75-125
Copper				
Iron				
Lead	4.6	183	203	88.0 75-125
Lithium				
Manganese				
Molybdenum				
Nickel	20.3	185	203	81.3 75-125
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium	7.0	190	203	90.3 75-125
Zinc	24.1	211	203	92.2 75-125
Zirconium				

Associated samples MP38454: JD61677-4, JD61677-5

7.1.2  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD61677

Account: SUNOCOSS - Sunoco/Evergreen

Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/17/23

Metal	JD61677-5 Original MS	Spikelet MPSPK2	% Rec	QC Limits
-------	--------------------------	--------------------	-------	--------------

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: JD61677  
 Account: SUNOCOSS - Sunoco/Evergreen  
 Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 03/17/23

Metal	JD61677-5 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium						
Chromium						
Cobalt	2.4	201	215	92.3	7.8	20
Copper						
Iron						
Lead	4.6	193	215	87.5	5.3	20
Lithium						
Manganese						
Molybdenum						
Nickel	20.3	198	215	82.6	6.8	20
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium	7.0	202	215	90.6	6.1	20
Zinc	24.1	209	215	85.9	1.0	20
Zirconium						

Associated samples MP38454: JD61677-4, JD61677-5

7.1.2  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD61677  
 Account: SUNOCOSS - Sunoco/Evergreen  
 Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

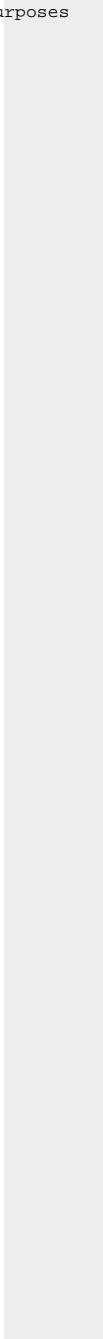
QC Batch ID: MP38454  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: mg/kg

Prep Date: 03/17/23

Metal	JD61677-5 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
-------	---------------------------	--------------------	-------	------------	-------------

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



7.1.2  
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD61677

Account: SUNOCOSS - Sunoco/Evergreen

Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/17/23

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium				
Calcium				
Chromium				
Cobalt	191	200	95.5	80-120
Copper				
Iron				
Lead	190	200	95.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	188	200	94.0	80-120
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium	185	200	92.5	80-120
Zinc	193	200	96.5	80-120

7.1.3  
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD61677

Account: SUNOCOSS - Sunoco/Evergreen

Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454

Methods: SW846 6010D

Matrix Type: SOLID

Units: mg/kg

Prep Date: 03/17/23

Metal	BSP Result	Spikelot MPSPK2	QC % Rec	QC Limits
-------	---------------	--------------------	-------------	--------------

Zirconium

Associated samples MP38454: JD61677-4, JD61677-5

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

7.1.3

7

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD61677  
 Account: SUNOCOSS - Sunoco/Evergreen  
 Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454  
 Matrix Type: SOLID

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 03/17/23

Metal	JD61677-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium	anr			
Bismuth				
Boron	anr			
Cadmium				
Chromium				
Cobalt	23.2	22.1	4.7	0-10
Copper				
Iron				
Lead	44.5	48.2	8.3	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	198	198	0.3	0-10
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium	68.6	67.7	1.3	0-10
Zinc	236	258	9.5	0-10
Zirconium				

7.1.4  
7



SERIAL DILUTION RESULTS SUMMARY

Login Number: JD61677

Account: SUNOCOSS - Sunoco/Evergreen

Project: SECORPAE: PESRM UDEX Release, 3144 Passyunk Ave, Philadelphia, PA

QC Batch ID: MP38454

Methods: SW846 6010D

Matrix Type: SOLID

Units: ug/l

Prep Date: 03/17/23

	JD61677-5		QC
Metal	Original SDL 1:5	%DIF	Limits

Associated samples MP38454: JD61677-4, JD61677-5

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

7.1.4

7

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Andrew Klingbeil  
Stantec Consulting Corp.  
1060 Andrew Drive  
Suite 140  
West Chester, Pennsylvania 19380

Generated 4/3/2023 9:18:10 PM

## JOB DESCRIPTION

PESRM UDEX ICE 407 Waste Characterization

## JOB NUMBER

410-119319-1

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated  
4/3/2023 9:18:10 PM

Authorized for release by  
Amek Carter, Project Manager  
[Loran.Carter@et.eurofinsus.com](mailto:Loran.Carter@et.eurofinsus.com)  
(717)556-7252

## Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- 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 is 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.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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# Definitions/Glossary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC Semi VOA

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.
cn	Refer to Case Narrative for further detail
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

### Metals

Qualifier	Qualifier Description
B	Analyte was found in the blank.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
!	Laboratory is not accredited for this parameter.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)



# Definitions/Glossary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Case Narrative

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

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## Job ID: 410-119319-1

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Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

### Narrative

#### Job Narrative 410-119319-1

#### Receipt

The samples were received on 3/17/2023 2:50 PM. 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 0.5°C

#### GC/MS VOA

Method 8260C: The continuing calibration verification (CCV) associated with batch 410-358106 recovered above the upper control limit for Acetone. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: The continuing calibration verification (CCV) analyzed on 410-358106 is compliant under 8260C/D method criteria for Dichlorodifluoromethane. The software does not display the % Drift data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the check passes the criteria with a value of 20% Drift.

Method 8260C: The following samples were diluted due to the nature of the sample matrix: UDEX Waste-01\_20230316 (410-119319-1) and UDEX Waste-Composite\_20230316 (410-119319-2). Elevated reporting limits (RLs) are provided.

Method 8260C: The continuing calibration verification (CCV) associated with batch 410-357314 recovered above the upper control limit for Acetone and Carbon disulfide. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260C: The continuing calibration verification (CCV) analyzed on 410-357314 is compliant under 8260C/D method criteria for Dichlorodifluoromethane and Freon 113. The software does not display the % Drift data to the whole number as is listed in the method (i.e. limit of 20%). When applying the evaluation to a whole number, the check passes the criteria with a value of 20% Drift.

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

#### GC Semi VOA

Method NJEPH\_Screen: 1-Chlorooctadecane (Surr) surrogate recovery is outside upper control limits in the LCS. Target analytes are within limits; therefore, data is reported. UDEX Waste-Composite\_20230316 (410-119319-2)

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

#### PCBs

Method 8082A: Surrogate recovery for the following sample was outside control limits: UDEX Waste-Composite\_20230316 (410-119319-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### Metals

Method 6020B: The TCLP leachate blank for batch 410-358095 contained Barium and Lead above the method detection limit (MDL) and below the reporting limit (RL). This target analyte concentration was less than the TCLP Regulatory Hazard Limit. The associated sample was also below the TCLP Regulatory Hazard Limit for this analyte; therefore, re-extraction was not performed.

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

#### General Chemistry

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

# Detection Summary

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Client Sample ID: UDEX Waste-01\_20230316

Lab Sample ID: 410-119319-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	57	J cn	270	33	ug/Kg	50	✳	8260C	Total/NA
Toluene	69	J cn	270	33	ug/Kg	50	✳	8260C	Total/NA
Benzene	28	J cn	270	27	ug/Kg	50	✳	8260C	Total/NA
Methyl acetate	74	J cn	270	54	ug/Kg	50	✳	8260C	Total/NA
Total EPH (C9-C40)	5000	!	210	210	mg/Kg	20	✳	NJ EPH	Total/NA

## Client Sample ID: UDEX Waste-Composite\_20230316

Lab Sample ID: 410-119319-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylcyclohexane	35	J cn	290	35	ug/Kg	50	✳	8260C	Total/NA
Toluene	73	J cn	290	35	ug/Kg	50	✳	8260C	Total/NA
Total EPH (C9-C40)	2300	!	100	100	mg/Kg	10	✳	NJ EPH	Total/NA
Barium	0.41	B cn	0.020	0.0075	mg/L	1		6020B	TCLP
Cadmium	0.0026	J	0.0050	0.0015	mg/L	1		6020B	TCLP
Lead	0.0065	B cn	0.0050	0.00071	mg/L	1		6020B	TCLP
Nickel	0.022		0.010	0.0040	mg/L	1		6020B	TCLP
Ignitable to Air	no		1.0	1.0	NONE	1		261.21	Total/NA
Ignitable to Flame	no		1.0	1.0	NONE	1		261.21	Total/NA
Ignitable to Friction	no		1.0	1.0	NONE	1		261.21	Total/NA
Ignitable to Water	no		1.0	1.0	NONE	1		261.21	Total/NA
Presence of Free Liquid	no				No Unit	1		9095B	Total/NA
pH	7.9		0.01	0.01	S.U.	1		9045D	Soluble
Temperature	21.4		0.01	0.01	Degrees C	1		9045D	Soluble
Corrosivity	no		0.01	0.01	NONE	1		9045D	Soluble

## Client Sample ID: Trip Blank

Lab Sample ID: 410-119319-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: UDEX Waste-01\_20230316**

**Lab Sample ID: 410-119319-1**

Date Collected: 03/16/23 10:10

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 95.5

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
trans-1,3-Dichloropropene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Ethylbenzene	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Styrene	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,4-Dichlorobenzene	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2-Dibromoethane	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2-Dichloroethane	ND	cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
4-Methyl-2-pentanone	ND	cn	540	54	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
<b>Methylcyclohexane</b>	<b>57</b>	<b>J cn</b>	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
<b>Toluene</b>	<b>69</b>	<b>J cn</b>	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Chlorobenzene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Cyclohexane	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2,4-Trichlorobenzene	ND	cn	540	270	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Dibromochloromethane	ND	cn	270	110	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Xylenes, Total	ND	cn	270	76	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Tetrachloroethene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
cis-1,2-Dichloroethene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
trans-1,2-Dichloroethene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Methyl tertiary butyl ether	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,3-Dichlorobenzene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Carbon tetrachloride	ND	cn	270	110	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
2-Hexanone	ND	cn	540	54	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Acetone	ND	^c cn	1100	330	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Chloroform	ND	cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
<b>Benzene</b>	<b>28</b>	<b>J cn</b>	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,1,1-Trichloroethane	ND	cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Bromomethane	ND	cn	270	38	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Chloromethane	ND	cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Chloroethane	ND	cn	270	54	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Vinyl chloride	ND	cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Methylene Chloride	ND	cn	270	110	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Carbon disulfide	ND	^c cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Bromoform	ND	cn	540	270	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Bromodichloromethane	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,1-Dichloroethane	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,1-Dichloroethene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Trichlorofluoromethane	ND	cn	270	38	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Dichlorodifluoromethane	ND	^c cn	270	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Freon 113	ND	^c cn	540	33	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2-Dichloropropane	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
2-Butanone	ND	cn	540	110	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,1,2-Trichloroethane	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Trichloroethene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
<b>Methyl acetate</b>	<b>74</b>	<b>J cn</b>	270	54	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,1,2,2-Tetrachloroethane	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2-Dichlorobenzene	ND	cn	270	27	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
1,2-Dibromo-3-Chloropropane	ND	cn	270	54	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50
Isopropylbenzene	ND	cn	270	22	ug/Kg	✱	03/20/23 19:04	03/24/23 21:24	50

# Client Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: UDEX Waste-01\_20230316**

**Lab Sample ID: 410-119319-1**

Date Collected: 03/16/23 10:10

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 95.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111	cn	54 - 135	03/20/23 19:04	03/24/23 21:24	50
Dibromofluoromethane (Surr)	104	cn	50 - 141	03/20/23 19:04	03/24/23 21:24	50
4-Bromofluorobenzene (Surr)	104	cn	50 - 131	03/20/23 19:04	03/24/23 21:24	50
Toluene-d8 (Surr)	101	cn	52 - 141	03/20/23 19:04	03/24/23 21:24	50

**Method: NJDEP NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total EPH (C9-C40)</b>	<b>5000</b>	<b>I</b>	210	210	mg/Kg	☆	03/27/23 16:35	03/29/23 14:45	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane (Surr)	144	S1+	40 - 140	03/27/23 16:35	03/29/23 14:45	20
o-terphenyl (Surr)	2	S1-	40 - 140	03/27/23 16:35	03/29/23 14:45	20

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Percent Moisture (EPA Moisture)</b>	<b>4.5</b>	<b>I</b>	1.0	1.0	%			03/20/23 11:01	1

**Client Sample ID: UDEX Waste-Composite\_20230316**

**Lab Sample ID: 410-119319-2**

Date Collected: 03/16/23 10:20

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 92.6

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND	cn	290	23	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
trans-1,3-Dichloropropene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Ethylbenzene	ND	cn	290	23	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Styrene	ND	cn	290	23	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,4-Dichlorobenzene	ND	cn	290	23	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,2-Dibromoethane	ND	cn	290	23	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,2-Dichloroethane	ND	cn	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
4-Methyl-2-pentanone	ND	cn	580	58	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
<b>Methylcyclohexane</b>	<b>35</b>	<b>J cn</b>	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
<b>Toluene</b>	<b>73</b>	<b>J cn</b>	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Chlorobenzene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Cyclohexane	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,2,4-Trichlorobenzene	ND	cn	580	290	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Dibromochloromethane	ND	cn	290	120	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Xylenes, Total	ND	cn	290	81	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Tetrachloroethene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
cis-1,2-Dichloroethene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
trans-1,2-Dichloroethene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Methyl tertiary butyl ether	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,3-Dichlorobenzene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Carbon tetrachloride	ND	cn	290	120	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
2-Hexanone	ND	cn	580	58	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Acetone	ND	^c cn	1200	350	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Chloroform	ND	cn	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Benzene	ND	cn	290	29	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
1,1,1-Trichloroethane	ND	cn	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Bromomethane	ND	cn	290	41	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50
Chloromethane	ND	cn	290	35	ug/Kg	☆	03/20/23 19:04	03/24/23 21:46	50

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: UDEX Waste-Composite\_20230316**

**Lab Sample ID: 410-119319-2**

Date Collected: 03/16/23 10:20

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 92.6

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND	cn	290	58	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Vinyl chloride	ND	cn	290	35	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Methylene Chloride	ND	cn	290	120	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Carbon disulfide	ND	^c cn	290	35	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Bromoform	ND	cn	580	290	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Bromodichloromethane	ND	cn	290	23	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,1-Dichloroethane	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,1-Dichloroethene	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Trichlorofluoromethane	ND	cn	290	41	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Dichlorodifluoromethane	ND	^c cn	290	35	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Freon 113	ND	^c cn	580	35	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,2-Dichloropropane	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
2-Butanone	ND	cn	580	120	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,1,2-Trichloroethane	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Trichloroethene	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Methyl acetate	ND	cn	290	58	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,1,2,2-Tetrachloroethane	ND	cn	290	23	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,2-Dichlorobenzene	ND	cn	290	29	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
1,2-Dibromo-3-Chloropropane	ND	cn	290	58	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50
Isopropylbenzene	ND	cn	290	23	ug/Kg	☼	03/20/23 19:04	03/24/23 21:46	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115	cn	54 - 135	03/20/23 19:04	03/24/23 21:46	50
Dibromofluoromethane (Surr)	108	cn	50 - 141	03/20/23 19:04	03/24/23 21:46	50
4-Bromofluorobenzene (Surr)	108	cn	50 - 131	03/20/23 19:04	03/24/23 21:46	50
Toluene-d8 (Surr)	105	cn	52 - 141	03/20/23 19:04	03/24/23 21:46	50

**Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016 (1C)	ND	cn	18	5.7	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1221 (1C)	ND	cn	18	5.7	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1232 (1C)	ND	cn	18	5.7	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1242 (1C)	ND	cn	18	5.7	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1248 (1C)	ND	cn	18	5.7	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1254 (1C)	ND	cn	18	6.9	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1
PCB-1260 (1C)	ND	cn	18	6.9	ug/Kg	☼	03/31/23 15:14	04/03/23 12:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr) (1C)	60	S1- cn	66 - 130	03/31/23 15:14	04/03/23 12:00	1
DCB Decachlorobiphenyl (Surr) (2C)	81	cn	66 - 130	03/31/23 15:14	04/03/23 12:00	1
Tetrachloro-m-xylene (1C)	45	S1- cn	68 - 130	03/31/23 15:14	04/03/23 12:00	1
Tetrachloro-m-xylene (2C)	60	S1- cn	68 - 130	03/31/23 15:14	04/03/23 12:00	1

**Method: NJDEP NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total EPH (C9-C40)</b>	<b>2300</b>	<b>!</b>	100	100	mg/Kg	☼	03/27/23 16:35	03/28/23 16:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane (Surr)	103	cn	40 - 140	03/27/23 16:35	03/28/23 16:15	10
o-terphenyl (Surr)	178	S1+	40 - 140	03/27/23 16:35	03/28/23 16:15	10

# Client Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: UDEX Waste-Composite\_20230316**

**Lab Sample ID: 410-119319-2**

Date Collected: 03/16/23 10:20

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 92.6

**Method: SW846 6020B - Metals (ICP/MS) - TCLP**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.020	0.0068	mg/L		03/30/23 19:56	03/31/23 09:05	1
<b>Barium</b>	<b>0.41</b>	<b>B cn</b>	0.020	0.0075	mg/L		03/30/23 19:56	03/31/23 09:05	1
<b>Cadmium</b>	<b>0.0026</b>	<b>J</b>	0.0050	0.0015	mg/L		03/30/23 19:56	03/31/23 09:05	1
Chromium	ND		0.020	0.0033	mg/L		03/30/23 19:56	03/31/23 09:05	1
<b>Lead</b>	<b>0.0065</b>	<b>B cn</b>	0.0050	0.00071	mg/L		03/30/23 19:56	03/31/23 09:05	1
Selenium	ND		0.010	0.0028	mg/L		03/30/23 19:56	03/31/23 09:05	1
Silver	ND		0.0050	0.0010	mg/L		03/30/23 19:56	03/31/23 09:05	1
<b>Nickel</b>	<b>0.022</b>		0.010	0.0040	mg/L		03/30/23 19:56	03/31/23 09:05	1

**Method: SW846 7470A - Mercury (CVAA) - TCLP**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		03/30/23 20:37	03/31/23 13:45	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ignitable to Air (40CFR261 261.21)</b>	<b>no</b>		1.0	1.0	NONE			03/27/23 17:22	1
<b>Ignitable to Flame (40CFR261 261.21)</b>	<b>no</b>		1.0	1.0	NONE			03/27/23 17:22	1
<b>Ignitable to Friction (40CFR261 261.21)</b>	<b>no</b>		1.0	1.0	NONE			03/27/23 17:22	1
<b>Ignitable to Water (40CFR261 261.21)</b>	<b>no</b>		1.0	1.0	NONE			03/27/23 17:22	1
Cyanide, Reactive (SW846 9012)	ND		59	20	mg/Kg		03/29/23 08:54	03/30/23 12:26	1
Sulfide, Reactive (SW846 9034)	ND		160	53	mg/Kg		03/29/23 08:54	03/29/23 12:27	1
<b>Presence of Free Liquid (SW846 9095B)</b>	<b>no</b>				No Unit			03/24/23 16:32	1
<b>Percent Moisture (EPA Moisture)</b>	<b>7.4 !</b>		1.0	1.0	%			03/22/23 11:00	1

**General Chemistry - Soluble**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>pH (SW846 9045D)</b>	<b>7.9</b>		0.01	0.01	S.U.			03/21/23 09:16	1
<b>Temperature (SW846 9045D)</b>	<b>21.4</b>		0.01	0.01	Degrees C			03/21/23 09:16	1
<b>Corrosivity (SW846 9045D)</b>	<b>no</b>		0.01	0.01	NONE			03/21/23 09:16	1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 410-119319-3**

Date Collected: 03/16/23 00:00

Matrix: Water

Date Received: 03/17/23 14:50

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			03/28/23 10:51	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/28/23 10:51	1
Styrene	ND		5.0	0.30	ug/L			03/28/23 10:51	1
1,4-Dichlorobenzene	ND		5.0	0.30	ug/L			03/28/23 10:51	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			03/28/23 10:51	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			03/28/23 10:51	1
Methylcyclohexane	ND		5.0	0.50	ug/L			03/28/23 10:51	1
Toluene	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Chlorobenzene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Cyclohexane	ND		5.0	1.0	ug/L			03/28/23 10:51	1

Euofins Lancaster Laboratories Environment Testing, LLC



# Client Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 410-119319-3**

Date Collected: 03/16/23 00:00

Matrix: Water

Date Received: 03/17/23 14:50

**Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			03/28/23 10:51	1
Dibromochloromethane	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Xylenes, Total	ND		1.0	0.40	ug/L			03/28/23 10:51	1
Tetrachloroethene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
trans-1,2-Dichloroethene	ND		2.0	0.70	ug/L			03/28/23 10:51	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/28/23 10:51	1
1,3-Dichlorobenzene	ND		5.0	0.68	ug/L			03/28/23 10:51	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/28/23 10:51	1
2-Hexanone	ND		10	0.85	ug/L			03/28/23 10:51	1
Acetone	ND	^c cn	20	0.70	ug/L			03/28/23 10:51	1
Chloroform	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Benzene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Bromomethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Chloromethane	ND		2.0	0.55	ug/L			03/28/23 10:51	1
Chloroethane	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Vinyl chloride	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Methylene Chloride	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Carbon disulfide	ND		5.0	0.30	ug/L			03/28/23 10:51	1
Bromoform	ND		4.0	1.0	ug/L			03/28/23 10:51	1
Bromodichloromethane	ND		1.0	0.20	ug/L			03/28/23 10:51	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			03/28/23 10:51	1
Dichlorodifluoromethane	ND	^c cn	1.0	0.20	ug/L			03/28/23 10:51	1
Freon 113	ND		10	0.30	ug/L			03/28/23 10:51	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
2-Butanone	ND		10	0.50	ug/L			03/28/23 10:51	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Trichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:51	1
Methyl acetate	ND		5.0	0.30	ug/L			03/28/23 10:51	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			03/28/23 10:51	1
1,2-Dichlorobenzene	ND		5.0	0.20	ug/L			03/28/23 10:51	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/L			03/28/23 10:51	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/28/23 10:51	1
n-Heptane	ND		5.0	2.0	ug/L			03/28/23 10:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 120					03/28/23 10:51	1
Dibromofluoromethane (Surr)	103		80 - 120					03/28/23 10:51	1
4-Bromofluorobenzene (Surr)	95		80 - 120					03/28/23 10:51	1
Toluene-d8 (Surr)	100		80 - 120					03/28/23 10:51	1

# Surrogate Summary

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (54-135)	DBFM (50-141)	BFB (50-131)	TOL (52-141)
410-119319-1	UDEX Waste-01_20230316	111 cn	104 cn	104 cn	101 cn
410-119319-2	UDEX Waste-Composite_20230316	115 cn	108 cn	108 cn	105 cn
LCS 410-357314/5	Lab Control Sample	110	104	100	100
LCS 410-357314/6	Lab Control Sample Dup	107	102	99	99
MB 410-357314/7	Method Blank	102	95	93	92

**Surrogate Legend**  
 DCA = 1,2-Dichloroethane-d4 (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 TOL = Toluene-d8 (Surr)

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-120)	DBFM (80-120)	BFB (80-120)	TOL (80-120)
410-119319-3	Trip Blank	106	103	95	100
LCS 410-358106/4	Lab Control Sample	105	101	97	102
MB 410-358106/6	Method Blank	101	101	97	100

**Surrogate Legend**  
 DCA = 1,2-Dichloroethane-d4 (Surr)  
 DBFM = Dibromofluoromethane (Surr)  
 BFB = 4-Bromofluorobenzene (Surr)  
 TOL = Toluene-d8 (Surr)

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCB1 (66-130)	DCB2 (66-130)	TCX1 (68-130)	TCX2 (68-130)
410-119319-2	UDEX Waste-Composite_20230316	60 S1- cn	81 cn	45 S1- cn	60 S1- cn
LCS 410-359754/2-A	Lab Control Sample	82	88	86	89
MB 410-359754/1-A	Method Blank	85	90	87	88

**Surrogate Legend**  
 DCB = DCB Decachlorobiphenyl (Surr)  
 TCX = Tetrachloro-m-xylene

## Method: NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1COD (40-140)	OTP (40-140)
410-119319-1	UDEX Waste-01_20230316	144 S1+	2 S1-
410-119319-2	UDEX Waste-Composite_20230316	103 cn	178 S1+
LCS 410-357901/2-A	Lab Control Sample	142 S1+	97

Eurofins Lancaster Laboratories Environment Testing, LLC

# Surrogate Summary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons (Continued)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1COD (40-140)	OTP (40-140)
LCS4 410-357901/3-A	Lab Control Sample Dup	127	89
MB 410-357901/1-A	Method Blank	101	101

#### Surrogate Legend

1COD = 1-Chlorooctadecane (Surr)

OTP = o- terphenyl (Surr)

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-357314/7

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,3-Dichloropropene	ND		250	20	ug/Kg			03/24/23 19:13	50
trans-1,3-Dichloropropene	ND		250	25	ug/Kg			03/24/23 19:13	50
Ethylbenzene	ND		250	20	ug/Kg			03/24/23 19:13	50
Styrene	ND		250	20	ug/Kg			03/24/23 19:13	50
1,4-Dichlorobenzene	ND		250	20	ug/Kg			03/24/23 19:13	50
1,2-Dibromoethane	ND		250	20	ug/Kg			03/24/23 19:13	50
1,2-Dichloroethane	ND		250	30	ug/Kg			03/24/23 19:13	50
4-Methyl-2-pentanone	ND		500	50	ug/Kg			03/24/23 19:13	50
Methylcyclohexane	ND		250	30	ug/Kg			03/24/23 19:13	50
Toluene	ND		250	30	ug/Kg			03/24/23 19:13	50
Chlorobenzene	ND		250	25	ug/Kg			03/24/23 19:13	50
Cyclohexane	ND		250	25	ug/Kg			03/24/23 19:13	50
1,2,4-Trichlorobenzene	ND		500	250	ug/Kg			03/24/23 19:13	50
Dibromochloromethane	ND		250	100	ug/Kg			03/24/23 19:13	50
Xylenes, Total	ND		250	70	ug/Kg			03/24/23 19:13	50
Tetrachloroethene	ND		250	25	ug/Kg			03/24/23 19:13	50
cis-1,2-Dichloroethene	ND		250	25	ug/Kg			03/24/23 19:13	50
trans-1,2-Dichloroethene	ND		250	25	ug/Kg			03/24/23 19:13	50
Methyl tertiary butyl ether	ND		250	25	ug/Kg			03/24/23 19:13	50
1,3-Dichlorobenzene	ND		250	25	ug/Kg			03/24/23 19:13	50
Carbon tetrachloride	ND		250	100	ug/Kg			03/24/23 19:13	50
2-Hexanone	ND		500	50	ug/Kg			03/24/23 19:13	50
Acetone	ND		1000	300	ug/Kg			03/24/23 19:13	50
Chloroform	ND		250	30	ug/Kg			03/24/23 19:13	50
Benzene	ND		250	25	ug/Kg			03/24/23 19:13	50
1,1,1-Trichloroethane	ND		250	30	ug/Kg			03/24/23 19:13	50
Bromomethane	ND		250	35	ug/Kg			03/24/23 19:13	50
Chloromethane	ND		250	30	ug/Kg			03/24/23 19:13	50
Chloroethane	ND		250	50	ug/Kg			03/24/23 19:13	50
Vinyl chloride	ND		250	30	ug/Kg			03/24/23 19:13	50
Methylene Chloride	ND		250	100	ug/Kg			03/24/23 19:13	50
Carbon disulfide	ND		250	30	ug/Kg			03/24/23 19:13	50
Bromoform	ND		500	250	ug/Kg			03/24/23 19:13	50
Bromodichloromethane	ND		250	20	ug/Kg			03/24/23 19:13	50
1,1-Dichloroethane	ND		250	25	ug/Kg			03/24/23 19:13	50
1,1-Dichloroethene	ND		250	25	ug/Kg			03/24/23 19:13	50
Trichlorofluoromethane	ND		250	35	ug/Kg			03/24/23 19:13	50
Dichlorodifluoromethane	ND		250	30	ug/Kg			03/24/23 19:13	50
Freon 113	ND		500	30	ug/Kg			03/24/23 19:13	50
1,2-Dichloropropane	ND		250	25	ug/Kg			03/24/23 19:13	50
2-Butanone	ND		500	100	ug/Kg			03/24/23 19:13	50
1,1,2-Trichloroethane	ND		250	25	ug/Kg			03/24/23 19:13	50
Trichloroethene	ND		250	25	ug/Kg			03/24/23 19:13	50
Methyl acetate	ND		250	50	ug/Kg			03/24/23 19:13	50
1,1,2,2-Tetrachloroethane	ND		250	20	ug/Kg			03/24/23 19:13	50
1,2-Dichlorobenzene	ND		250	25	ug/Kg			03/24/23 19:13	50
1,2-Dibromo-3-Chloropropane	ND		250	50	ug/Kg			03/24/23 19:13	50
Isopropylbenzene	ND		250	20	ug/Kg			03/24/23 19:13	50

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-357314/7

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	102		54 - 135		03/24/23 19:13	50
Dibromofluoromethane (Surr)	95		50 - 141		03/24/23 19:13	50
4-Bromofluorobenzene (Surr)	93		50 - 131		03/24/23 19:13	50
Toluene-d8 (Surr)	92		52 - 141		03/24/23 19:13	50

Lab Sample ID: LCS 410-357314/5

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
cis-1,3-Dichloropropene	1000	1030		ug/Kg		103	66 - 120
trans-1,3-Dichloropropene	1000	976		ug/Kg		98	68 - 122
Ethylbenzene	1000	981		ug/Kg		98	78 - 120
Styrene	1000	970		ug/Kg		97	76 - 120
1,4-Dichlorobenzene	1000	983		ug/Kg		98	80 - 120
1,2-Dibromoethane	1000	1010		ug/Kg		101	76 - 120
1,2-Dichloroethane	1000	1050		ug/Kg		105	71 - 128
4-Methyl-2-pentanone	12500	13800		ug/Kg		111	67 - 128
Methylcyclohexane	1000	1070		ug/Kg		107	61 - 124
Toluene	1000	1010		ug/Kg		101	80 - 120
Chlorobenzene	1000	955		ug/Kg		95	80 - 120
Cyclohexane	1000	1120		ug/Kg		112	58 - 126
1,2,4-Trichlorobenzene	1000	978		ug/Kg		98	56 - 130
Dibromochloromethane	1000	916		ug/Kg		92	69 - 125
Xylenes, Total	3000	2950		ug/Kg		98	75 - 120
Tetrachloroethene	1000	953		ug/Kg		95	73 - 120
cis-1,2-Dichloroethene	1000	1090		ug/Kg		109	80 - 125
trans-1,2-Dichloroethene	1000	1050		ug/Kg		105	80 - 126
Methyl tertiary butyl ether	1000	1070		ug/Kg		107	72 - 120
1,3-Dichlorobenzene	1000	942		ug/Kg		94	75 - 120
Carbon tetrachloride	1000	968		ug/Kg		97	64 - 134
2-Hexanone	12500	12800		ug/Kg		102	54 - 140
Acetone	12500	10700		ug/Kg		85	41 - 150
Chloroform	1000	1030		ug/Kg		103	80 - 120
Benzene	1000	1080		ug/Kg		108	80 - 120
1,1,1-Trichloroethane	1000	1030		ug/Kg		103	69 - 123
Bromomethane	1000	928		ug/Kg		93	45 - 140
Chloromethane	1000	933		ug/Kg		93	56 - 120
Chloroethane	1000	903		ug/Kg		90	43 - 135
Vinyl chloride	1000	921		ug/Kg		92	52 - 120
Methylene Chloride	1000	1050		ug/Kg		105	76 - 122
Carbon disulfide	1000	1140		ug/Kg		114	64 - 133
Bromoform	1000	845		ug/Kg		84	51 - 127
Bromodichloromethane	1000	1000		ug/Kg		100	70 - 120
1,1-Dichloroethane	1000	1020		ug/Kg		102	79 - 120
1,1-Dichloroethene	1000	1070		ug/Kg		107	73 - 129
Trichlorofluoromethane	1000	828		ug/Kg		83	55 - 134
Dichlorodifluoromethane	1000	791		ug/Kg		79	21 - 127

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-357314/5

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Freon 113	1000	1110		ug/Kg		111	64 - 135
1,2-Dichloropropane	1000	1060		ug/Kg		106	80 - 120
2-Butanone	12500	10900		ug/Kg		87	57 - 128
1,1,2-Trichloroethane	1000	1010		ug/Kg		101	80 - 120
Trichloroethene	1000	1030		ug/Kg		103	80 - 120
Methyl acetate	1000	1280		ug/Kg		128	67 - 128
1,1,2,2-Tetrachloroethane	1000	1020		ug/Kg		102	69 - 125
1,2-Dichlorobenzene	1000	925		ug/Kg		92	76 - 120
1,2-Dibromo-3-Chloropropane	1000	874		ug/Kg		87	48 - 134
Isopropylbenzene	1000	989		ug/Kg		99	77 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		54 - 135
Dibromofluoromethane (Surr)	104		50 - 141
4-Bromofluorobenzene (Surr)	100		50 - 131
Toluene-d8 (Surr)	100		52 - 141

Lab Sample ID: LCSD 410-357314/6

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD
		Result	Qualifier						Limit
cis-1,3-Dichloropropene	1000	1010		ug/Kg		101	66 - 120	2	30
trans-1,3-Dichloropropene	1000	958		ug/Kg		96	68 - 122	2	30
Ethylbenzene	1000	960		ug/Kg		96	78 - 120	2	30
Styrene	1000	954		ug/Kg		95	76 - 120	2	30
1,4-Dichlorobenzene	1000	964		ug/Kg		96	80 - 120	2	30
1,2-Dibromoethane	1000	992		ug/Kg		99	76 - 120	2	30
1,2-Dichloroethane	1000	1030		ug/Kg		103	71 - 128	2	30
4-Methyl-2-pentanone	12500	13500		ug/Kg		108	67 - 128	3	30
Methylcyclohexane	1000	1050		ug/Kg		105	61 - 124	2	30
Toluene	1000	987		ug/Kg		99	80 - 120	2	30
Chlorobenzene	1000	939		ug/Kg		94	80 - 120	2	30
Cyclohexane	1000	1100		ug/Kg		110	58 - 126	2	30
1,2,4-Trichlorobenzene	1000	960		ug/Kg		96	56 - 130	2	30
Dibromochloromethane	1000	906		ug/Kg		91	69 - 125	1	30
Xylenes, Total	3000	2910		ug/Kg		97	75 - 120	1	30
Tetrachloroethene	1000	939		ug/Kg		94	73 - 120	1	30
cis-1,2-Dichloroethene	1000	1060		ug/Kg		106	80 - 125	2	30
trans-1,2-Dichloroethene	1000	1020		ug/Kg		102	80 - 126	3	30
Methyl tertiary butyl ether	1000	1060		ug/Kg		106	72 - 120	1	30
1,3-Dichlorobenzene	1000	935		ug/Kg		94	75 - 120	1	30
Carbon tetrachloride	1000	947		ug/Kg		95	64 - 134	2	30
2-Hexanone	12500	12200		ug/Kg		98	54 - 140	4	30
Acetone	12500	9300		ug/Kg		74	41 - 150	14	30
Chloroform	1000	1000		ug/Kg		100	80 - 120	3	30
Benzene	1000	1070		ug/Kg		107	80 - 120	1	30
1,1,1-Trichloroethane	1000	1010		ug/Kg		101	69 - 123	2	30

# QC Sample Results

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-357314/6

Matrix: Solid

Analysis Batch: 357314

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromomethane	1000	887		ug/Kg		89	45 - 140	5	30
Chloromethane	1000	905		ug/Kg		91	56 - 120	3	30
Chloroethane	1000	888		ug/Kg		89	43 - 135	2	30
Vinyl chloride	1000	886		ug/Kg		89	52 - 120	4	30
Methylene Chloride	1000	1040		ug/Kg		104	76 - 122	1	30
Carbon disulfide	1000	1110		ug/Kg		111	64 - 133	3	30
Bromoform	1000	833		ug/Kg		83	51 - 127	1	30
Bromodichloromethane	1000	987		ug/Kg		99	70 - 120	1	30
1,1-Dichloroethane	1000	1010		ug/Kg		101	79 - 120	1	30
1,1-Dichloroethene	1000	1030		ug/Kg		103	73 - 129	4	30
Trichlorofluoromethane	1000	801		ug/Kg		80	55 - 134	3	30
Dichlorodifluoromethane	1000	757		ug/Kg		76	21 - 127	4	30
Freon 113	1000	1090		ug/Kg		109	64 - 135	2	30
1,2-Dichloropropane	1000	1040		ug/Kg		104	80 - 120	2	30
2-Butanone	12500	10400		ug/Kg		83	57 - 128	5	30
1,1,2-Trichloroethane	1000	1000		ug/Kg		100	80 - 120	1	30
Trichloroethene	1000	1010		ug/Kg		101	80 - 120	2	30
Methyl acetate	1000	1250		ug/Kg		125	67 - 128	2	30
1,1,2,2-Tetrachloroethane	1000	993		ug/Kg		99	69 - 125	3	30
1,2-Dichlorobenzene	1000	907		ug/Kg		91	76 - 120	2	30
1,2-Dibromo-3-Chloropropane	1000	864		ug/Kg		86	48 - 134	1	30
Isopropylbenzene	1000	975		ug/Kg		98	77 - 120	1	30

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		54 - 135
Dibromofluoromethane (Surr)	102		50 - 141
4-Bromofluorobenzene (Surr)	99		50 - 131
Toluene-d8 (Surr)	99		52 - 141

Lab Sample ID: MB 410-358106/6

Matrix: Water

Analysis Batch: 358106

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			03/28/23 10:29	1
trans-1,3-Dichloropropene	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/28/23 10:29	1
Styrene	ND		5.0	0.30	ug/L			03/28/23 10:29	1
1,4-Dichlorobenzene	ND		5.0	0.30	ug/L			03/28/23 10:29	1
1,2-Dibromoethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1
1,2-Dichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
4-Methyl-2-pentanone	ND		10	0.50	ug/L			03/28/23 10:29	1
Methylcyclohexane	ND		5.0	0.50	ug/L			03/28/23 10:29	1
Toluene	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Chlorobenzene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Cyclohexane	ND		5.0	1.0	ug/L			03/28/23 10:29	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/L			03/28/23 10:29	1
Dibromochloromethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1

Eurofins Lancaster Laboratories Environment Testing, LLC



# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-358106/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 358106

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Xylenes, Total	ND		1.0	0.40	ug/L			03/28/23 10:29	1
Tetrachloroethene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
cis-1,2-Dichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
trans-1,2-Dichloroethene	ND		2.0	0.70	ug/L			03/28/23 10:29	1
Methyl tertiary butyl ether	ND		1.0	0.20	ug/L			03/28/23 10:29	1
1,3-Dichlorobenzene	ND		5.0	0.68	ug/L			03/28/23 10:29	1
Carbon tetrachloride	ND		1.0	0.30	ug/L			03/28/23 10:29	1
2-Hexanone	ND		10	0.85	ug/L			03/28/23 10:29	1
Acetone	ND		20	0.70	ug/L			03/28/23 10:29	1
Chloroform	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Benzene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
1,1,1-Trichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Bromomethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Chloromethane	ND		2.0	0.55	ug/L			03/28/23 10:29	1
Chloroethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Vinyl chloride	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Methylene Chloride	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Carbon disulfide	ND		5.0	0.30	ug/L			03/28/23 10:29	1
Bromoform	ND		4.0	1.0	ug/L			03/28/23 10:29	1
Bromodichloromethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1
1,1-Dichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Dichlorodifluoromethane	ND		1.0	0.20	ug/L			03/28/23 10:29	1
Freon 113	ND		10	0.30	ug/L			03/28/23 10:29	1
1,2-Dichloropropane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
2-Butanone	ND		10	0.50	ug/L			03/28/23 10:29	1
1,1,2-Trichloroethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Trichloroethene	ND		1.0	0.30	ug/L			03/28/23 10:29	1
Methyl acetate	ND		5.0	0.30	ug/L			03/28/23 10:29	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.30	ug/L			03/28/23 10:29	1
1,2-Dichlorobenzene	ND		5.0	0.20	ug/L			03/28/23 10:29	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.30	ug/L			03/28/23 10:29	1
Isopropylbenzene	ND		5.0	0.20	ug/L			03/28/23 10:29	1
n-Heptane	ND		5.0	2.0	ug/L			03/28/23 10:29	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		03/28/23 10:29	1
Dibromofluoromethane (Surr)	101		80 - 120		03/28/23 10:29	1
4-Bromofluorobenzene (Surr)	97		80 - 120		03/28/23 10:29	1
Toluene-d8 (Surr)	100		80 - 120		03/28/23 10:29	1

Lab Sample ID: LCS 410-358106/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 358106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-358106/4

Matrix: Water

Analysis Batch: 358106

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,3-Dichloropropene	20.0	17.6		ug/L		88	67 - 120
Ethylbenzene	20.0	19.1		ug/L		95	80 - 120
Styrene	20.0	18.3		ug/L		92	80 - 120
1,4-Dichlorobenzene	20.0	19.0		ug/L		95	80 - 120
1,2-Dibromoethane	20.0	18.9		ug/L		94	77 - 120
1,2-Dichloroethane	20.0	17.3		ug/L		87	73 - 124
4-Methyl-2-pentanone	250	244		ug/L		97	62 - 133
Methylcyclohexane	20.0	17.9		ug/L		89	67 - 121
Toluene	20.0	20.0		ug/L		100	80 - 120
Chlorobenzene	20.0	18.5		ug/L		92	80 - 120
Cyclohexane	20.0	17.8		ug/L		89	68 - 126
1,2,4-Trichlorobenzene	20.0	19.8		ug/L		99	63 - 120
Dibromochloromethane	20.0	18.1		ug/L		91	71 - 120
Xylenes, Total	60.0	56.6		ug/L		94	80 - 120
Tetrachloroethene	20.0	18.7		ug/L		93	80 - 120
cis-1,2-Dichloroethene	20.0	20.4		ug/L		102	80 - 125
trans-1,2-Dichloroethene	20.0	19.5		ug/L		98	80 - 126
Methyl tertiary butyl ether	20.0	18.3		ug/L		92	69 - 122
1,3-Dichlorobenzene	20.0	17.8		ug/L		89	80 - 120
Carbon tetrachloride	20.0	17.5		ug/L		88	64 - 134
2-Hexanone	250	253		ug/L		101	56 - 135
Acetone	250	272		ug/L		109	54 - 157
Chloroform	20.0	18.5		ug/L		93	80 - 120
Benzene	20.0	20.1		ug/L		101	80 - 120
1,1,1-Trichloroethane	20.0	17.1		ug/L		85	67 - 126
Bromomethane	20.0	18.1		ug/L		90	53 - 128
Chloromethane	20.0	15.8		ug/L		79	56 - 121
Chloroethane	20.0	18.5		ug/L		92	55 - 123
Vinyl chloride	20.0	16.4		ug/L		82	56 - 120
Methylene Chloride	20.0	20.0		ug/L		100	80 - 120
Carbon disulfide	20.0	20.4		ug/L		102	65 - 128
Bromoform	20.0	16.2		ug/L		81	51 - 120
Bromodichloromethane	20.0	17.1		ug/L		86	71 - 120
1,1-Dichloroethane	20.0	19.0		ug/L		95	80 - 120
1,1-Dichloroethene	20.0	19.0		ug/L		95	80 - 131
Trichlorofluoromethane	20.0	13.8		ug/L		69	55 - 135
Dichlorodifluoromethane	20.0	12.5		ug/L		62	41 - 127
Freon 113	20.0	17.8		ug/L		89	73 - 139
1,2-Dichloropropane	20.0	19.3		ug/L		96	80 - 120
2-Butanone	250	257		ug/L		103	59 - 135
1,1,2-Trichloroethane	20.0	19.2		ug/L		96	80 - 120
Trichloroethene	20.0	18.3		ug/L		91	80 - 120
Methyl acetate	20.0	22.9		ug/L		115	54 - 136
1,1,2,2-Tetrachloroethane	20.0	19.4		ug/L		97	72 - 120
1,2-Dichlorobenzene	20.0	18.0		ug/L		90	80 - 120
1,2-Dibromo-3-Chloropropane	20.0	17.1		ug/L		86	47 - 131
Isopropylbenzene	20.0	19.7		ug/L		98	80 - 120
n-Heptane	20.0	18.2		ug/L		91	56 - 133

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 410-358106/4**  
**Matrix: Water**  
**Analysis Batch: 358106**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Toluene-d8 (Surr)	102		80 - 120

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

**Lab Sample ID: MB 410-359754/1-A**  
**Matrix: Solid**  
**Analysis Batch: 360181**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 359754**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016 (1C)	ND		17	5.3	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1221 (1C)	ND		17	5.3	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1232 (1C)	ND		17	5.3	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1242 (1C)	ND		17	5.3	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1248 (1C)	ND		17	5.3	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1254 (1C)	ND		17	6.4	ug/Kg		03/31/23 15:14	04/03/23 08:20	1
PCB-1260 (1C)	ND		17	6.4	ug/Kg		03/31/23 15:14	04/03/23 08:20	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr) (1C)	85		66 - 130	03/31/23 15:14	04/03/23 08:20	1
DCB Decachlorobiphenyl (Surr) (2C)	90		66 - 130	03/31/23 15:14	04/03/23 08:20	1
Tetrachloro-m-xylene (1C)	87		68 - 130	03/31/23 15:14	04/03/23 08:20	1
Tetrachloro-m-xylene (2C)	88		68 - 130	03/31/23 15:14	04/03/23 08:20	1

**Lab Sample ID: LCS 410-359754/2-A**  
**Matrix: Solid**  
**Analysis Batch: 360181**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 359754**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
PCB-1016 (1C)	168	138		ug/Kg		82	68 - 121
PCB-1260 (1C)	168	146		ug/Kg		87	75 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr) (1C)	82		66 - 130
DCB Decachlorobiphenyl (Surr) (2C)	88		66 - 130
Tetrachloro-m-xylene (1C)	86		68 - 130
Tetrachloro-m-xylene (2C)	89		68 - 130

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons

**Lab Sample ID: MB 410-357901/1-A**  
**Matrix: Solid**  
**Analysis Batch: 358172**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 357901**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total EPH (C9-C40)	ND		10	10	mg/Kg		03/27/23 16:35	03/28/23 13:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane (Surr)	101		40 - 140	03/27/23 16:35	03/28/23 13:02	1
o-terphenyl (Surr)	101		40 - 140	03/27/23 16:35	03/28/23 13:02	1

**Lab Sample ID: LCS 410-357901/2-A**  
**Matrix: Solid**  
**Analysis Batch: 358172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 357901**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total EPH (C9-C40)	72.4	74.4		mg/Kg		103	40 - 140
C9	4.03	4.17		mg/Kg		103	25 - 140
C40	4.03	2.96		mg/Kg		73	40 - 140
C10	4.01	3.99		mg/Kg		99	40 - 140
C28	4.00	3.56		mg/Kg		89	40 - 140
C12	4.02	3.94		mg/Kg		98	40 - 140
C -14	4.01	3.97		mg/Kg		99	40 - 140
C16	4.01	4.02		mg/Kg		100	40 - 140
C18	4.02	4.03		mg/Kg		100	40 - 140
C20	4.01	3.38		mg/Kg		84	40 - 140
C22	4.02	3.34		mg/Kg		83	40 - 140
C 24	4.00	3.43		mg/Kg		86	40 - 140
C26	4.04	3.61		mg/Kg		90	40 - 140
C30	4.02	3.77		mg/Kg		94	40 - 140
C32	4.01	3.73		mg/Kg		93	40 - 140
C34	4.03	3.47		mg/Kg		86	40 - 140
C36	4.02	3.10		mg/Kg		77	40 - 140
C38	4.02	3.04		mg/Kg		76	40 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctadecane (Surr)	142	S1+	40 - 140
o-terphenyl (Surr)	97		40 - 140

**Lab Sample ID: LCSD 410-357901/3-A**  
**Matrix: Solid**  
**Analysis Batch: 358172**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 357901**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total EPH (C9-C40)	72.4	64.1		mg/Kg		89	40 - 140	15	25
C9	4.03	3.88		mg/Kg		96	25 - 140	7	25
C40	4.03	2.85		mg/Kg		71	40 - 140	4	25
C10	4.01	3.64		mg/Kg		91	40 - 140	9	25
C28	4.00	3.32		mg/Kg		83	40 - 140	7	25
C12	4.02	3.65		mg/Kg		91	40 - 140	8	25
C -14	4.01	3.66		mg/Kg		91	40 - 140	8	25
C16	4.01	3.65		mg/Kg		91	40 - 140	10	25
C18	4.02	3.75		mg/Kg		93	40 - 140	7	25

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: NJ EPH - NJ EPH Extractable Petroleum Hydrocarbons (Continued)

**Lab Sample ID: LCSD 410-357901/3-A**  
**Matrix: Solid**  
**Analysis Batch: 358172**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 357901**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
C20	4.01	3.40		mg/Kg		85	40 - 140	1		25
C22	4.02	3.17		mg/Kg		79	40 - 140	5		25
C 24	4.00	3.23		mg/Kg		81	40 - 140	6		25
C26	4.04	3.26		mg/Kg		81	40 - 140	10		25
C30	4.02	3.45		mg/Kg		86	40 - 140	9		25
C32	4.01	3.44		mg/Kg		86	40 - 140	8		25
C34	4.03	3.17		mg/Kg		79	40 - 140	9		25
C36	4.02	2.82		mg/Kg		70	40 - 140	10		25
C38	4.02	2.79		mg/Kg		70	40 - 140	9		25

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctadecane (Surr)	127		40 - 140
o- terphenyl (Surr)	89		40 - 140

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: MB 410-359385/1-A**  
**Matrix: Solid**  
**Analysis Batch: 359675**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 359385**

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.020	0.0068	mg/L		03/30/23 19:56	03/31/23 08:37	1
Barium	ND		0.020	0.0075	mg/L		03/30/23 19:56	03/31/23 08:37	1
Cadmium	ND		0.0050	0.0015	mg/L		03/30/23 19:56	03/31/23 08:37	1
Chromium	ND		0.020	0.0033	mg/L		03/30/23 19:56	03/31/23 08:37	1
Lead	ND		0.0050	0.00071	mg/L		03/30/23 19:56	03/31/23 08:37	1
Selenium	ND		0.010	0.0028	mg/L		03/30/23 19:56	03/31/23 08:37	1
Silver	ND		0.0050	0.0010	mg/L		03/30/23 19:56	03/31/23 08:37	1
Nickel	ND		0.010	0.0040	mg/L		03/30/23 19:56	03/31/23 08:37	1

**Lab Sample ID: LCS 410-359385/2-A**  
**Matrix: Solid**  
**Analysis Batch: 359675**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 359385**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Arsenic	5.00	5.01		mg/L		100	85 - 120	
Barium	5.00	4.88		mg/L		98	80 - 120	
Cadmium	0.500	0.490		mg/L		98	86 - 113	
Chromium	5.00	4.74		mg/L		95	90 - 115	
Lead	0.500	0.499		mg/L		100	90 - 115	
Selenium	1.00	1.05		mg/L		105	80 - 120	
Silver	0.500	0.485		mg/L		97	88 - 113	
Nickel	5.00	4.92		mg/L		98	90 - 114	

# QC Sample Results

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-359398/1-A  
 Matrix: Solid  
 Analysis Batch: 359694

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 359398

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		03/30/23 20:37	03/31/23 13:23	1

Lab Sample ID: LCS 410-359398/2-A  
 Matrix: Solid  
 Analysis Batch: 359694

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 359398

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00100	0.000919		mg/L		92	80 - 118

## Method: 9012 - Cyanide, Reactive

Lab Sample ID: MB 410-358568/1-A  
 Matrix: Solid  
 Analysis Batch: 359204

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 358568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	ND		60	20	mg/Kg		03/29/23 08:54	03/30/23 13:04	1

Lab Sample ID: LCS 410-358568/2-A  
 Matrix: Solid  
 Analysis Batch: 359204

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 358568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Reactive	1000	ND		mg/Kg		1	0 - 5.14

## Method: 9034 - Sulfide, Reactive

Lab Sample ID: MB 410-358568/1-A  
 Matrix: Solid  
 Analysis Batch: 358683

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 358568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		160	54	mg/Kg		03/29/23 08:54	03/29/23 12:27	1

Lab Sample ID: LCS 410-358568/25-A  
 Matrix: Solid  
 Analysis Batch: 358683

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 358568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide, Reactive	538	503		mg/Kg		93	62 - 104

## Method: 9045D - pH

Lab Sample ID: LCS 410-355554/1-A  
 Matrix: Solid  
 Analysis Batch: 355646

Client Sample ID: Lab Control Sample  
 Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	6.9		S.U.		99	95 - 105

# QC Sample Results

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Method: 9095B - Paint Filter

Lab Sample ID: MB 410-357304/1  
Matrix: Solid  
Analysis Batch: 357304

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Presence of Free Liquid	no				No Unit			03/24/23 16:32	1

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# QC Association Summary

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## GC/MS VOA

### Prep Batch: 355435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-1	UDEX Waste-01_20230316	Total/NA	Solid	5030C	
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	5030C	

### Analysis Batch: 357314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-1	UDEX Waste-01_20230316	Total/NA	Solid	8260C	355435
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	8260C	355435
MB 410-357314/7	Method Blank	Total/NA	Solid	8260C	
LCS 410-357314/5	Lab Control Sample	Total/NA	Solid	8260C	
LCS 410-357314/6	Lab Control Sample Dup	Total/NA	Solid	8260C	

### Analysis Batch: 358106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-3	Trip Blank	Total/NA	Water	8260C	
MB 410-358106/6	Method Blank	Total/NA	Water	8260C	
LCS 410-358106/4	Lab Control Sample	Total/NA	Water	8260C	

## GC Semi VOA

### Prep Batch: 357901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-1	UDEX Waste-01_20230316	Total/NA	Solid	3546	
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	3546	
MB 410-357901/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-357901/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 410-357901/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

### Analysis Batch: 358172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	NJ EPH	357901
MB 410-357901/1-A	Method Blank	Total/NA	Solid	NJ EPH	357901
LCS 410-357901/2-A	Lab Control Sample	Total/NA	Solid	NJ EPH	357901
LCS 410-357901/3-A	Lab Control Sample Dup	Total/NA	Solid	NJ EPH	357901

### Analysis Batch: 358573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-1	UDEX Waste-01_20230316	Total/NA	Solid	NJ EPH	357901

### Prep Batch: 359754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	3546	
MB 410-359754/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-359754/2-A	Lab Control Sample	Total/NA	Solid	3546	

### Analysis Batch: 360181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	8082A	359754
MB 410-359754/1-A	Method Blank	Total/NA	Solid	8082A	359754
LCS 410-359754/2-A	Lab Control Sample	Total/NA	Solid	8082A	359754

# QC Association Summary

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Metals

### Leach Batch: 358095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	TCLP	Solid	1311	

### Prep Batch: 359385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	TCLP	Solid	3005A	358095
MB 410-359385/1-A	Method Blank	Total Recoverable	Solid	3005A	
LCS 410-359385/2-A	Lab Control Sample	Total Recoverable	Solid	3005A	

### Prep Batch: 359398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	TCLP	Solid	7470A	358095
MB 410-359398/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 410-359398/2-A	Lab Control Sample	Total/NA	Solid	7470A	

### Analysis Batch: 359675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	TCLP	Solid	6020B	359385
MB 410-359385/1-A	Method Blank	Total Recoverable	Solid	6020B	359385
LCS 410-359385/2-A	Lab Control Sample	Total Recoverable	Solid	6020B	359385

### Analysis Batch: 359694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	TCLP	Solid	7470A	359398
MB 410-359398/1-A	Method Blank	Total/NA	Solid	7470A	359398
LCS 410-359398/2-A	Lab Control Sample	Total/NA	Solid	7470A	359398

## General Chemistry

### Analysis Batch: 355278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-1	UDEX Waste-01_20230316	Total/NA	Solid	Moisture	

### Leach Batch: 355554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Soluble	Solid	DI Leach	
LCS 410-355554/1-A	Lab Control Sample	Soluble	Solid	DI Leach	

### Analysis Batch: 355646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Soluble	Solid	9045D	355554
LCS 410-355554/1-A	Lab Control Sample	Soluble	Solid	9045D	355554

### Analysis Batch: 356189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	Moisture	

### Analysis Batch: 357304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	9095B	
MB 410-357304/1	Method Blank	Total/NA	Solid	9095B	

# QC Association Summary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## General Chemistry

### Analysis Batch: 357894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	261.21	

### Prep Batch: 358568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	7.3.4	
MB 410-358568/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 410-358568/25-A	Lab Control Sample	Total/NA	Solid	7.3.4	
LCS 410-358568/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	

### Analysis Batch: 358683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	9034	358568
MB 410-358568/1-A	Method Blank	Total/NA	Solid	9034	358568
LCS 410-358568/25-A	Lab Control Sample	Total/NA	Solid	9034	358568

### Analysis Batch: 359204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-119319-2	UDEX Waste-Composite_20230316	Total/NA	Solid	9012	358568
MB 410-358568/1-A	Method Blank	Total/NA	Solid	9012	358568
LCS 410-358568/2-A	Lab Control Sample	Total/NA	Solid	9012	358568

# Lab Chronicle

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: UDEX Waste-01\_20230316**

**Lab Sample ID: 410-119319-1**

Date Collected: 03/16/23 10:10

Matrix: Solid

Date Received: 03/17/23 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	355278	K9VH	ELLE	03/20/23 11:01

**Client Sample ID: UDEX Waste-01\_20230316**

**Lab Sample ID: 410-119319-1**

Date Collected: 03/16/23 10:10

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			355435	D8NM	ELLE	03/20/23 19:04
Total/NA	Analysis	8260C		50	357314	Y6ZN	ELLE	03/24/23 21:24
Total/NA	Prep	3546			357901	MD4W	ELLE	03/27/23 16:35
Total/NA	Analysis	NJ EPH		20	358573	KP5X	ELLE	03/29/23 14:45

**Client Sample ID: UDEX Waste-Composite\_20230316**

**Lab Sample ID: 410-119319-2**

Date Collected: 03/16/23 10:20

Matrix: Solid

Date Received: 03/17/23 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			358095	UNWS	ELLE	03/29/23 17:45 - 03/30/23 00:00 <sup>1</sup>
TCLP	Prep	3005A			359385	UAMX	ELLE	03/30/23 19:56
TCLP	Analysis	6020B		1	359675	F7JF	ELLE	03/31/23 09:05
TCLP	Leach	1311			358095	UNWS	ELLE	03/29/23 17:45 - 03/30/23 00:00 <sup>1</sup>
TCLP	Prep	7470A			359398	UAMX	ELLE	03/30/23 20:37
TCLP	Analysis	7470A		1	359694	UEFS	ELLE	03/31/23 13:45
Total/NA	Analysis	261.21		1	357894	AVC3	ELLE	03/27/23 17:22
Total/NA	Prep	7.3.4			358568	B6LN	ELLE	03/29/23 08:54
Total/NA	Analysis	9012		1	359204	JCG7	ELLE	03/30/23 12:26
Total/NA	Prep	7.3.4			358568	B6LN	ELLE	03/29/23 08:54
Total/NA	Analysis	9034		1	358683	B6LN	ELLE	03/29/23 12:27
Soluble	Leach	DI Leach			355554	M98K	ELLE	03/21/23 06:26
Soluble	Analysis	9045D		1	355646	M98K	ELLE	03/21/23 09:16
Total/NA	Analysis	9095B		1	357304	AVC3	ELLE	03/24/23 16:32
Total/NA	Analysis	Moisture		1	356189	UVJN	ELLE	03/22/23 11:00

**Client Sample ID: UDEX Waste-Composite\_20230316**

**Lab Sample ID: 410-119319-2**

Date Collected: 03/16/23 10:20

Matrix: Solid

Date Received: 03/17/23 14:50

Percent Solids: 92.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			355435	D8NM	ELLE	03/20/23 19:04
Total/NA	Analysis	8260C		50	357314	Y6ZN	ELLE	03/24/23 21:46
Total/NA	Prep	3546			359754	ZB3H	ELLE	03/31/23 15:14
Total/NA	Analysis	8082A		1	360181	JC94	ELLE	04/03/23 12:00
Total/NA	Prep	3546			357901	MD4W	ELLE	03/27/23 16:35
Total/NA	Analysis	NJ EPH		10	358172	UHEW	ELLE	03/28/23 16:15

# Lab Chronicle

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 410-119319-3**

**Date Collected: 03/16/23 00:00**

**Matrix: Water**

**Date Received: 03/17/23 14:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260C		1	358106	DVW2	ELLE	03/28/23 10:51

\* Completion dates and times are reported or not reported per method requirements or individual lab discretion.

### Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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# Accreditation/Certification Summary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-24

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
261.21		Solid	Ignitable to Air
261.21		Solid	Ignitable to Flame
261.21		Solid	Ignitable to Friction
261.21		Solid	Ignitable to Water
9045D		Solid	Corrosivity
Moisture		Solid	Percent Moisture
NJ EPH	3546	Solid	Total EPH (C9-C40)



# Method Summary

Client: Stantec Consulting Corp.  
 Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	ELLE
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	ELLE
NJ EPH	NJ EPH Extractable Petroleum Hydrocarbons	NJDEP	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
261.21	Ignitability	40CFR261	ELLE
9012	Cyanide, Reactive	SW846	ELLE
9034	Sulfide, Reactive	SW846	ELLE
9045D	pH	SW846	ELLE
9095B	Paint Filter	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
1311	TCLP Extraction	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
7.3.3	Cyanide, Reactive	SW846	ELLE
7.3.4	Sulfide, Reactive	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE
DI Leach	Deionized Water Leaching Procedure	ASTM	ELLE

**Protocol References:**

- 40CFR261 = 40 CFR Part 261
- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- NJDEP = New Jersey Department of Environmental Protection
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

- ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300





# Sample Summary

Client: Stantec Consulting Corp.  
Project/Site: PESRM UDEX ICE 407 Waste Characterization

Job ID: 410-119319-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-119319-1	UDEX Waste-01_20230316	Solid	03/16/23 10:10	03/17/23 14:50
410-119319-2	UDEX Waste-Composite_20230316	Solid	03/16/23 10:20	03/17/23 14:50
410-119319-3	Trip Blank	Water	03/16/23 00:00	03/17/23 14:50

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revised COC  
**Chain of Custody Record**



410-119319-01 Chain of Custody

896-22914 1

<b>Client Information</b>		Sampler <i>Tabiton Lee</i>		Lab PM Carter, Amek													
Client Contact Andrew Klingbeil		Phone 484-481-0096		E-Mail Loran Carter@eurofinsus.com													
Company Stantec Consulting Corp		PWSID		State of Origin													
Address 1060 Andrew Drive Suite 140		Due Date Requested:		<b>Analysis Requested</b>													
City West Chester		TAT Requested (days):															
State, Zip PA, 19380		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No															
Phone 610-840-2541(Tel)		PO # 213403039															
Email andrew.klingbeil@stantec.com		WO #															
Project Name PESRM UDEX ICE 407 Waste Characterization		Project # 41003563		Preservation Codes: A - HCL                      M - Hexane B - NaOH                    N - None C - Zn Acetate              O - As/AsO2 D - Nitric Acid              P - Na2O4S E - NaHSO4                 Q - Na2SO3 F - MeOH                    R - Na2S2O3 G - Amchlor                S - H2SO4 H - Ascorbic Acid          T - TSP Dodecahydrate I - Ice                         U - Acetone J - DI Water                V - MCAA K - EDTA                    W - pH 4-5 L - EDA                      Y - Trizma Z - other (specify)  Other:													
Site PES		SSOW#															
<b>Sample Identification</b>		<b>Sample Date</b>				<b>Sample Time</b>		<b>Sample Type</b> (C=Comp, G=grab)		<b>Matrix</b> (Numerical, Solid, Composite, A+B)		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Total Number of Containers		<b>Special Instructions/Note:</b>	
UDEX Waste - 01 - 2023 03 16		03/16/23				1010		G		S		X		X		X	
UDEX Waste - Composite - 2023 03 16		03/16/23				1020		G		S		X		X		X	
Trip Blank		03/16/23				-		-		-		-		-		-	
<b>Possible Hazard Identification</b>		<input type="checkbox"/> Non-Hazard				<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Poison B		<input type="checkbox"/> Unknown		<input type="checkbox"/> Radiological		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>	
Deliverable Requested I, II, III, IV, Other (specify)																<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For    Months	
Empty Krt Relinquished by		Date				Time		Method of Shipment									
Relinquished by <i>T Lee</i>		Date/Time 03/17/2023 0938		Company Stantec		Received by <i>Boel L</i>		Date/Time 3/17/23 756		Company							
Relinquished by <i>T Lee</i>		Date/Time 03/17/2023 1345		Company Stantec		Received by		Date/Time		Company							
Relinquished by		Date/Time		Company		Received by		Date/Time 3/17/23 1450		Company EUET							
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.				Cooler Temperature (°C) and Other Remarks 0.5											

( )







## Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 410-119319-1

Login Number: 119319

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Jeremiah, Cory T

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
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 ( $\leq 6^{\circ}\text{C}$ , not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	True	





# PURE SOIL TECHNOLOGIES

P.O. Drawer 43  
Farmingdale, NJ 07727  
Phone: 732.308.1113 Fax: 732.462.9626

# 168011

Weigh Scale Ticket #  
# escala de boleto

## NON-HAZARDOUS MATERIAL MANIFEST

You must return 4 copies of this manifest upon delivery.

### SITE INFORMATION

Site Name: PES  
Address: 3144 PASSYUNK AVE  
City, State, Zip: PHILADELPHIA, PA 19145

### AGENT / CONSULTANT

Name: R&B DEBRIS LLC  
Contact Name: PATRICK DURIA  
Phone: (609) 261-8036

Approval Number <u>2112037</u>	Description of Material <u>Non-Haz Contaminated Soil</u> <u>Stantec</u> <u>Roll off # <u>RB48382BT</u></u>	<p><b>** Must be Initialed By Authorized Agent.</b></p> <table border="1"> <thead> <tr> <th></th> <th>SITE</th> <th>**INITIALS</th> </tr> </thead> <tbody> <tr> <td>Time Arrive:</td> <td><u>0720</u></td> <td><u>BT</u></td> </tr> <tr> <td>Time Depart:</td> <td><u>0740</u></td> <td><u>BT</u></td> </tr> </tbody> </table>		SITE	**INITIALS	Time Arrive:	<u>0720</u>	<u>BT</u>	Time Depart:	<u>0740</u>	<u>BT</u>
	SITE	**INITIALS									
Time Arrive:	<u>0720</u>	<u>BT</u>									
Time Depart:	<u>0740</u>	<u>BT</u>									

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Robert Armstrong  
Generator/Authorized Agent Name (Print)

[Signature]  
Authorized Agent  
for PESRA LLC  
Signature

05-24-2023  
Shipment Date

### TRANSPORTER

Transporter Name: Champion Disposal  
Address: 5700 Pylon  
City, State, Zip: Irvington NJ

Driver Name (Print): Stephen Lebon  
Vehicle License No/State/EPA No.: AW 410A  
Truck Number: 116

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

[Signature]  
Driver Signature  
5-24-23  
Date

\_\_\_\_\_  
Driver Signature  
\_\_\_\_\_  
Date

### DESTINATION

Site Name: PURE SOIL TECHNOLOGIES Phone: (732) 657-8581  
Address: 655 SOUTH HOPE CHAPEL ROAD, JACKSON, NJ 08527

Business hours are: Monday through Friday 7 AM to 5 PM. Saturday By Appointment Only.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[Signature]  
Name of Authorized Agent  
Signature  
5-24-23  
Receipt Date  
7:120





# PES Project Load Ticket

Load Ticket: 25505

Date: 5-24-2023

### Scrap

Sold to: \_\_\_\_\_

Location: \_\_\_\_\_

Carrier: \_\_\_\_\_

### Non-Haz / ACM / Special Waste

Activity Location: Stantec Yard

### Steel / Ferrous

- No. 1 P+S
- No. 2 Heavy Melt
- Cast Iron
- Mixed
- Pipe
- Light Iron
- Re-Bar
- Other \_\_\_\_\_

### Non-Ferrous

- Insulated Copper Wire
- No. 1 Copper Wire
- Brass
- Aluminum
- Stainless, Grade \_\_\_\_\_
- Other Alloy, Grade \_\_\_\_\_
- Mixed
- Other: \_\_\_\_\_

### Condition

- Prepared
- Unprepared
- Green Waste
- Concrete
- Masonry
- Mixed Masonry
- Wood Only
- Demo Debris (C&D)
- Dirt / Fill
- Sand Fill
- Crushed Stone
- Other: \_\_\_\_\_

### Waste Stream

- C&D Demolition Debris
- Non-Friable ACM
- Friable ACM
- PB WWTP Sludge
- GP WWTP Sludge
- Characteristic Haz Waste (flammable D001, corrosive D002, reactive D003, toxicity D004 -D043)
- Process Haz Waste
- Demo Debris (C&D)
- Non-Haz Waste (Solid)
- Non-Haz Waste (Liquid)
- PCB (Non-TSCA)
- PCB (TSCA)

Disposal Facility: Pure soil technologies

Carrier: Champion Disposal

Truck #: 118

Container #: RB4838212T

Manifest #: 168011

Profile / Approval #: 2112037

### Scale Info

Scale Ticket #: \_\_\_\_\_

Gross Weight: 71140 lbs

Tare weight: 29840 lbs

Net weight: 41300 lbs

Net Kilogram Conversion (PCB Only): \_\_\_\_\_

Scale Ticket #: \_\_\_\_\_

Gross Weight: \_\_\_\_\_

Tare Weight: \_\_\_\_\_

Net Weight: \_\_\_\_\_

NorthStar Rep. Signature: \_\_\_\_\_

Received By: [Signature]

NorthStar Rep. Signature: CD



