



# Closure of Hazardous Waste Storage Areas Public Information Session

Former Philadelphia Energy Solutions Refinery, Facility ID Nos. 51-33624 and 51-33620  
Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)  
3144 West Passyunk Avenue, Philadelphia, Pennsylvania

Presented by:  
Kevin Long (Principal Consultant) and Abigail Spiers (Consultant)  
Terraphase Engineering Inc.

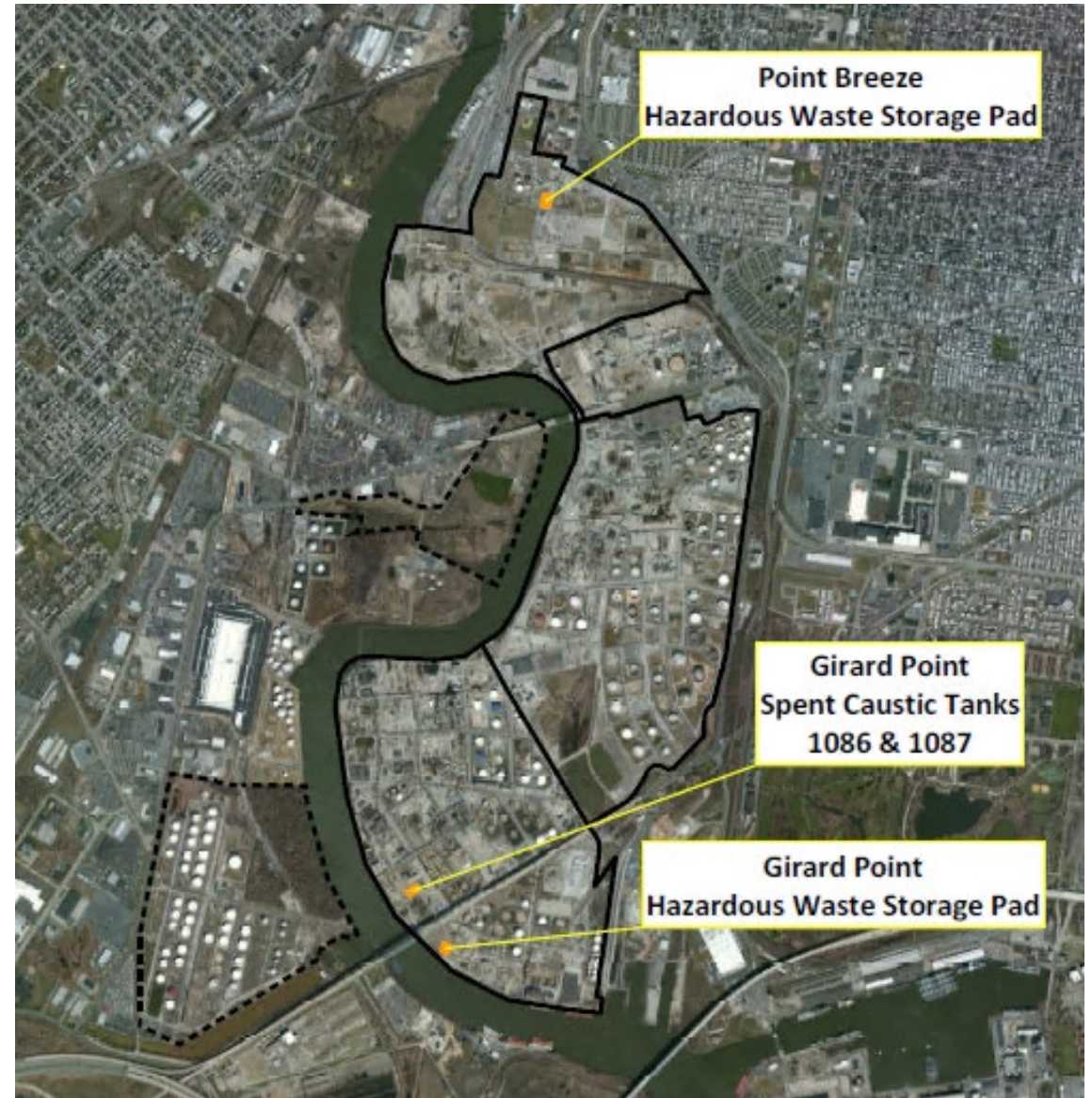
June 3, 2024



# Closure of Hazardous Waste Storage Areas

## Agenda

- Purpose of Meeting
- Regulating Hazardous Waste Storage
- Historic Fill & Other Sources
- Revised *Supplement to Closure Plan*
- Background & Update for Each Area
- Conclusions
- Next Steps
- Questions and Comments

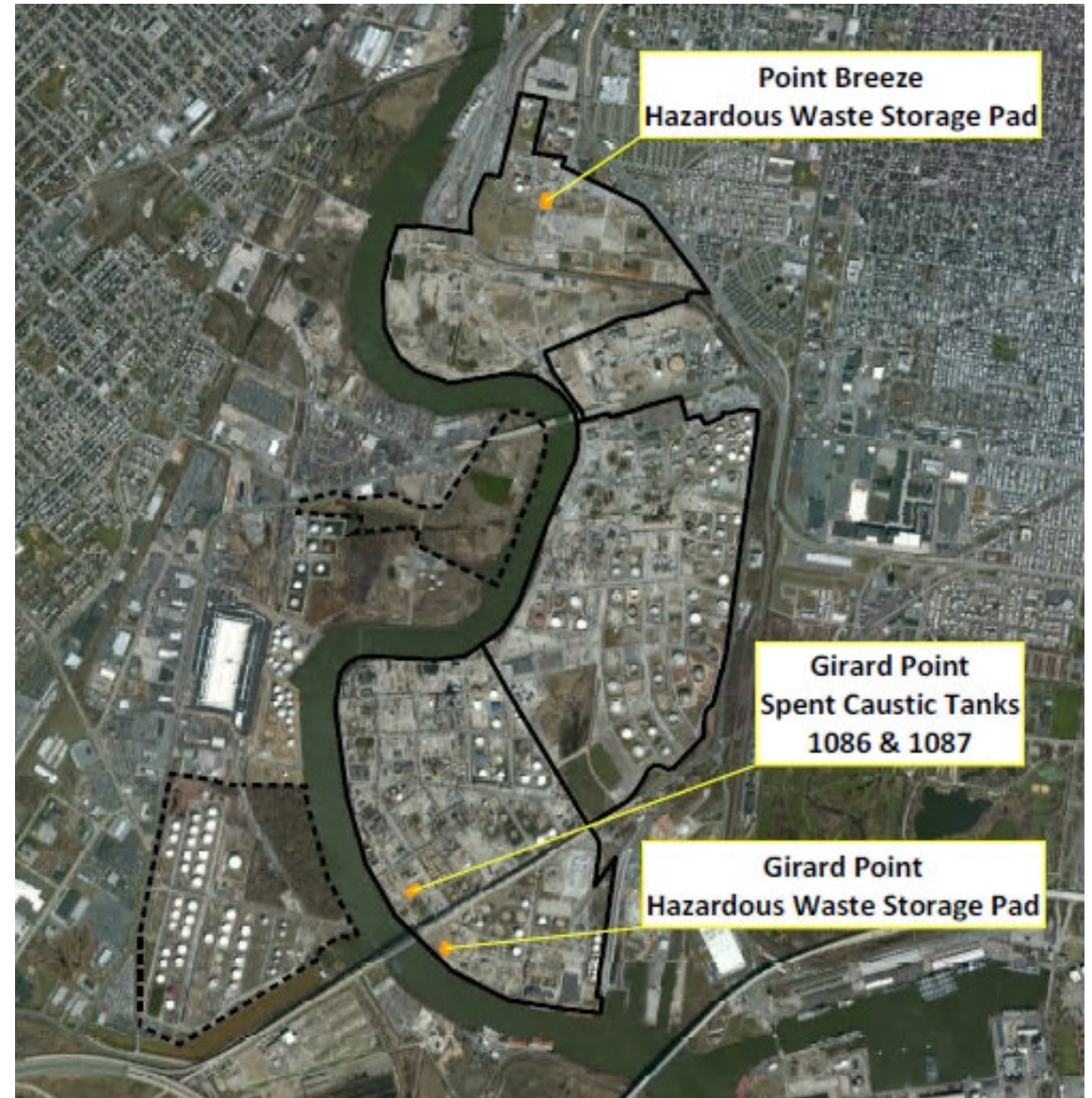




# Closure of Hazardous Waste Storage Areas

## Purpose of Meeting

- **Status** of efforts to close on-site areas where hazardous waste was permitted to be stored
- Provide public an opportunity to offer **comments** and ask **questions** on the closure process and efforts



# Closure of Hazardous Waste Storage Areas

## Regulating Hazardous Waste Storage

Hazardous waste is generated at **industrial** sites, including refineries, from processes involving toxic, corrosive, ignitable, or reactive substances

Federal and state **regulations**, particularly the Resource Conservation and Recovery Act (RCRA), govern the management of hazardous waste

Regulations ensure "cradle-to-grave" **tracking** of hazardous waste from generation to disposal

On-site storage of hazardous waste is allowed for **limited** periods (e.g., up to 90 days)

Storage areas must comply with stringent **standards** to prevent environmental contamination

Handling hazardous waste must undergo regular inspections and follow **strict** containment, labeling, and record-keeping protocols

When a storage area closes, it must follow a closure process to decontaminate and **safely** decommission the area

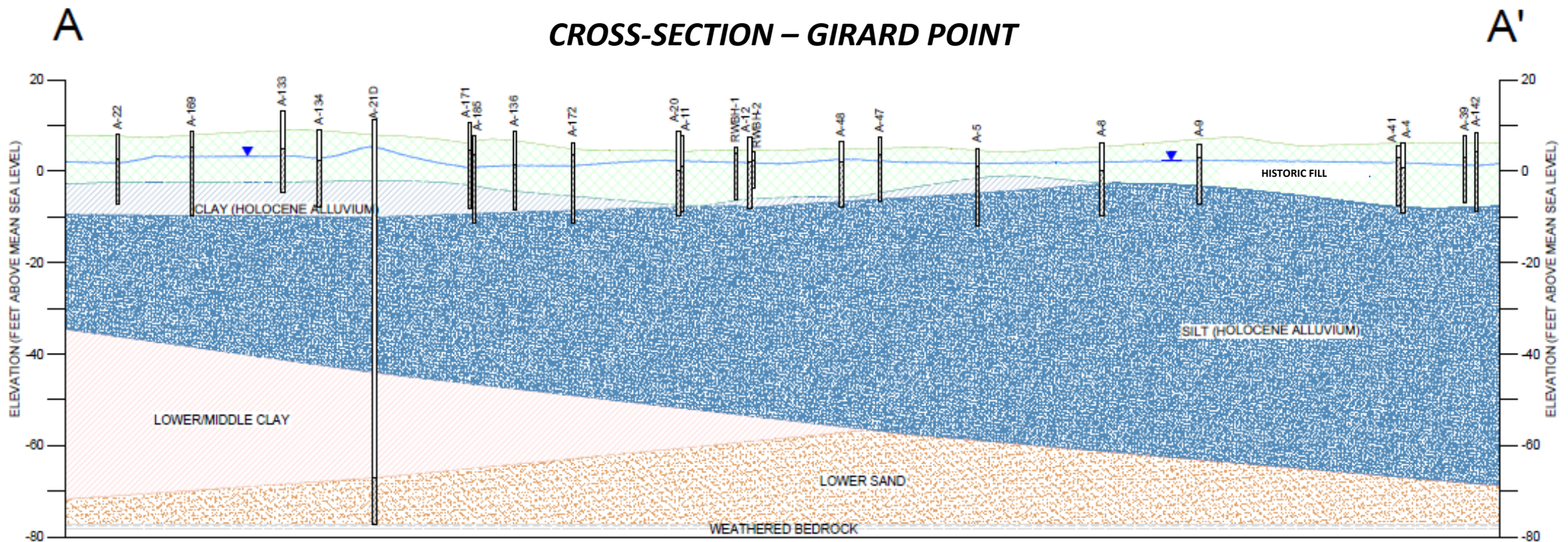
Closure process ensures the removal of hazardous waste and remediation of contamination, **eliminating** long-term environmental risks



# Closure of Hazardous Waste Storage Areas

## Historic Fill

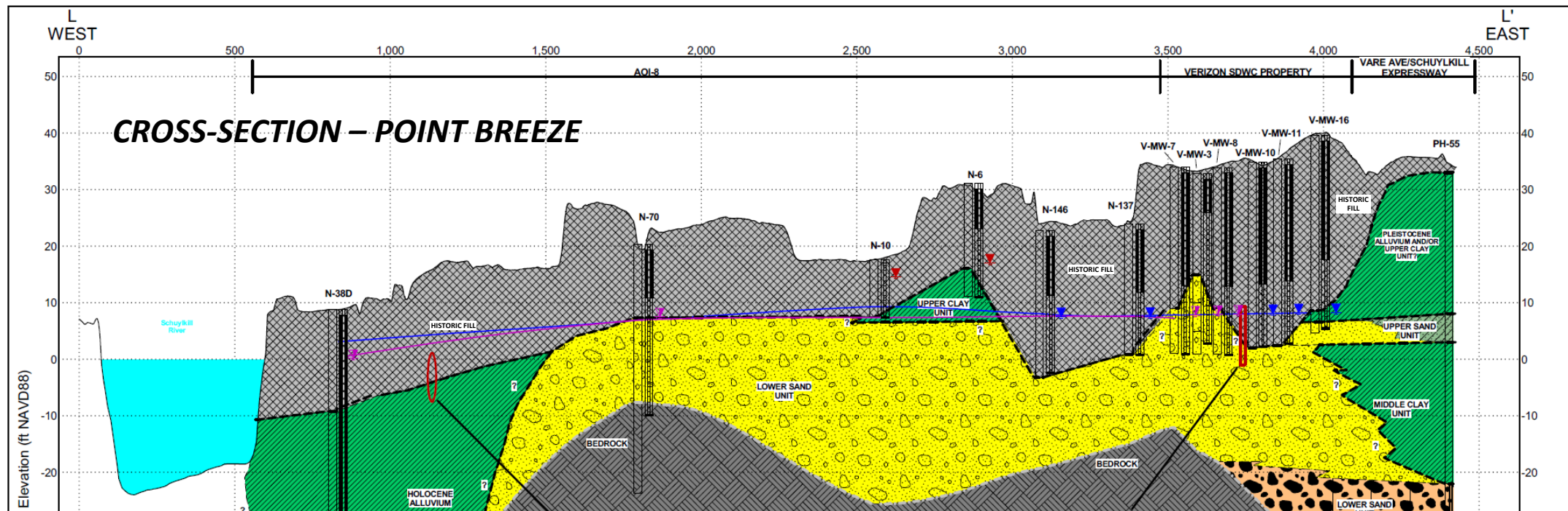
- During development of sites in the past, **fill material** (e.g., soil, rock, stone, gravel, asphalt, brick) was used to level the grade (“historic fill”)
- Chemicals commonly found in historic fill include **metals** (e.g., arsenic & lead) and semivolatile organic chemicals (e.g., **polycyclic aromatic hydrocarbons** [PAHs] like benzo(a)pyrene & naphthalene)
- PAHs are chemicals formed through **incomplete combustion** of organic materials (e.g., coal, oil, gas, wood). Found in crude oil, tar, and charred portions of grilled meat.



# Closure of Hazardous Waste Storage Areas

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# Closure of Hazardous Waste Storage Areas

## Pre-Existing Contamination from Other Refinery Related Sources

- In addition to historic fill, **other pre-existing contamination** present due other refinery related impacts
- **Challenge** to determine if contamination associated with release from the storage areas
- Contamination identified that is NOT associated with release from the storage areas will be **addressed under Act 2**



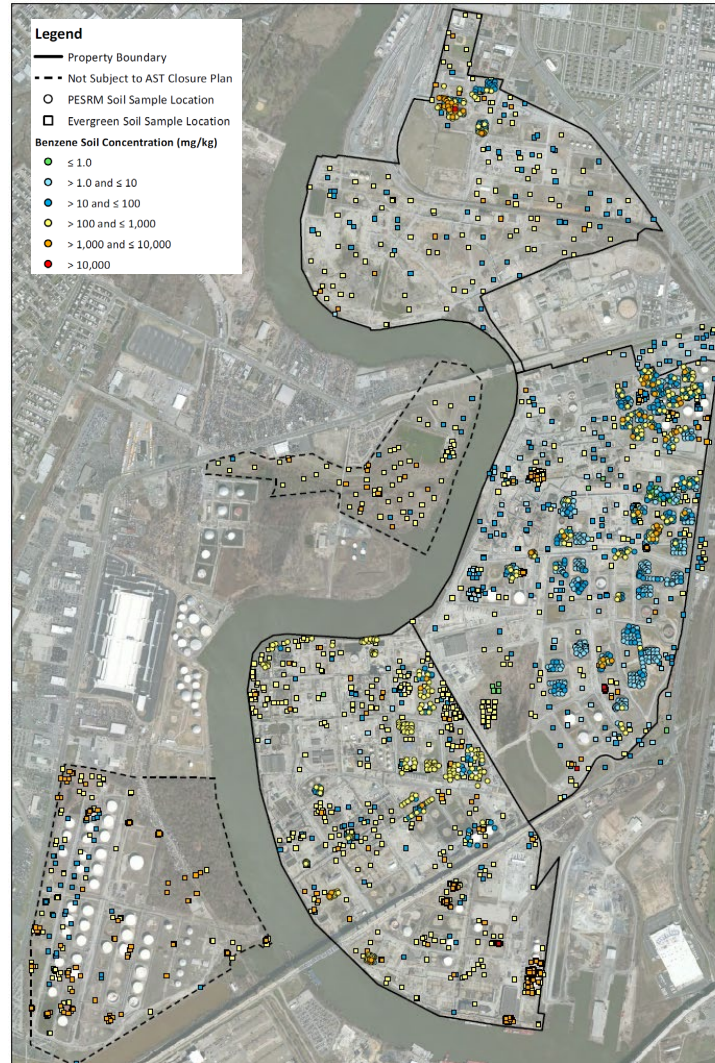
Aerial photograph of the Atlantic Refining Company - 1926  
(Library Company of Philadelphia) <https://philadelphiaencyclopedia.org/>



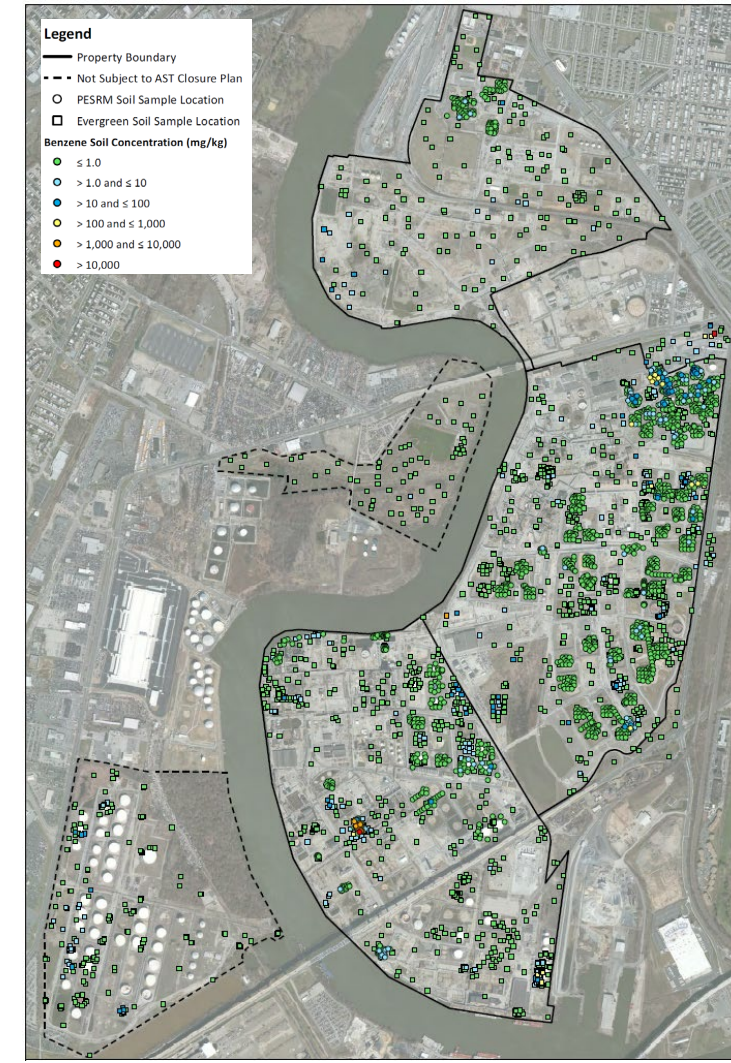
# Closure of Hazardous Waste Storage Areas

## Pre-Existing Contamination from Other Refinery Related Sources

- In addition to historic fill, **other pre-existing contamination** present due to other refinery related impacts
- **Challenge** to determine if contamination associated with release from the storage areas
- Contamination identified that is NOT associated with release from the storage areas will be **addressed under Act 2**



Lead



Benzene



# Pennsylvania's Land Recycling Program ("Act 2")



<https://www.dep.pa.gov/Business/Land/LandRecycling/Pages/default.aspx>

- Cleanup program established in 1995
- Encourages **cleanup/reuse** of contaminated **commercial & industrial** sites
- Sets standards which are **protective** of human health and the environment
- Three remediation standards which can be used to **demonstrate** that a release has been **adequately characterized** and **remediated** under Act 2
- Statewide Health Standard uses **generic risk-based cleanup levels** derived by PADEP ("Medium-Specific Concentrations"; MSC)
- Used to demonstrate that chemical concentrations are at **acceptable** levels and considers:
  - (1) risk to human health from **direct contact** with chemicals in soil and
  - (2) the **protection of groundwater** for potable and nonpotable uses (i.e., **leaching** of chemicals in soil)

Table 3—Medium-Specific Concentrations (MSCs) for Organic Regulated Substances in Soil  
A. Direct Contact Numeric Values

REGULATED SUBSTANCE	CASRN	Residential 0-15 feet	Nonresidential	
			Surface Soil 0-2 feet	Subsurface Soil 2-15 feet
ACENAPHTHENE	83-32-6	13,000 G	190,000 C	190,000 C
ACENAPHTHYLENE	208-96-6	13,000 G	190,000 C	190,000 C
ACEPHATE	30569-19-1	880 G	10,000 C	190,000 C
ACETALDEHYDE	75-07-0	170 N	720 N	830 N
ACETONE	67-64-1	10,000 C	10,000 C	10,000 C
ACETONITRILE	75-05-8	1,100 N	4,800 N	5,500 N
ACETOPHENONE	98-86-2	10,000 C	10,000 C	10,000 C
ACETYLAMINOFLUORENE, 2- (2AAF)	53-96-3	4.9 G	24 G	190,000 C
ACROLEIN	107-02-8	0.38 N	1.6 N	1.8 N
ACRYLAMIDE	79-06-1	1.7 N	22 N	26 N
ACRYLIC ACID	79-10-7	19 N	79 N	91 N
ACRYLONITRILE	107-13-1	6.8 N	33 N	38 N
ALACHLOR	15072-60-8	330 G	1,600 G	190,000 C
ALDICARB	118-06-3	220 G	3,200 G	190,000 C
ALDICARB SULFONE	1648-88-4	220 G	3,200 G	190,000 C
ALDICARB SULFOXIDE	1648-87-3	220 G	3,200 G	190,000 C
ALDRIN	309-00-2	1.1 G	5.4 G	190,000 C
ALLYL ALCOHOL	107-18-6	1.9 N	8 N	9.1 N
AMETRYN	834-12-8	2,000 G	29,000 G	190,000 C
AMINOBIIPHENYL, 4-	92-67-1	0.89 G	4.3 G	190,000 C
AMITROLE	61-82-5	20 G	97 G	190,000 C
AMMONIA	7664-41-7	1,900 N	8,000 N	9,100 N
AMMONIUM SULFAMATE	7773-06-0	44,000 G	190,000 C	190,000 C
ANILINE	62-53-3	19 N	79 N	91 N
ANTHRACENE	120-12-7	66,000 G	190,000 C	190,000 C
ATRAZINE	1912-24-9	81 G	400 G	190,000 C
AZINPHOS-METHYL (GUTHION)	86-50-0	660 G	9,600 G	190,000 C
BAYGON (PROPOXUR)	114-26-1	880 G	13,000 G	190,000 C
BENOMYL	17804-35-2	11,000 G	160,000 G	190,000 C
BENTAZON	25057-89-0	6,600 G	96,000 G	190,000 C
BENZENE	71-43-2	57 N	290 N	330 N
BENZIDINE	92-87-5	0.018 G	0.4 G	190,000 C
BENZO[A]ANTHRACENE	56-55-3	6 G	130 G	190,000 C
BENZO[A]PYRENE	50-32-8	0.58 G	12 G	190,000 C
BENZO[B]FLUORANTHENE	205-99-2	3.5 G	76 G	190,000 C
BENZO[GHI]PERYLENE	191-24-2	13,000 G	190,000 C	190,000 C
BENZO[K]FLUORANTHENE	207-08-9	4 G	76 G	190,000 C
BENZOIC ACID	65-85-0	190,000 C	190,000 C	190,000 C
BENZOTRICHLORIDE	98-07-7	1.4 G	7 G	10,000 C
BENZYL ALCOHOL	100-51-6	10,000 C	10,000 C	10,000 C
BENZYL CHLORIDE	100-44-7	9 N	45 N	52 N
BETA PROPIOLACTONE	57-57-8	0.11 N	0.56 N	0.64 N
BHC, ALPHA	319-84-6	3 G	14 G	190,000 C
BHC, BETA-	319-85-7	10 G	51 G	190,000 C
BHC, GAMMA (LINDANE)	58-89-9	17 G	83 G	190,000 C
BIPHENYL, 1,1-	92-52-4	2,300 G	11,000 G	190,000 C
BIS(2-CHLOROETHOXY)METHANE	111-91-1	660 G	9,600 G	10,000 C
BIS(2-CHLOROETHYL)ETHER	111-44-4	1.3 N	6.7 N	7.7 N
BIS(2-CHLORO-ISOPROPYL)ETHER	108-60-1	44 N	220 N	250 N
BISCHLOROMETHYL)ETHER	542-88-1	0.0072 N	0.036 N	0.041 N
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	1,300 G	6,300 G	10,000 C
BISPHENOL A	80-05-7	11,000 G	160,000 G	190,000 C
BROMACIL	314-40-8	22,000 G	190,000 C	190,000 C
BROMOCHLOROMETHANE	74-87-5	770 N	3,200 N	3,600 N
BROMODICHLOROMETHANE	75-27-4	12 N	60 N	69 N
BROMOMETHANE	74-83-9	95 N	400 N	460 N
BROMOXENYL	1089-64-5	4,400 G	64,000 G	190,000 C
BROMOXENYL OCTANOATE	1089-69-2	4,400 G	64,000 G	190,000 C
BUTADIENE, 1,3-	106-69-0	6.5 G	27 G	85 N

All concentration are in mg/kg

# Closure of Hazardous Waste Storage Areas

## Revised *Supplement to the Closure Plan*

- Pursuing risk-based clean closure
- After demolition, soil samples collected
- Compare measured concentrations to SHS MSC
- If concentrations  $\leq$  SHS MSC  $\rightarrow$  risk-based clean closure **requirements are met**

- 
- If concentrations  $>$  SHS MSC, then closure to include human health and ecological risk assessment:
    - Determine if concentrations  $>$  SHS MSC are **related to release** from the storage areas or related to **pre-existing** contamination unrelated to the storage areas using **multiple lines of evidence**
    - If concentrations  $>$  SHS MSC are related to release from the storage areas, **characterize risks** for complete or potentially complete exposure pathways and **complete remedial action** if risks are **unacceptable**
    - If concentrations  $>$  SHS MSC are NOT related to release from the storage areas  $\rightarrow$  risk-based clean closure **requirements are met**

Philadelphia Energy Solutions Refining and Marketing LLC  
c/o Hilco Redevelopment Partners  
111 South Wacker Drive, Suite 3000  
Chicago, Illinois 60606

February 9, 2024

Via Electronic Mail

Dr. Mohamad Mazid  
PA Department of Environmental Protection  
South East Regional Office  
2 East Main Street  
Norristown, PA 19104

RE: Revised Supplement to the Closure Plan for the Point Breeze Hazardous Waste Container Storage Pad, the Girard Point Hazardous Waste Container Storage Pad, and the Two Girard Point Hazardous Waste Aboveground Storage Tanks (EPA ID #PAD049791098)

Dear Dr. Mazid:

Philadelphia Energy Solutions Refining and Marketing LLC ("PESRM") hereby submits to the Pennsylvania Department of Environmental Protection ("Department") this Supplement to the Closure Plan for the Point Breeze Hazardous Waste Container Storage Pad, the Girard Point Hazardous Waste Container Storage Pad, and the Two Girard Point Hazardous Waste Aboveground Storage Tanks located at 3144 Passyunk Avenue, Philadelphia, PA 19145 and identified in the Resource Conservation and Recovery Act ("RCRA") Part B Permit #PAD049791098 (the "Permit").

PESRM is pursuing closure of the hazardous waste storage areas in accordance with the Permit. Following the demolition of the concrete pads in each storage area, PESRM collected samples of the underlying soil in accordance with PADEP-approved soil sampling plans submitted in December 2021 and August 2022. The samples were submitted for laboratory analysis to assess whether soil has been impacted by previously unidentified releases to the environment from historic operations of the hazardous waste storage areas.

Part II.I of the Permit provides that "The Permittee shall close the facility as required by 40 CFR 264.111 and in accordance with the Closure Plan." On September 13, 2023, PESRM and the Department amended the January 15, 2020, Consent Order and Agreement ("CO&A") to clarify that the United States Environmental Protection Agency ("USEPA") has interpreted 40 CFR 264.111 to allow for a risk-based clean closure. The following describes how PESRM intends to evaluate the results of soil samples collected from the former hazardous waste storage areas and is provided as a Supplement to the Closure Plan for the Point Breeze Hazardous Waste Container Storage Pad, the Girard Point Hazardous Waste Container Storage Pad, and the Two Girard Point Hazardous Waste Aboveground Storage Tanks located at 3144 Passyunk Avenue, Philadelphia, PA 19145 and identified under RCRA Permit #PAD049791098:

- (1) Chemical concentrations in soil will first be compared to PADEP Statewide Health Standard (SHS) Medium Specific Concentrations (MSCs) for non-residential soil direct contact and non-residential soil-to-groundwater (used aquifer) protection. If soil sampling results from a given storage area are less than or equal to MSCs, the area is considered to have met the requirements for risk-based clean closure.



# Closure of Hazardous Waste Storage Areas

## Point Breeze Haz Waste Storage Pad

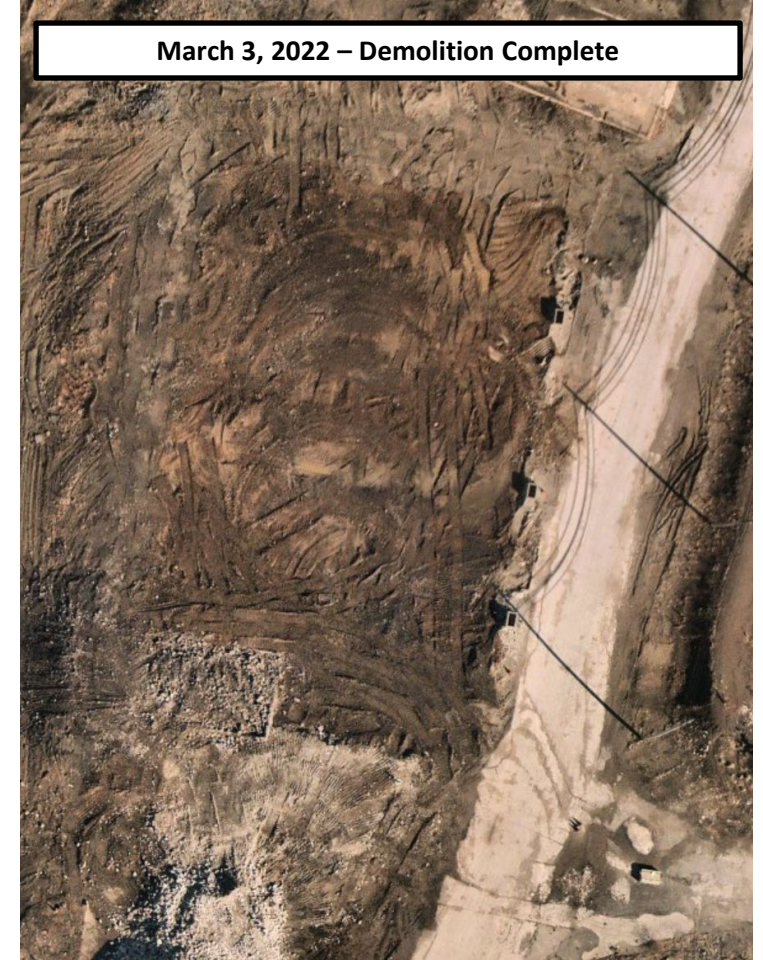
Apr 12, 2018 – Supporting Refinery Operations



Oct 14, 2021 – Out of Service and Cleared



March 3, 2022 – Demolition Complete





# Closure of Hazardous Waste Storage Areas

## Point Breeze Haz Waste Storage Pad

- Submitted soil sampling **plan** to PADEP on 12/29/21
- Sampling conducted March and August 2022
- Installed 46 **borings**
- Collected 55 soil **samples**
  - Targeted towards features designed to collect and contain **fluids** and/or **stormwater**;
  - Supplemented by **random** locations determined using a 30-ft x 30-ft **grid**
  - Follow-up samples to further characterize **nature** and **extent** of concentrations > MSCs
- **Analyzed** for regulated substances & additional constituents based on types of hazardous waste stored



### Technical Memorandum

To: Mohamad M. Mazid, PhD, PE  
Chief Technical Services  
Department of Environmental Protection  
Southeast Regional Office  
Waste Management Program  
2 East Main Street  
Norristown, PA 19401

From: Kevin L. Long  
Nicholas J. Scala, PG, LSRP  
Terraphase Engineering Inc.

cc: Joseph Jeray, PE, PESRM

Date: September 9, 2021  
Updated December 8, 2021  
Updated December 29, 2021

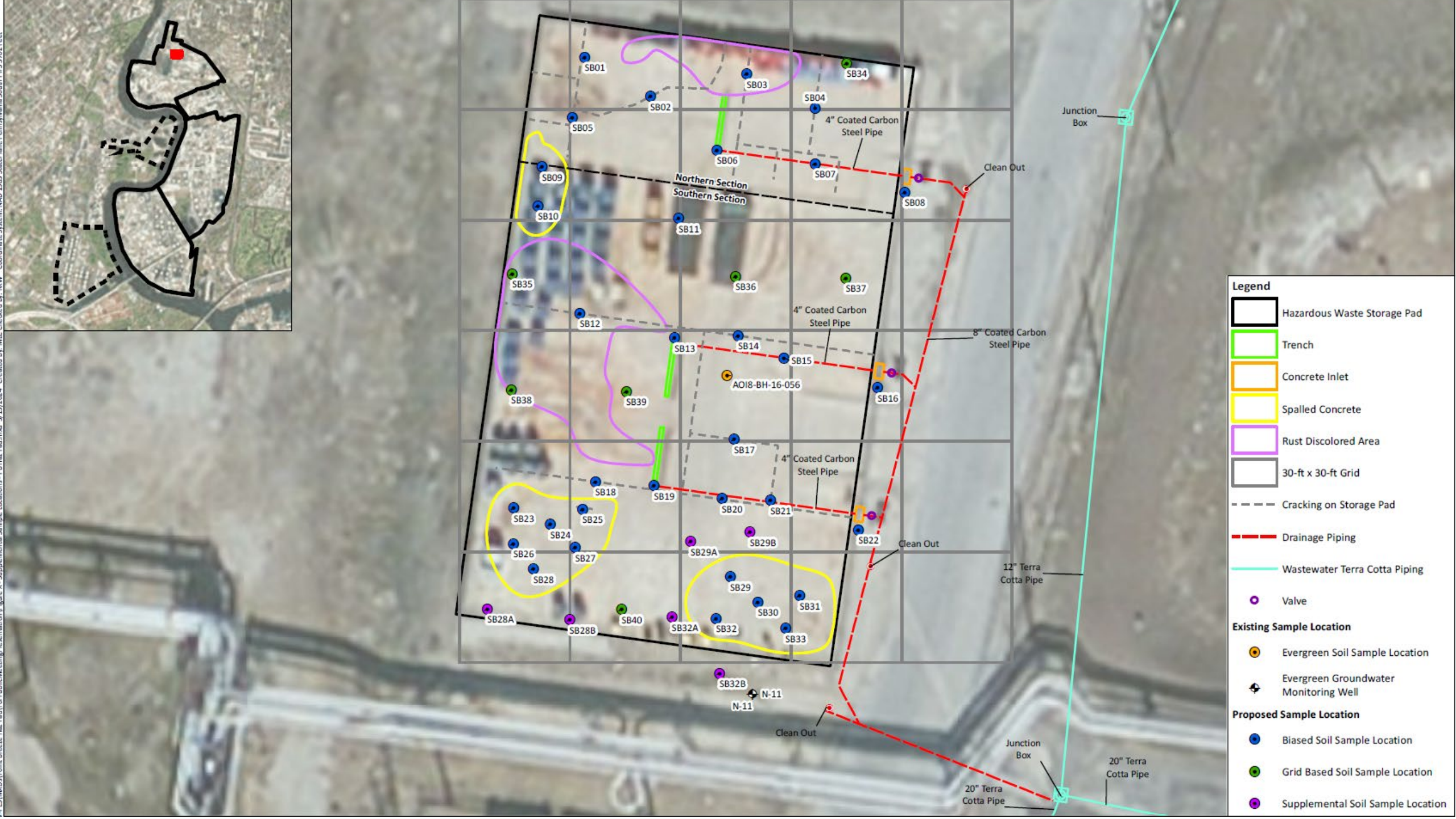
Project No.: P044.001.002

Subject: **Soil Sampling Plan – RCRA Permit PAD 049 791 098**  
**Point Breeze Hazardous Waste Container Storage Area**  
**Philadelphia Energy Solutions Refining and Marketing LLC**  
**3144 West Passyunk Avenue, Philadelphia, PA 19145**

Terraphase Engineering Inc. (Terraphase), on behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), has prepared this *Soil Sampling Plan* to assess whether potential historical releases from the Point Breeze Hazardous Waste Container Storage Area (PB Waste Storage Area) at the former Philadelphia Refinery have impacted soil beneath the storage area and ultimately, obtain closure of the storage area subject to the requirements of 40 CFR Part 264, as incorporated by reference in 25 Pa. Code Chapter 264a. PESRM provided Notification of Intent to close the PB Waste Storage Area to the Pennsylvania Department of Environmental Protection (PADEP) on July 2, 2021. NorthStar Contracting Group, Inc. (NorthStar) will perform the closure of the PB Waste Storage Area in accordance with the closure timeline submitted to PADEP in August 2021, additional details in the content shared with PADEP on September 30, 2021, and the approved Closure Plan embedded in the Permit No. PAD 049 791 098. Closure of the PB Waste Storage Area is anticipated to start during the 1<sup>st</sup> quarter of 2022. Soil sampling will be conducted following removal of the concrete pad.

The following sections summarize relevant background information, detail the proposed soil sampling scope of work, and provide a proposed project schedule.





# Closure of Hazardous Waste Storage Areas

## Point Breeze Haz Waste Storage Pad

Found at concentrations > the NonRes Soil **Direct Contact** MSC:

### **Polycyclic Aromatic Hydrocarbons (PAHs)**

- Benzo(a)anthracene – B(a)A
- Benzo(a)pyrene – B(a)P
- Benzo(b)fluoranthene – B(b)F

### **Metals**

- Lead

Found at concentrations > the NonRes **Soil-GW Protection** MSC:

### **Polycyclic Aromatic Hydrocarbons (PAHs)**

- Benzo(a)pyrene – B(a)P
- Chrysene

### **Metals**

- Lead



PB Waste Storage Unit

0 2,500 5,000 10,000 Feet

### Direct Contact MSCs


- B(a)A, B(a)P, B(b)F
- Lead

### Soil-GW Prot. MSCs

- B(a)P, Chrysene
- Lead




#### Legend

 Hazardous Waste Storage Pad

#### PESRM Soil Sample Location

 Exceeds DC MSC

 Exceeds S-GW MSC

 No Exceedances



# Closure of Hazardous Waste Storage Areas

## Girard Point Spent Caustic Tanks 1086 & 1087





# Closure of Hazardous Waste Storage Areas

## Spent Caustic Tanks 1086 & 1087

- Submitted soil sampling **plan** to PADEP on 8/19/22
- Sampling conducted January 2023
- Installed 16 **borings**
- Collected 16 soil **samples**
  - Targeted towards features designed to collect and contain **fluids** and/or **stormwater** and areas with visual evidence of **deterioration**;
  - Supplemented by **random** locations determined using a 30-ft x 30-ft **grid**
- **Analyzed** for regulated substances, additional constituents based upon types of hazardous waste stored, and **pH**



### Technical Memorandum

To: Mohamad M. Mazid, PhD, PE  
Chief Technical Services  
Department of Environmental Protection  
Southeast Regional Office  
Waste Management Program  
2 East Main Street  
Norristown, PA 19401

From: Kevin L. Long  
Nicholas J. Scala, PG, LSRP  
Terraphase Engineering Inc.

cc: Joseph Jeray, PE, PESRM

Date: August 19, 2022 Project No.: P044.001.011

Subject: **Soil Sampling Plan – RCRA Permit PAD 049 791 098**  
**Girard Point Hazardous Waste Storage Pad and Spent Caustic Tanks 1086 and 1087 Removal**  
**Philadelphia Energy Solutions Refining and Marketing LLC**  
**3144 West Passyunk Avenue, Philadelphia, PA 19145**

Terraphase Engineering Inc. (Terraphase), on behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), has prepared this *Soil Sampling Plan* to assess potential historical releases from the Girard Point Hazardous Waste Storage Pad (GP Waste Storage Pad) and tanks GP 1086 and 1087 (spent caustic) at the former Philadelphia Refinery located at 3144 West Passyunk Avenue in Philadelphia, Pennsylvania (the "Facility"). The *Soil Sampling Plan* has been designed to evaluate the potential presence of impacted soil beneath the GP Waste Storage Pad and the GP 1086 and 1087 secondary containment structure, and ultimately, obtain closure subject to the requirements of 40 CFR Part 264, as incorporated by reference in 25 Pa. Code Chapter 264a. PESRM provided Notification of Intent to close the GP Waste Storage Pad and GP 1086 and 1087 to the Pennsylvania Department of Environmental Protection (PADEP) on June 24, 2022. NorthStar Contracting Group, Inc. (NorthStar) will perform the closure of the GP Waste Storage Pad and GP 1086 and 1087 in accordance with the closure timeline submitted to PADEP on August 5, 2022, and the approved Closure Plan embedded in the Permit No. PAD 049 791 098. Soil sampling will be conducted in each area following removal of the tanks and the concrete containment pads. Closure of GP 1086 and 1087 is anticipated to start during the 3<sup>rd</sup> quarter of 2022, and closure of the GP Waste Storage Pad is anticipated to start in the 1<sup>st</sup> quarter of 2023.

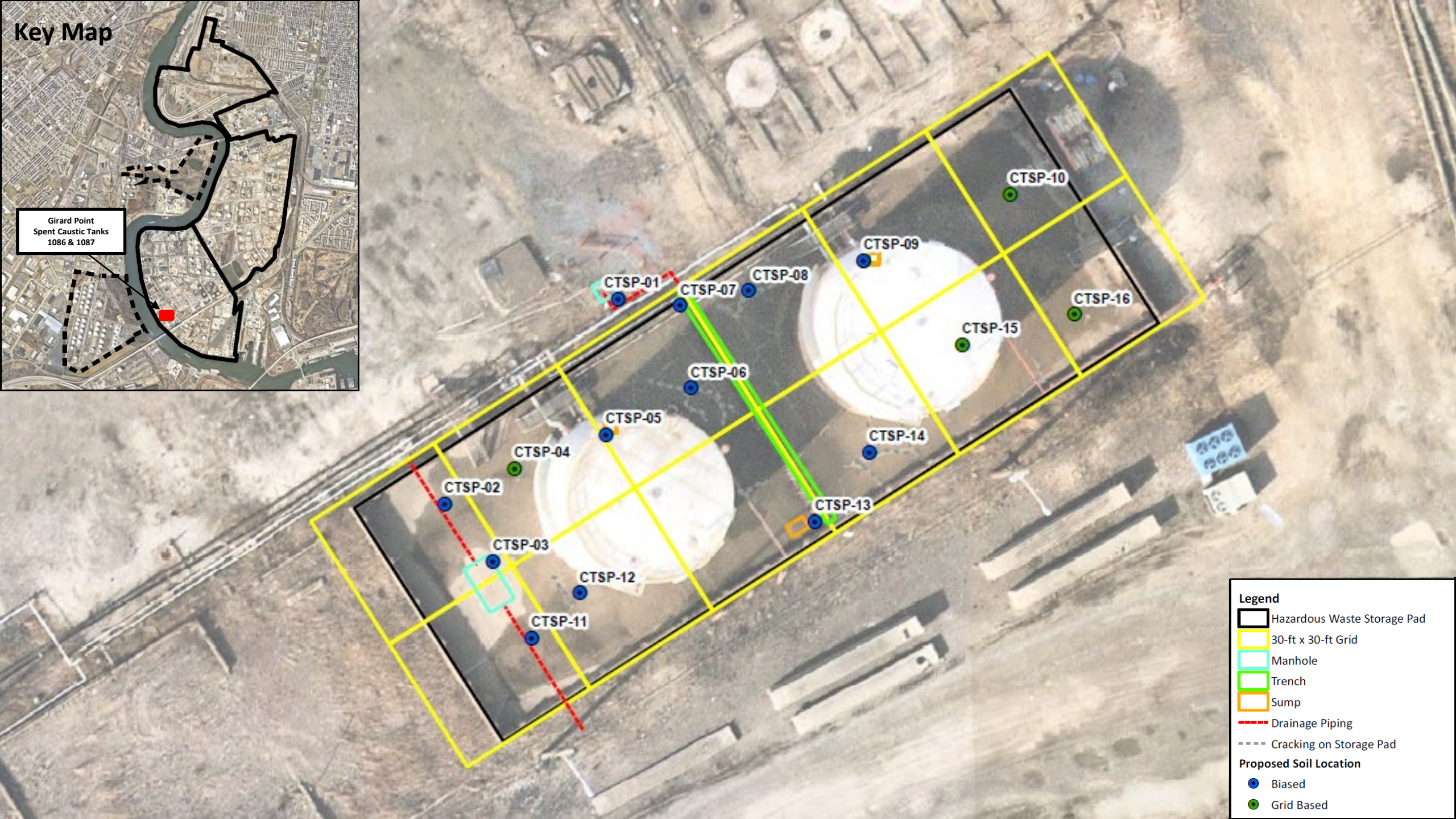
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Key Map

Girard Point  
Spent Caustic Tanks  
1086 & 1087



**Legend**

- Hazardous Waste Storage Pad
- 30-ft x 30-ft Grid
- Manhole
- Trench
- Sump
- Drainage Piping
- Cracking on Storage Pad
- Proposed Soil Location**
  - Biased
  - Grid Based



# Closure of Hazardous Waste Storage Areas

## Spent Caustic Tanks 1086 & 1087

Found at concentrations > the NonRes Soil **Direct Contact** MSC:

**None**

Found at concentrations > the NonRes **Soil-GW Protection** MSC:

### **Volatile Organic Compounds (VOCs)**

- Benzene

### **Metals**

- Lead



- Direct Contact MSCs
- None
- Soil-GW Prot. MSCs
- Benzene
  - Lead
- Corrosivity
- pH 6-8.2 SU

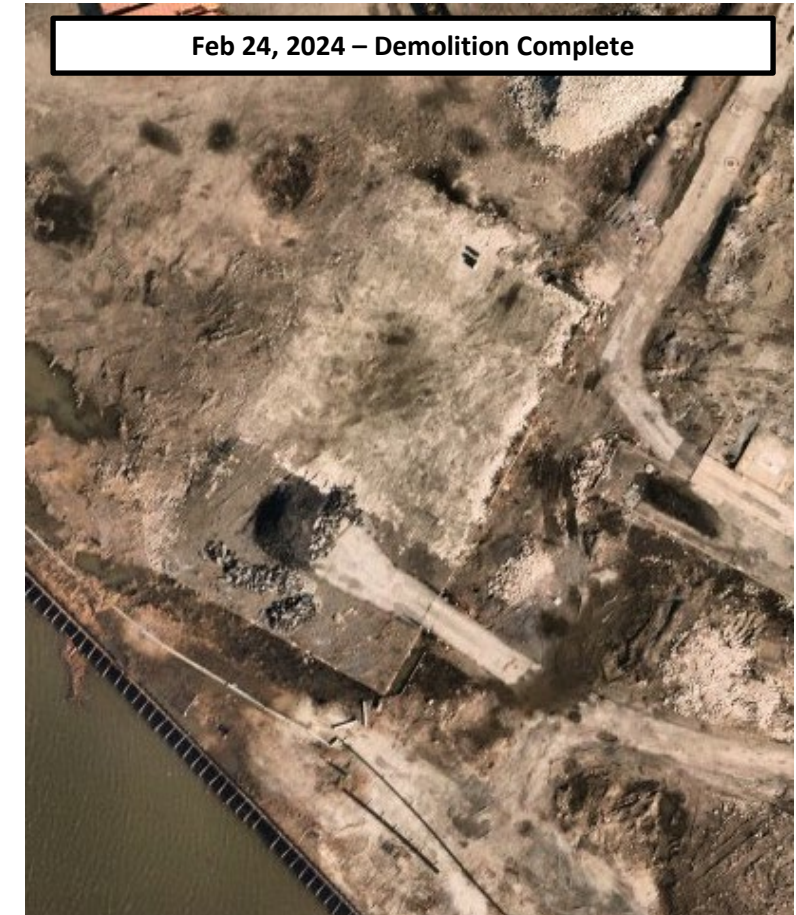
**Legend**

- Caustic Tanks Concrete Pad
- PESRM Soil Sample Location**
- Exceeds DC MSC
- Exceeds S-GW MSC
- No Exceedances



# Closure of Hazardous Waste Storage Areas

## Girard Point Hazardous Waste Pad



# Closure of Hazardous Waste Storage Areas

## Girard Point Hazardous Waste Storage Pad

- Submitted a soil sampling **plan** to PADEP on 8/19/22
- Sampling conducted September 2023
- Installed 31 **borings**
- Collected 45 **samples**
  - Targeted towards features designed to collect and contain **fluids** and/or **stormwater** & areas with visual evidence of **deterioration**
  - Supplemented by **random** locations using a 30x30-ft **grid**
  - Follow-up samples to further characterize **nature** and **extent** of concentrations
- **Analyzed** for regulated substances & additional constituents based upon types of hazardous waste stored

### Technical Memorandum

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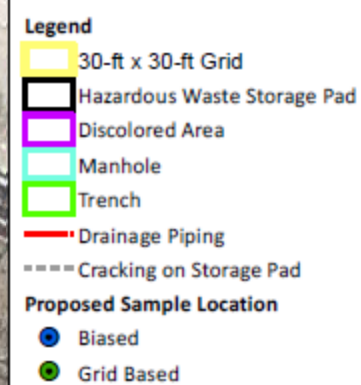
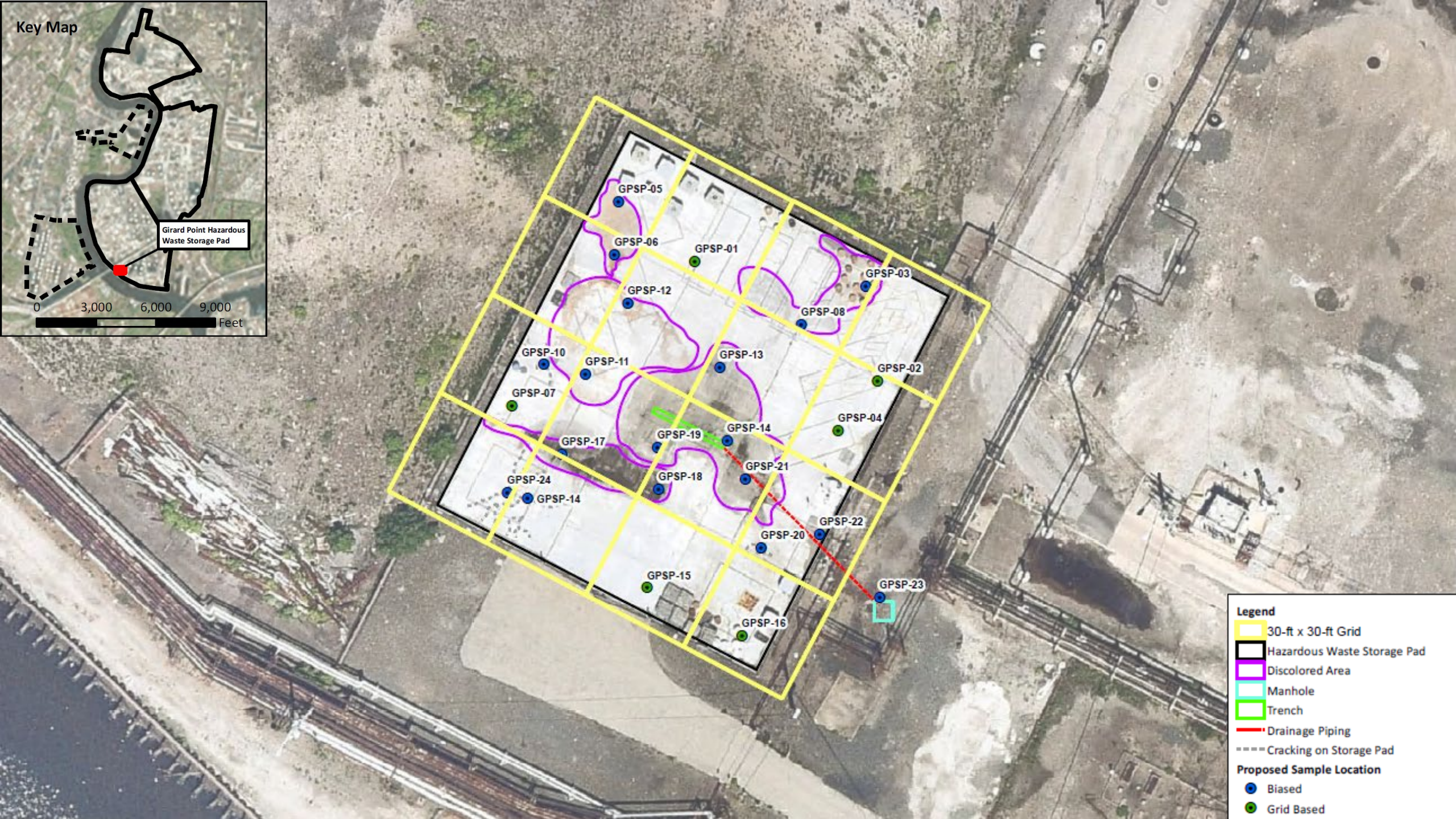
Project No.: P044.001.011

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The following sections summarize relevant background information, detail the proposed soil sampling scope of work, and provide a proposed project schedule.







# Closure of Hazardous Waste Storage Areas

## Girard Point Hazardous Waste Storage Pad

Found at concentrations > the NonRes Soil **Direct Contact** MSC:

### **Polycyclic Aromatic Hydrocarbons (PAHs)**

- Naphthalene

Found at concentrations > the NonRes **Soil-GW Protection** MSC:

### **Polycyclic Aromatic Hydrocarbons (PAHs)**

- Benzo(a)pyrene – B(a)P
- Naphthalene

### **Volatile Organic Compounds (VOCs)**

- Benzene

### **Metals**

- Arsenic
- Lead



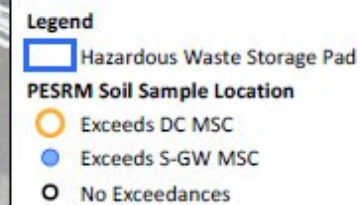


### Direct Contact MSCs

- Naphthalene

### Soil-GW Prot. MSCs

- B(a)P, Naphthalene
- Benzene
- Arsenic, Lead

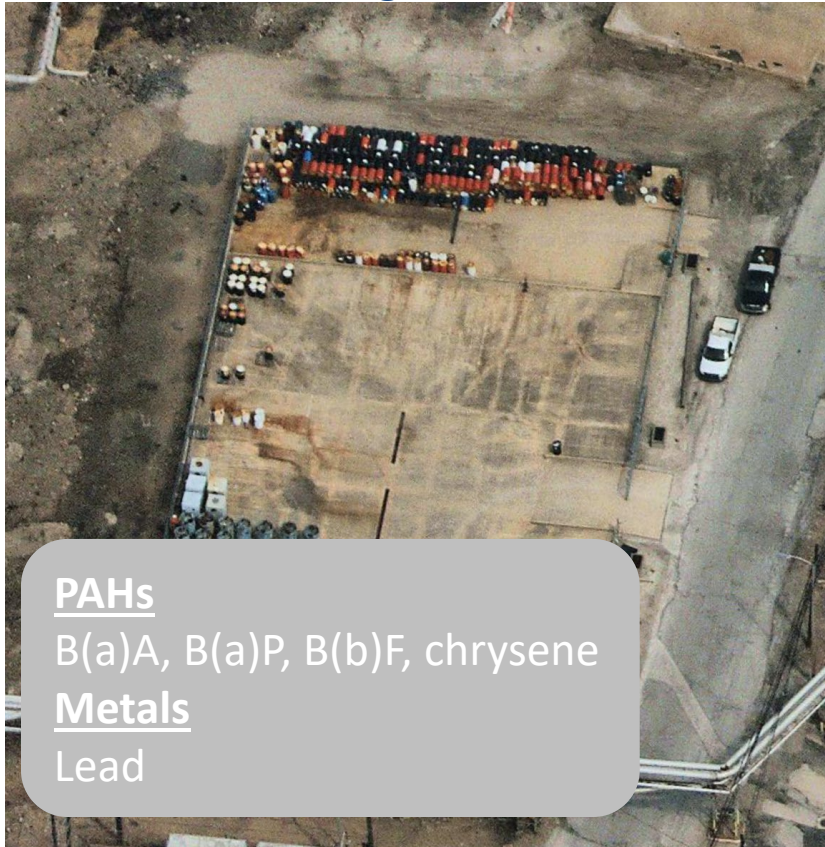




# Closure of Hazardous Waste Storage Areas

## Summary of Chemicals Detected > MSCs

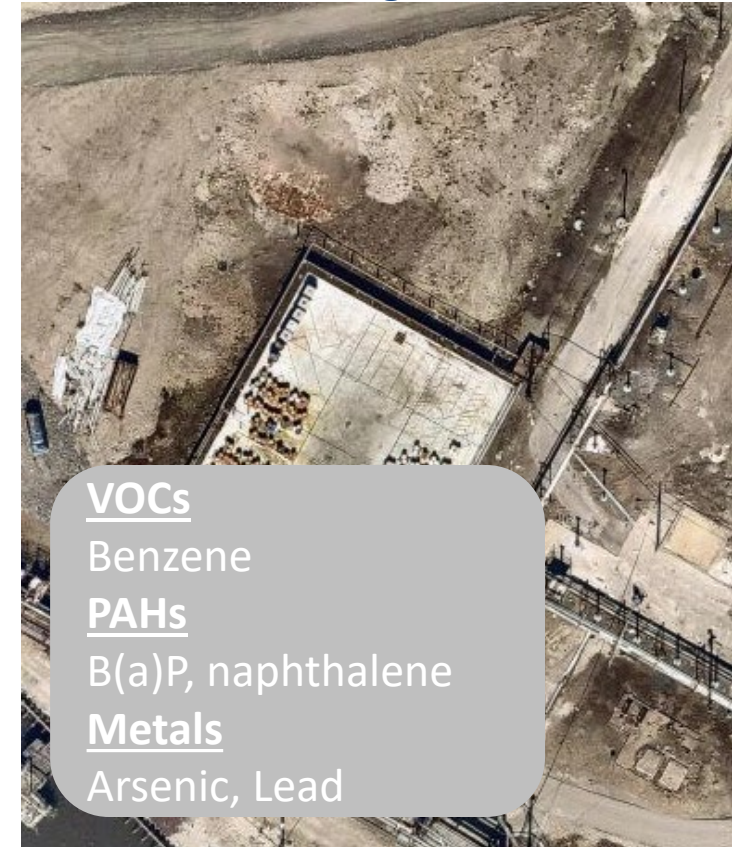
Point Breeze Storage Pad



Girard Point Spent Caustic Tanks



Girard Point Storage Pad

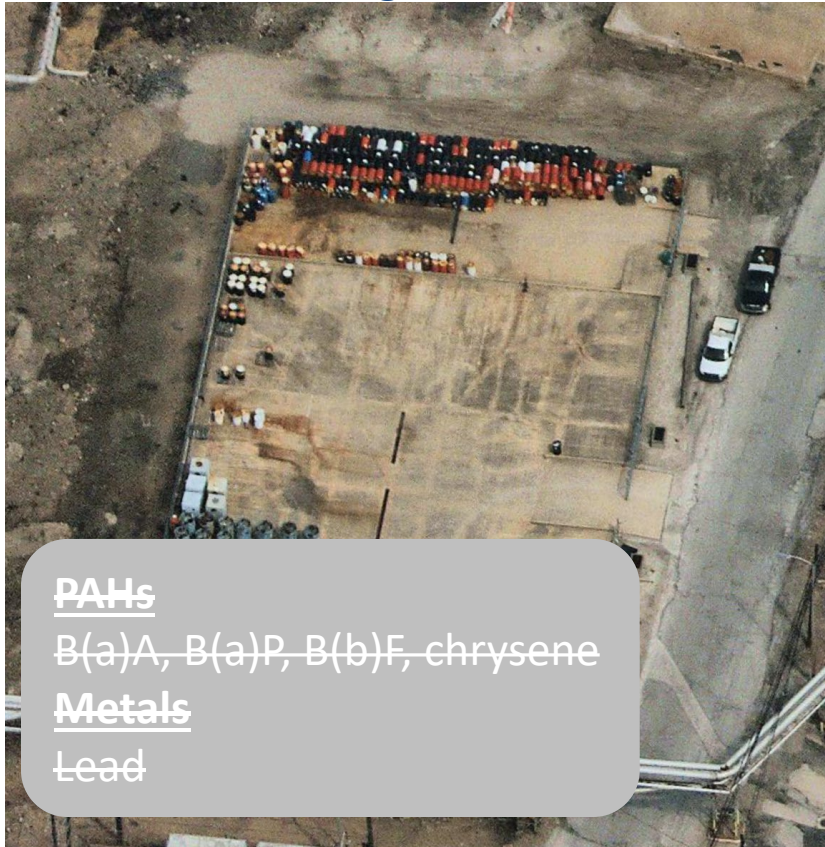




# Closure of Hazardous Waste Storage Areas

## Summary of Chemicals Detected > MSCs

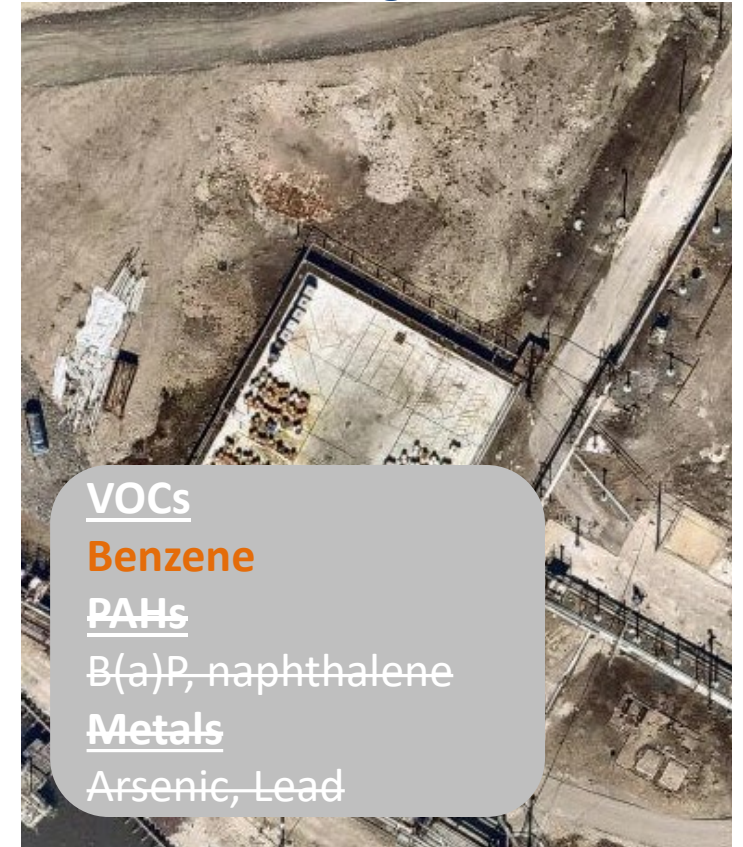
Point Breeze Storage Pad



Girard Point Spent Caustic Tanks



Girard Point Storage Pad



### Notes:

B(a)P – Chemical associated with historic fill

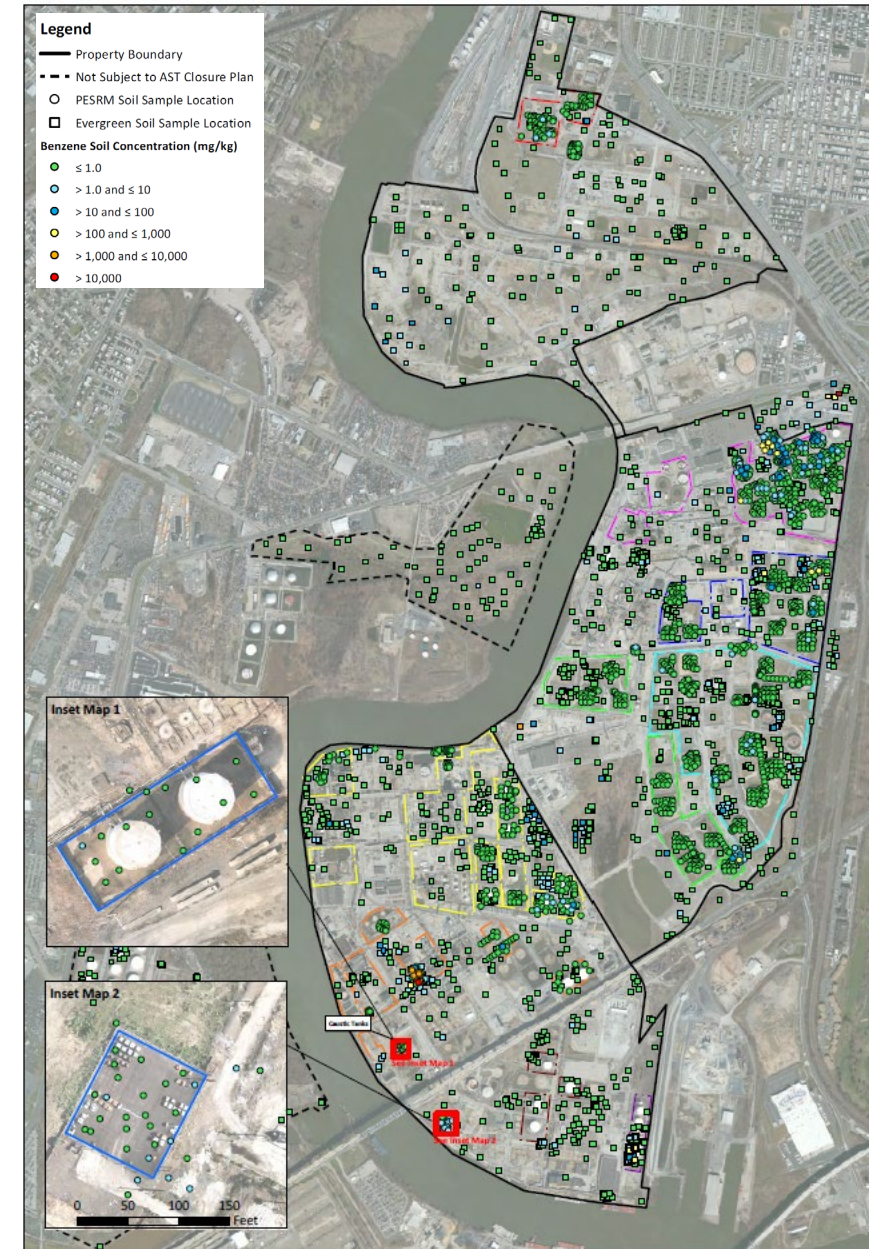
**Benzene** – Additional review to determine if present due to release from the area



# Closure of Hazardous Waste Storage Areas

## Benzene

- Benzene, associated with **pre-existing contamination**, is present in soil throughout the Facility
- Range of concentrations observed at the GP Haz Waste Pad and Spent Caustic Tank areas are **consistent with those observed throughout the Facility**
- Spatial distribution and range of concentrations is **not consistent with a release** to the environment from the waste storage areas
- Benzene is NOT associated with a release from the waste storage areas





# Closure of Hazardous Waste Storage Areas

## Lines of Evidence

Lines of Evidence	Point Breeze Storage Pad	Girard Point Spent Caustic Tanks	Girard Point Storage Pad
Known releases from this storage area to the environment?	No	No	No
Could chemicals detected in soil been stored in the area?	Yes	Yes	Yes
Spatial distribution of chemicals in soil suggest a release from this storage area?	No	No	No
Is historic fill present in the part of the site where this storage area was located?	Yes	Yes	Yes
Are the chemicals detected in soil also present in historic fill?	Yes	Yes	Yes
Is pre-existing contamination, associated with former refinery use, present in the area of the storage area?	Yes	Yes	Yes
Are the chemicals detected in soil also associated with pre-existing contamination?	Yes	Yes	Yes

**Conclusion:** Chemicals not related to a release from the storage area - Will be addressed under Act 2.

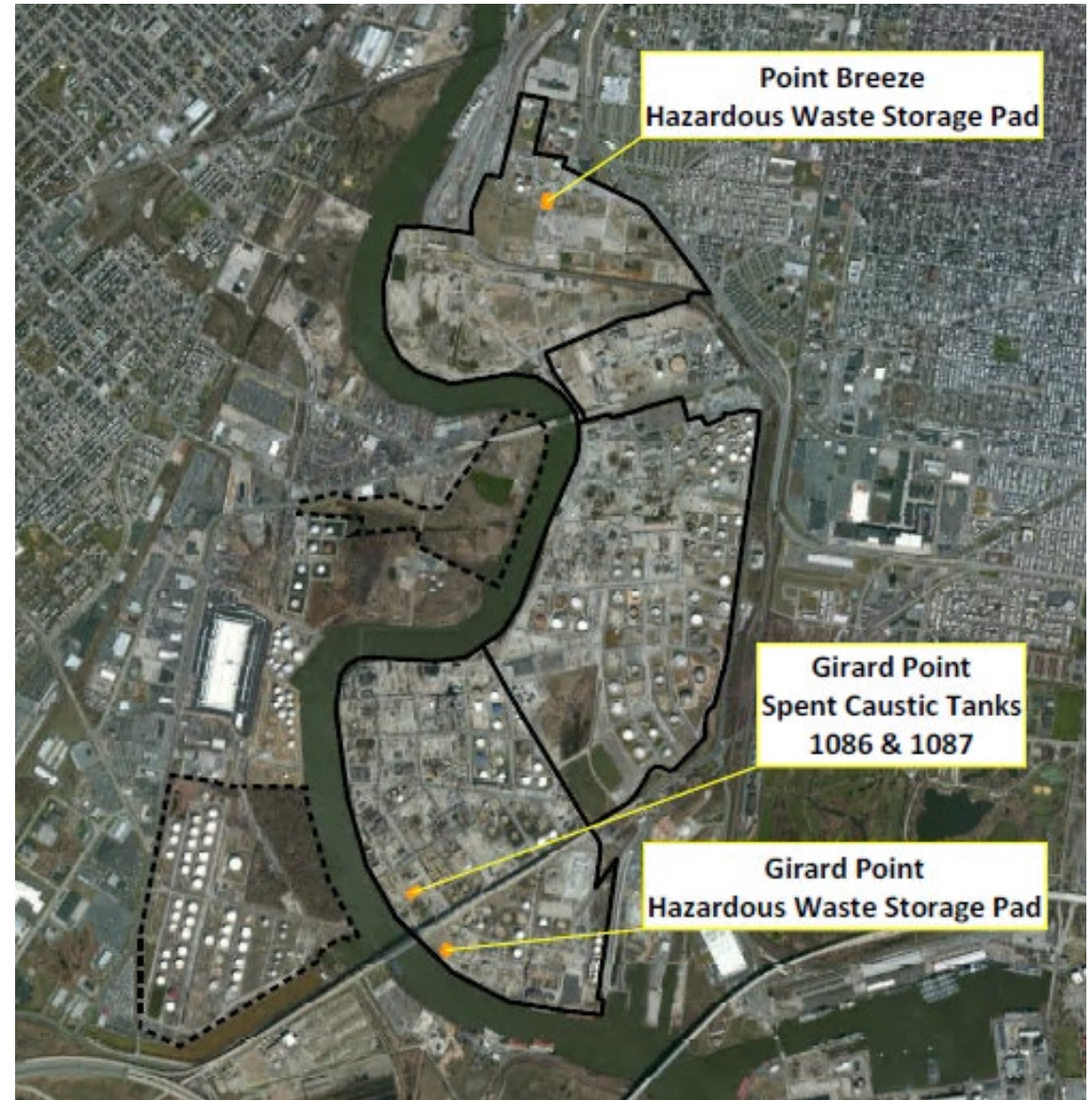
Green shading indicates chemical concentrations in soil are NOT related to a release from the storage area

Blue shading indicates chemical concentrations in soil may be related to a release from the storage area

# Closure of Hazardous Waste Storage Areas

## Conclusions

- Sampling identified some **metals**, **PAHs**, and **benzene** in soil > SHS MSCs
- The concentrations are associated with **historic fill** and **other refinery** related impacts – not due to releases from these storage areas
- This contamination will be managed under **Act 2**
- Since storage areas **did not have releases** to the environment, they have **met the requirements** for RCRA Clean Closure certification





# Closure of Hazardous Waste Storage Areas

## Next Steps

- PADEP **currently reviewing** Site Investigation Reports submitted to present the soil sampling results from each area
- PESRM to **address/respond** to feedback (if any) from PADEP and **finalize** the Site Investigation Reports
- PESRM to submit a **Request for Closure** Certification to PADEP for approval





# QUESTIONS COMMENTS





**THANK YOU**



# Closure of Hazardous Waste Storage Areas Public Information Session

Former Philadelphia Energy Solutions Refinery, Facility ID Nos. 51-33624 and 51-33620  
Philadelphia Energy Solutions Refining and Marketing LLC (PESRM)  
3144 West Passyunk Avenue, Philadelphia, Pennsylvania

Presented by:  
Kevin Long (Principal Consultant) and Abigail Spiers (Consultant)  
Terraphase Engineering Inc.

June 3, 2024

