

August 18, 2022

Ms. Tiffani L. Doerr, PG  
Evergreen Resource Management Operations  
2 Righter Parkway, Suite 120  
Wilmington, DE 19083

Re: Letter of Technical Deficiency  
PESRM - Evergreen  
eFACTS PF No. 780190  
3144 Passyunk Avenue  
City of Philadelphia  
Philadelphia County

Dear Ms. Doerr:

The Department of Environmental Protection (DEP) has received and reviewed the May 20, 2022 document titled "Sitewide Remedial Investigation Report Addendum (report), received on May 20, 2022 for the property referenced above. The report was prepared by Stantec Consulting Services, Inc. (Stantec) submitted to DEP in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2), and it constitutes a Remedial Investigation Report as defined in Chapter 3.

The procedures and regulations set forth in Act 2 must be followed in order for your site to qualify for the liability protection provided by the Act. Upon initial review, DEP finds the submission is technically deficient and the following items are needed to complete your submission:

1. The lateral and vertical extent of contamination above the selected standard (SSS) was not adequately evaluated in accordance with 25 Pa. Code Sections 250.402(b) and 250.408 (a), (b), (d), and (e). Cumene soil and groundwater results were incorrectly compared to Statewide health standard medium specific concentrations (SHS MSCs) and should have been compared to regional screening levels (RSLs), or a calculated site-specific standard for cumene.
2. Insufficient data was presented in the report to support the conclusions that groundwater was characterized in accordance with 25 Pa. Code Section 250.408(a), (b), and (e). A groundwater flow map was included for one sampling event that included only the new wells from the former Eastern Tank Farm. Groundwater flow maps for multiple sampling events, and in the context of the larger AOI 5 area are needed to support the conclusions in the report.

In addition to the above deficiencies, additional explanation is needed for the following items:

- A. AOI 5 Eastern Tank Farm Area Cumene Investigation
  - Since the locations with the highest field response were not sampled for cumene, the forensic LNAPL results potentially do not reflect overall site conditions in AOI 5 Eastern Tank Farm Area. Additional justification is needed to explain why soil intervals with the highest field response were not also sampled for cumene analysis.
  - Additional information is needed to justify the use of a vacuum truck for well development as this is an unconventional well development method.

- Historical groundwater monitoring results for AOI 5 wells should be included to evaluate the new well data in the overall delineation framework.

B. LNAPL Forensic Sampling

- There are several areas of the site in which it is unclear if Evergreen and Hilco concur on responsibility for a release. Please be advised that DEP may not be in a position to approve certain future reports without resolution of this issue.
  - AOI 1/Belmont Terminal: S-77 and S-203 including a discussion of the potential source area(s).
  - AOI 4: S-104 and S-368
  - AOI 9: S-122SRTF, MW-1SRTF, RW-B
    - DEP understands the lines of evidence presented to date indicate a new release in AOI 9 and is awaiting submittal of a NIR from Hilco.

C. Surface Soil Sampling for lead

- DEP's review of this report is based on the current approved SSS for lead. The following comments are solely for consideration for future reporting if and when the SSS changes and/or a revised Human Health Risk Assessment is submitted.
- It should be noted that a review of the historical lead data with respect to date and release history should be conducted. A figure depicting the sample identifiers and historical data table was not included for each AOI. If the historical samples that depicted concentrations greater than 1,000 ug/kg were more recent samples than surrounding delineation samples, additional delineation samples should be considered.
- Additional delineation may be needed in AOI 2 and AOI 9 to delineate to 1,000 ug/kg.
  - Additional explanation is needed to understand if Evergreen visually screened soil from soil borings along Essington Avenue for leaded tank bottoms as an indication of potential facility impacts.
  - An explanation is needed of the use of fate and transport, engineering, or institutional controls, and/or pathway evaluation to further address the lead impacts in the Essington Avenue right-of-way.

Please address the above summarized technical deficiencies within 60 days. If the deficiencies noted above are corrected and a report resubmitted to DEP within 60 days, it will not be necessary to resubmit report review fees, resend the municipal notice, or republish the public notice. Please include a copy of this correspondence with any resubmission to confirm to DEP staff that an administrative completeness check is not necessary. If the corrected report is resubmitted later than 60 days from the date of this letter, the resubmitted report will need to include the appropriate fees and proofs of municipal and public notices.

We look forward to assisting you in the remediation of this property and encourage you to contact us throughout this process. If you have any questions or need further information regarding this matter, please contact Lisa Strobridge by email at [lstrobridge@pa.gov](mailto:lstrobridge@pa.gov) or by telephone at 484.250.5796.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board  
Rachel Carson State Office Building, Second Floor  
400 Market Street  
P.O. Box 8457  
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800.654.5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717.787.3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717.787.3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

Sincerely,

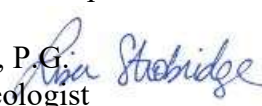
*Ragesh R. Patel*

Ragesh R. Patel  
Regional Manager  
Environmental Cleanup and Brownfields

cc: Mr. Cullinan, PE (Evergreen)  
Ms. Jennifer Menges (Stantec)  
Mr. Andrew Klingbeil (Stantec)  
Mr. Joseph Jeray (Hilco)  
City of Philadelphia Department of Public Health  
Mr. Bilash, U.S. EPA  
Mr. Brown  
Mr. Staron  
Ms. Strobbridge  
Mr. Glass, Esq.  
Mr. Juan Serrat  
Ms. Bass

**MEMO**

**TO** Ragesh R. Patel  
Regional Manager  
Environmental Cleanup and Brownfields

**FROM** Lisa Strobbridge, P.G.   
Professional Geologist

**THROUGH** Richard M. Staron, P.G.  
Professional Geologist Manager

**DATE** August 18, 2022

**RE** ECB – Land Recycling Program  
Act 2 Technical Memo Summary  
Sitewide Remedial Investigation Report Addendum  
Philadelphia Refinery  
eFACTS PF No. 780190  
Sunoco Inc Phila Ref Sitewide  
PESRM - Evergreen  
3144 West Passyunk Avenue  
City of Philadelphia  
Philadelphia County

**Property Owner:**

Hilco Redevelopment Partners  
99 Summer Street, Suite 1110, Boston, MA 02110

**Remediator:**

Evergreen Resources Management Operations  
2 Righter Parkway, Suite 120  
Wilmington, DE 19083

**Site Address:**

3144 West Passyunk Avenue  
Philadelphia, PA 19145

**Act 2 Standard(s) Sought:** non-residential site-specific standard for soil and groundwater

**Property Size:** ~1300 acres

**Project Site History:** Petroleum refining began at the Philadelphia Refinery circa 1870. The facility consisted of two refineries, Point Breeze operated by Atlantic Petroleum Corporation

(formerly ARCO) and Girard Point by Chevron (formerly Gulf). Sunoco purchased these two refineries in 1988 and 1994 and consolidated them into a single facility. In 2012, Sunoco sold the refinery to the Carlyle Group and entered a joint venture to operate it as Philadelphia Energy Solutions (PES). Sunoco, Inc. is now a subsidiary of Energy Transfer Partners, L.P., and Evergreen is a Sunoco affiliate that is responsible for legacy environmental remediation. In 2020, PES was acquired by Hilco Redevelopment Partners (HRP).

The Philadelphia Refinery processed up to 330,000 barrels a day of crude oil. It produced gasoline, diesel, jet fuel, kerosene, home heating oil, and other petroleum liquids. The facility consisted of multiple process units, above-ground storage tanks, pipelines, as well as truck, railcar, and barge transfer equipment. The facility has been divided into eleven areas of interest (AOI 1–11) for purposes of characterizing contamination. The first ten are geographical areas of the facility, and AOI 11 represents the deep groundwater aquifer. From 2012 through 2021 Remedial Investigation Reports have been submitted and approved for AOI-1 through AOI-10 for the site.

DEP and EPA discussed the review of this report and this memo reflects comments from both agencies consistent with the goals of the One Cleanup Program.

#### **Sitewide Remedial Investigation Report Overview:**

- The Sitewide Remedial Investigation Report presents supplemental site investigation data that has been collected at the site since the time the applicable AOIs have been approved.
- The types of additional data collected and applicable AOIs include:
  - Cumene Area Investigation – AOI 5
  - Light non-aqueous phase liquids (LNAPL) forensic sampling – AOI 1/Belmont Terminal, AOI 2, AOI 4, AOI 6, AOI 9
  - Lead surface soil sampling – AOI 8, AOI 9, and AOI 10
  - Natural Source Zone Depletion (NSZD) sampling – AOI 1, AOI 2, AOI 3, AOI 4, AOI 8
- The additional investigations were conducted to address comments previously raised or to further investigate in select areas based on site data collected since the Remedial Investigation (RI) reports were approved.

#### **Cumene Investigation Area/Eastern Tank Farm – AOI 5**

- On May 4, 2017, DEP noted the following comment in the Technical Memo that accompanied the May 2, 2017 RI approval letter “Seven exceedances of cumene in soil at the eastern tank farm were listed in the report. DEP’s direct contact MSCs for cumene are limited by the residual saturation value of 10,000 mg/kg [§250.305(b)]. Evergreen obtained analytical results exceeding this threshold, up to 33,000 mg/kg. Further evaluation or remedial action is required for these exceedances through the storage tanks corrective action process (Ch. 245). The SCR/RACR for these tanks is presently under review.”
- On May 3, 2017, PADEP issued technical comments to the SCR/RACR for tank incidents in AOI 5 that stated “The cumene direct contact MSCs are 10,000 mg/kg. This is a value limited by residual saturation in soil (§250.305(b)). When an analytical result exceeds 10,000

mg/kg, this indicates that separate phase liquid may be present. LNAPL was not observed in the soil borings, but residual LNAPL that was not visible may have been in the soil pore spaces. Exposure assessments for these areas should account for the possible presence of LNAPL.” The SCR was subsequently approved on June 22, 2017 and in the approval letter it was stated that “DEP recognized that the RAP for these five tanks will be incorporated into an Act 2 cleanup plan to be submitted at a future date”.

- The following activities were conducted to address the above comments:
  - Review of groundwater gauging data for wells located within the former Eastern Tank Farm portion of AOI 5 to identify saturated and unsaturated soil depths.
    - The saturated depth to water in the former Eastern Tank Farm was historically approximately 4-7 ft below grade.
  - In June 2021, 5 soil borings were installed at locations adjacent to locations where the highest historical cumene results were detected in soil. Soil samples from the five supplemental locations were analyzed for cumene in soil at the depths where the highest historical results were observed.
    - Two of the locations were advanced via hand augers to 12 ft below grade as they were inaccessible by a direct push rig.
    - The remaining three locations were advanced until either field screening indicated no evidence of impact or to 25 ft terminal depth.
    - It is understood that 2021 soil samples were collected from sample intervals consistent with historical samples; however, field screening indicates that these intervals were not consistently from the highest field screening interval. An explanation is needed as to why the intervals with the highest field response were not also sampled.
    - Site specific standards (SSS) have been selected for soil and groundwater at the site. Cumene results in this Addendum were incorrectly compared to Statewide health standard medium specific concentrations (SHS MSCs) and should have been compared to regional screening levels (RSLs), or a calculated site specific standard for cumene. The lateral and vertical extent of contamination above the selected standard (SSS) is required to be characterized.
  - The three locations with the highest 2021 cumene results were also analyzed for synthetic precipitation leaching procedure (SPLP).
    - The SPLP results guided the need for the installation of monitoring wells in this area. Even though the highest soil screening interval may not have been utilized to select SPLP locations, the result of needing to install monitoring wells in the former Eastern Tank Farm was realized.
  - Soil with the highest two 2021 detections of cumene were also assessed for potential LNAPL saturation and mobility. The two selected soil cores were screened using ultraviolet (UV) light core photography and then select intervals from each core were analyzed for:
    - pore fluid saturation (Dean Stark Method, API R 40) to determine the percentage of LNAPL saturation

- air-water capillarity analysis (ASTM D425M) to evaluate the potential LNAPL saturation and mobility
- grain size analysis (ASTM D422/ASTM D446M) to also evaluate the potential for LNAPL saturation and mobility
- Since the locations with the highest field response were not sampled, the LNAPL investigation results potentially do not reflect overall site conditions.
- Three monitoring wells were installed in the three (out of 5 locations) that had the highest potential for the occurrence of LNAPL. A fourth monitoring well was installed downgradient of the three new wells, along the downgradient property boundary of the former Eastern Tank Farm.
  - It is unclear why A-192 was not installed at SH01 where historically higher cumene soil concentrations were detected.
  - Following well installation, the wells were developed using a vacuum truck. Additional information is needed to justify the use of unconventional well development methods, including well gauging data, LNAPL observations during the vacuum extraction event and following settlement of the recovered liquids, and 2022 gauging results from these wells regarding presence/absence of LNAPL.
  - A groundwater flow map is included for one sampling event that includes only the new wells from the former Eastern Tank Farm, and the groundwater flow appears divergent. Groundwater flow maps for multiple sampling events, and in the context of the larger AOI 5 area are needed.
  - Groundwater results in the former Eastern Tank Farm during the November 3, 2021 sampling event ranged from not detected concentrations to 18,000 ug/L.
    - Groundwater results were incorrectly compared to the SHS MSCs and should be compared to RSLs or calculated SSS.
    - Historical groundwater monitoring results for AOI 5 wells were not included to evaluate the new well data in the overall delineation framework.

**Light non-aqueous phase liquids (LNAPL) forensic sampling – AOI 1/Belmont Terminal, AOI 2, AOI 4, AOI 6, AOI 9**

- LNAPL sampling was conducted in 11 wells in 2019 and 2020 where post 2012 releases were suspected based on historical gauging data. The locations include:
  - AOI 1/Belmont Terminal: S-77, S-203, MW-29
  - AOI 2: S-349
  - AOI 4: S-104, S-96, S-368
  - AOI 6: B-150
  - AOI 9: S-122SRTE, MW-1SRTE, RW-B
- LNAPL samples were collected and analyzed using various environmental forensics tests, and the results were interpreted by a petroleum forensics expert (ChemQuants). A summary of findings is included below.
  - AOI 1/Belmont Terminal: S-77, S-203, MW-29

- LNAPL samples collected from S-77 in 2005 and 2019 show a change in LNAPL types. The additional LNAPL sample collected in 2020 estimates the LNAPL to be from gasoline released between 2010 and 2014.
  - It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area.
- The 2019 and 2020 LNAPL sample collected from S-203 was estimated to have been released in 2014 +/- 2 years
  - It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area.
- A discussion of the potential source(s) of LNAPL observed in S-77 and S-203 is requested for these areas.
- The LNAPL sample collected from MW-29 coincides with historical documents indicating a release from leaded gasoline before 1990.
- AOI 2: S-349
  - LNAPL samples collected from S-349 showed evidence of a release of historical gasoline with an unusual pattern of C5-C8 naphthalene and leaded gasoline enrichment.
  - Analysis of LNAPL in this well does not indicate a new release.
- AOI 4: S-104, S-96, S-368
  - LNAPL samples collected from S-104 exhibit different fuel signatures in samples collected in 2004 and 2019. In addition, the May 2020 LNAPL sample was estimated to be from a release that was 4-8 years from 2020.
    - It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area.
  - 2016 LNAPL samples from S-368 (located adjacent to S-104) were identified as a middle distillate and as a weathered light to middle distillate fuel oil and kerosene in 2020 suggesting evidence of a new release.
    - It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area.
  - LNAPL in S-96 was determined to have been released in 2003 +/- 2 years and is not indicative of a new release.
- AOI 6: B-150 sample could not be evaluated for the release date due to the “intrinsic relative enrichments of benzene and toluene in the suspected reformat intermediate source type”. This interpretation suggests a potential of a mixed plume but is not indicative of a new release.
- AOI 9: S-122SRTF, MW-1SRTF, RW-B
  - LNAPL samples from S-122SRTF are indicative of a release after 2013 and before 2019, and the 2021 sample of LNAPL collected “was likely related to a November 8, 2016 petroleum occurrence event in the well”.
    - There were multiple lines of evidence presented in the September 2021 AOI 9 RI Addendum indicting LNAPL in this well was associated with a post 2012 release.
    - ChemQuants analysis of S-122SRTF support the previous findings.
    - Post 2012 releases are the responsibility of Hilco to remediate.



- It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area, as a NIR for this release area has not been submitted by Hilco to date.
  - Dissolved concentrations from S-122SRTF were not included in the June 2022 Fate and Transport Remedial Investigation Report.
  - LNAPL samples from MW-1SRTF and RW-B have a different gasoline signature than what was expressed in S-122SRTF.
    - ChemQuants concluded that LNAPL from MW-1SRTF and RW-B “likely is re-emergence of a less evaporated form of gasoline occurring in the well since 2004”.
    - Previous interpretations indicated similar results and suggest that the influx of new source material in this area impacted the mobility of historical LNAPL that was present in the area.
    - It is not clear if Evergreen and Hilco concur on responsibility for LNAPL in this area.
- Evergreen included dissolved impacts from these LNAPL bearing wells in the 2022 Fate and Transport remedial Investigation Report, except for S-122SRTF. Evergreen states “Data presented in this Sitewide RIR Addendum, the AOI 4 RIR Addendum, and AOI 9 Second RIR Addendum support that there may have been recent (post 2012) releases of petroleum at the facility. However, regardless of timing of releases, Evergreen does not intend to exclude all or portions of contamination in the areas discussed that may be attributable to PESRM in the upcoming Sitewide Fate and Transport RIR simulations except for areas where PESRM has acknowledged environmental liability as listed in Section 3.5.1 or areas under review for responsibility.”
  - Hilco (PESRM) has acknowledged environmental liability for 1) the UDEX release Area in AOI 3; 2) the 136 Naphtha Release Area in AOI 7; and 3) No. 3 Separator Release Area in AOI 7, and these three areas will not be addressed in the future fate and transport model.
  - DEP is awaiting Hilco’s (PESRM’s) acknowledgement of environmental liability for the recent release associated with S-122SRTF and surrounding area in AOI-9.
    - Dissolved concentrations associated with S-122SRTF are not incorporated in the Fate and Transport Remedial Investigation report.
  - DEP understands that additional areas are under investigation and negotiation for environmental liability and are being managed by Evergreen until the investigations and negotiations are complete.

#### **Lead surface soil sampling – AOI 8, AOI 9, and AOI 10**

- The current SSS calculated for lead is 2,240 mg/kg as presented in the 2015 Human Health Risk Assessment that was approved by PADEP. This risk assessment used a target blood lead level of 10 micrograms per deciliter (ug/dL).
- PADEP is currently considering decreasing the target blood lead level to 5 ug/dL, which would result in a “new” calculated SSS to be closer to a value of 1,000 ug/kg.
- Since the SSS has not changed at this time, nor has a revised Human Health Risk Assessment been submitted, DEP’s review of this report is based on the current approved

SSS for lead. The following comments are solely for consideration for future reporting if and when the SSS changes and/or a revised Human Health Risk Assessment is submitted.

- In 2021 and 2022, 34 surface soil samples were collected to further delineate surface soil impacts to 1,000 mg/kg in AOI 8, AOI 9, and AOI 10.
  - A review of Figure 2-1 suggests that the surface lead could be laterally delineated to 1,000 ug/kg in AOI 8 and AOI 10.
    - It should be noted that a review of the historical lead data with respect to date and release history should be conducted. A figure depicting the sample identifiers and historical data table was not included for each AOI. If the historical samples that depicted concentrations > 1,000 ug/kg were more recent samples than surrounding delineation samples, additional delineation samples should be considered.
  - A review of Figure 2-1 also suggests that additional delineation may be needed around S-354 to the west, north, and east in AOI 2, limited surface soil was conducted for lead at Belmont Terminal or was not reported on this figure, west of AOI7BH12-47, and south of AOI5-BH-13-39, to delineate to 1,000 ug/kg.
  - A review of Figure 2-2 lead sampling results for AOI-9 suggests additional delineation is needed north and east of AOI 9 BH-22-07; west of AOI 9 BH-15-115; south of S-118SRTF; west, south, and east of AOI 9-BH-15-67 (Blender Building SR19); north of AOI 9-BH-21-10 and AOI 9-BH-21-11, and east of AOI 9-BH-21-06.
    - DEP understands the potential for offsite fill to contribute to offsite lead impacts. Additional information is needed from Evergreen to support that additional future delineation will not be needed beyond AOI 9-BH-21-16 or AOI 9-BH-21-17.
      - Additional explanation is needed to understand if Evergreen visually screened soil from soil borings along Essington Avenue for leaded tank bottoms as an indication of potential facility impacts.
      - An explanation is needed of the use of fate and transport, engineering, or institutional controls, and/or pathway evaluation to further address the lead impacts in the Essington Avenue right-of-way.

#### **Natural Source Zone Depletion (NSZD) Sampling – AOI 1, AOI 2, AOI 3, AOI 4, AOI 8**

- NSZD is the natural loss of LNAPL due to natural processes, including biodegradation. The LNAPL is transformed into carbon dioxide (CO<sub>2</sub>) and NSZD is monitored by measuring field CO<sub>2</sub> levels.
- On April 26, 2021 and October 6, 2021, 10 CO<sub>2</sub> samplers were installed across the site to measure CO<sub>2</sub> fluxes.
  - Five locations were sampled during both sampling events, and the other 5 locations were adjusted after the first sampling event.

- The measured rates of NSZD ranged from below the detection limit to 7,255 gallons per acre per year (gal/ac yr) during the April 2021 event and from 47 to 26,162 gal/ac yr during the October 2021 event.
  - These results indicate that NSZD is occurring in areas of the site.
  - NSZD may be taken into consideration in the development of the future cleanup plan for the site.
- On July 19, 2022, DEP received Evergreen's Response to public comments for the present Sitewide remedial Investigation Report Addendum.
  - Evergreen reported receipt of public comments from Brickhouse Environmental and two sets of comments from Clean Air Council.
  - DEP received, reviewed, and took into consideration the received public comments as part of the review.
  - DEP reviewed the responses to public comments and was satisfied with the responses.

**DEP Final Action:** The Sitewide Remedial Investigation Report Addendum is recommended for technical deficiency due to:

1. The lateral and vertical extent of contamination above the selected standard (SSS) was not adequately evaluated in accordance with 25 Pa. Code Sections 250.402(b) and 250.408 (a), (b), (d), and (e). Cumene soil and groundwater results were incorrectly compared to Statewide health standard medium specific concentrations (SHS MSCs) and should have been compared to regional screening levels (RSLs), or a calculated site specific standard for cumene.
2. Insufficient data was presented in the report to support the conclusions that groundwater was characterized in accordance with 25 Pa. Code Section 250.408(a), (b), and (e). A groundwater flow map was included for one sampling event that included only the new wells from the former Eastern Tank Farm. Groundwater flow maps for multiple sampling events, and in the context of the larger AOI 5 area are needed to support the conclusions in the report.

In addition to the above deficiencies, additional explanation is needed for the following items:

- AOI 5 Eastern Tank Farm Area Cumene Investigation
  - Since the locations with the highest field response were not sampled for cumene, the forensic LNAPL results potentially do not reflect overall site conditions in AOI 5 Eastern Tank Farm Area. Additional justification is needed to explain why soil intervals with the highest field response were not also sampled for cumene analysis.
  - Additional information is needed to justify the use of a vacuum truck for well development as this is an unconventional well development method.
  - Historical groundwater monitoring results for AOI 5 wells should be included to evaluate the new well data in the overall delineation framework.
- LNAPL Forensic Sampling

- There are several areas of the site in which it is unclear if Evergreen and Hilco concur on responsibility for a release. Please be advised that DEP may not be in a position to approve certain future reports without resolution of this issue.
  - AOI 1/Belmont Terminal: S-77 and S-203 including a discussion of the potential source area(s).
  - AOI 4: S-104 and S-368
  - AOI 9: S-122SRTF, MW-1SRTF, RW-B
    - DEP understands the lines of evidence presented to date indicate a new release in AOI 9 and is awaiting submittal of a NIR from Hilco.
- Surface Soil Sampling for lead
  - DEP's review of this report is based on the current approved SSS for lead. The following comments are solely for consideration for future reporting if and when the SSS changes and/or a revised Human Health Risk Assessment is submitted.
    - It should be noted that a review of the historical lead data with respect to date and release history should be conducted. A figure depicting the sample identifiers and historical data table was not included for each AOI. If the historical samples that depicted concentrations > 1,000 ug/kg were more recent samples than surrounding delineation samples, additional delineation samples should be considered.
    - Additional delineation may be needed in AOI 2 and AOI 9 to delineate to 1,000 ug/kg.
      - Additional explanation is needed to understand if Evergreen visually screened soil from soil borings along Essington Avenue for leaded tank bottoms as an indication of potential facility impacts.
      - An explanation is needed of the use of fate and transport, engineering, or institutional controls, and/or pathway evaluation to further address the lead impacts in the Essington Avenue right-of-way.

The technical deficiencies and comments were reviewed with Evergreen and Stantec on August 15, 2022 and it was communicated during the call that this technical memo would be provided following the issuance of the decision letter.

**DEP Contact:** Lisa Strobridge, P.G.

**Phone:** 484-250-5796

**Site Contact:** Tiffani Doerr, P.G., Evergreen

**Phone:** 302-477-1305

**Site Consultant:** Jennifer Menges, Stantec

**Phone:** 610-840-2540

#### **One Cleanup Program**

**EPA Contact:** Kevin Bilash, USEPA Region III

**Phone:** 215-814-2796