HUMAN HEALTH RISK ASSESSMENT REPORT

PHILADELPHIA ENERGY SOLUTIONS Refining & Marketing, LLC
PHILADELPHIA REFINERY
PHILADELPHIA, PENNSYLVANIA
and
SUNOCO PARTNERS Marketing & Terminals, LP
BELMONT TERMINAL
PHILADELPHIA, PENNSYLVANIA
and
MARCUS HOOK INDUSTRIAL COMPLEX
MARCUS HOOK, PENNSYLVANIA

Prepared for:
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February 24, 2015

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ACRONYMNS

AOC	Area of Concern
AT	Non-carcinogenic Averaging Time
bgs	Below Ground Surface
CSM	Conceptual Site Model
EF	Exposure Frequency
HHRA	Human Health Risk Assessment
IR	Intake Rate
MHIC	Marcus Hook Industrial Complex
MSC	Medium-Specific Concentration
PADEP	Pennsylvania Department of Environmental Protection
PES	Philadelphia Energy Solutions
PRG	Preliminary Remediation Goal
RCRA	Resource Conservation and Recovery Act
RfD	Reference Dose
RME	Reasonable Maximum Exposure
SEGH	Society for Environmental Geochemistry and Health
SHS	Statewide Health Standard
SSS	Site-Specific Standard
TRW	Technical Review Workgroup for Lead
USEPA	United States Environmental Protection Agency

1.0 EXECUTIVE SUMMARY

On behalf of the Philadelphia Refinery Operations and Marcus Hook Refinery Operations, series of Evergreen Resources Group, LLC (Evergreen), Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Human Health Risk Assessment (HHRA) report for the Philadelphia Energy Solutions Refining & Marketing, LLC Philadelphia Refinery (PES Refinery), the Sunoco Partners Marketing & Terminals, LP Belmont Terminal (Belmont Terminal) and the Sunoco Partners Marketing & Terminals, LP Marcus Hook Industrial Complex (MHIC).

The objectives of this study are to: 1) evaluate potential human health risks posed by residual concentrations of lead in soil under a non-residential-use scenario for the PES Refinery, Belmont Terminal and the MHIC, and 2) calculate a site-specific risk-based standard that is protective of this scenario. Although a variety of human receptor populations are potentially exposed to soil at each facility under site-specific exposure conditions, the United States Environmental Protection Agency (USEPA) default assumptions for assessing non-residential adult risks from lead exposure are adopted to provide a conservative assessment and develop a site-specific soil screening level applicable to both sites.

The rationale for application of the USEPA default non-residential exposure scenario is to support the future use of each property for non-residential purposes and for attaining Act 2 closure under the Non-Residential Site Specific Standard (SSS) for lead. This HHRA was performed in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. In addition, technical guidance related to risk assessment from the USEPA was applied, as appropriate.

The technical approach for the HHRA consisted of the following basic steps: identification of chemicals of potential concern, exposure assessment, toxicity assessment, risk characterization, and uncertainty analysis. The exposure assessment, toxicity assessment, and risk characterization sections of the HHRA evaluated potential risk from direct and/or indirect exposure to soil. The primary assumption in the USEPA's Adult Lead Model (ALM) is that the most sensitive receptor in the workplace is the developing fetus of a female worker.

Based on the results of this HHRA, Langan has concluded that no unacceptable risks are posed to generic non-residential populations potentially exposed to soil concentrations equivalent to 2,240 milligrams per kilogram (mg/kg). Evaluation of the generic exposure scenario is protective of all receptors identified at each site.

2.0 INTRODUCTION

On behalf of Philadelphia Refinery Operations and Marcus Hook Refinery Operations, series of Evergreen Resources Group, LLC (Evergreen), Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Human Health Risk Assessment (HHRA) report for the Philadelphia Energy Solutions Refining & Marketing, LLC (PES) Philadelphia Refinery, the Sunoco Partners Marketing & Terminals, LP Belmont Terminal (Belmont Terminal) and the Sunoco Partners Marketing & Terminals, LP Marcus Hook Industrial Complex (MHIC).

The objectives of this study are to: 1) evaluate potential human health risks posed by residual concentrations of lead in soil under a non-residential-use scenario for the PES Refinery, Belmont Terminal and the MHIC, and 2) calculate a site-specific risk-based standard that is protective of this scenario.

The rationale for this exposure scenario is to support the continued use of the PES Philadelphia Refinery as a refining complex and the Belmont Terminal as an active fueling terminal and the industrial redevelopment of MHIC under the Act 2 Site-Specific Standard (SSS).

This HHRA was performed in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. In addition, technical guidance related to risk assessment from the United States Environmental Protection Agency (USEPA) was also used, where applicable.

In accordance with Act 2, Langan, on behalf of Evergreen, has prepared the required public and municipal notices as part of this report submittal. Appendix A includes copies of each facility notice of intent to remediate (NIR), as well as the Act 2 report notices and their proof of receipt/publication for this report.

2.1 PES Philadelphia Refinery Current Site Conditions

The PES Philadelphia Refinery is located on approximately 1,295 acres in southwest Philadelphia (Figure 1). The PES Philadelphia Refinery is a Resource Conservation and Recovery Act (RCRA)-permitted facility that is actively managed. The refinery is zoned for heavy industrial use and is expected to remain so in perpetuity. The refining complex produces a wide range of fuels for markets in the United States. Among PES' various products are gasoline, low-sulfur diesel, jet fuel, kerosene, butane, propane,

home heating oil and the petrochemical cumene. PES currently processes approximately 330,000 barrels of crude oil per day.

2.2 Belmont Terminal Current Site Conditions

The Belmont Terminal is located on approximately 100 acres in southwest Philadelphia (Figure 2). The Belmont Terminal is comprised of primarily gasoline and diesel loading racks. The area is utilized for blending gasoline and additives, as well as wholesale distribution through the terminal. There are numerous underground process lines at the terminal. The Belmont Terminal is owned by Sunoco Partners Marketing and Terminals, LP.

2.3 MHIC Current Site Conditions

The MHIC is a RCRA-permitted facility that is actively managed. The MHIC is zoned for heavy industrial use and is expected to remain so in perpetuity. The MHIC is primarily located in Marcus Hook, Delaware County, Pennsylvania (Figure 3). A section of the southwest portion of the facility is located in New Castle County, Delaware. As of April 1, 2014, the MHIC is owned by Sunoco Partners Marketing and Terminals L.P. (SXL). On December 1, 2011, Sunoco Inc. (R&M) announced the indefinite idling of the main processing units at the former refinery due to deteriorating refining market conditions. Since the idling of processing units, select demolition and deconstruction has occurred. In 2013, SXL began redevelopment of the former Lube Service Center for the processing, storage, and distribution of ethane and propane. The future use of the remainder of the facility is uncertain; however, the future use will be non-residential.

2.4 Act 2 Context

Evergreen and Langan will prepare a Final Act 2 Closure Report for Areas of Interest (AOI) at each site in accordance with the existing Work Plan for Sitewide Approach Under the One Cleanup Program (Sunoco 2011). The purpose of the Final Act 2 Reports is to document the framework for attaining Act 2 closure and to receive a release of liability from the PADEP for lead detected in soil. Specifically, Evergreen will demonstrate attainment of the Non-Residential Statewide Health Standards for site chemicals of concern (COCs) and Site-Specific Standard for soil in the Final Reports. For lead, soil concentration data will be compared to the SSS derived in this HHRA to evaluate the attainability of Act 2 Standards.

3.0 DATA ANALYSIS

Maximum concentrations of lead detected in soil samples collected at the PES Philadelphia Refinery, the Belmont Terminal and the MHIC were compared to Pennsylvania's Act 2 Non-Residential Direct Contact Medium-Specific Concentration (MSC) for soil of 1,000 milligrams per kilogram (mg/kg) to establish lead as a constituent of potential concern at each facility. The SSS for lead is independent of the cumulative risks and hazards that will be evaluated in subsequent risk assessment reports submitted for the PES Refinery, the Belmont Terminal and the MHIC. Therefore, this HHRA does not consider chemical data for other site-related COCs.

4.0 APPLICABILITY OF THE ADULT LEAD MODEL

The PADEP published a Non-Residential MSC for lead calculated on the basis of soil ingestion as presented in 25 Pa. Code § 250.306(e), Appendix A, Table 7. The Non-Residential MSC was derived using the Society for Environmental Geochemistry and Health (SEGH) model, which was developed by the SEGH "Lead in Soil" Task Force (Wixson, 1991). In the SEGH model, a blood lead concentration (PbB) is equated to a baseline level plus an increment resulting from exposure to lead in soil or dust. The slope of the blood lead/environmental lead relationship used in calculating the increase in PbB over the baseline value, and, hence the soil screening level, can vary depending on a multitude of factors. The SEGH model permits adjustment of the target blood lead concentration (T), geometric mean background blood lead concentration (B), and geometric standard deviation (GSD) of blood lead distribution in consideration of site-specific conditions, but precludes adjustments on the basis of exposure and lead bioavailability.

The PADEP has endorsed the use of alternative uptake biokinetic models for the evaluation of lead toxicity (PADEP, 2013). Given that the Integrated Exposure Uptake Biokinetic (IEUBK) Model does not apply to adult exposure in nonresidential scenarios, the PADEP maintains:

> "For adult exposure in either the residential or nonresidential scenario… other models, such as the Bower [sic] model (Bowers *et al.*, 1994), or the physiologically-based pharmacokinetic model (O'Flaherty, 1995, 1997) developed to determine the effects of lead on adults may be used to determine site-specific cleanup numbers."

In response to the need for a scientifically defensible approach for assessing soil-borne human health lead risks at non-residential hazardous waste sites, the USEPA adapted the Bowers *et al.* model to develop the Adult Lead Model (ALM) using the same basic algorithms. The ALM is a widely-accepted approach to risk characterization for commercial and industrial adult worker exposure scenarios. In 2001, the USEPA conducted a review of six biokinetic adult lead models for assessing human health risk associated with non-residential exposure. The study concluded

that no single model, including the O'Flaherty model, represented a significant improvement to the ALM. Consequently, USEPA recommended continued use of the ALM (EPA, 2001).

5.0 CONCEPTUAL SITE MODEL

Current and known or potential future land use plays a significant role in the development of the Conceptual Site Model (CSM). The land use must also be assessed before receptor populations can be identified.

For this analysis, non-residential use was assumed to be the only probable future use based on the industrial setting and current zoning in the vicinity of each facility. Based on an evaluation of the current and likely future use of each facility, a list of receptor populations was identified for evaluation in human health risk assessments (Langan, 2014a and 2014b).

In general, risk assessments should be based upon realistic exposure scenarios. Site-specific information on exposure pathways, receptors and exposure factors, including actual data, should be used to the maximum extent possible (PADEP, 2013). However, not all exposure parameters need to be site-specific. Overall, it is important to consider whether using default exposure scenario assumptions will result in the calculation of a SSS that reflects the receptors and exposure pathways that are both currently occurring and that could reasonably occur in the future.

Given that the default exposure assumptions developed by USEPA for the ALM are not entirely inconsistent with the receptors and exposure pathways identified at the PES Philadelphia Refinery, the Belmont Terminal and the MHIC, application of site-specific alternatives to the default assumptions was not necessary to develop a SSS for lead. The ALM uses biokinetic slope factor to represent lead biokinetics and a relatively simplistic exposure model in which all exposure pathways, other than soil ingestion, are represented by a background blood lead concentration. For the purposes of the CSM, potentially complete exposure pathways associated with lead in soil include incidental ingestion of soil, dermal contact with soil, and inhalation of indoor and outdoor dust.

Each site was identified as a single unit of exposure that may be accessed by future non-residential receptors. A summary of the receptors, exposure media, and potentially complete exposure pathways assessed in this HHRA are provided below:

Receptor	Exposure Media	Potentially Complete Soil Exposure Pathways
Generic Non-Residential Worker	Surface soil 0-2 feet below ground surface (bgs)	Incidental ingestion, dermal contact, and inhalation of indoor and outdoor dust

6.0 EXPOSURE ASSESSMENT

This section presents the framework used by Langan to derive the potential exposures from lead for the default non-residential worker evaluated in this HHRA. Specifically, this framework was used to assess an exposure pathway, which is the course a chemical takes from its source to the exposed receptor. In order for an exposure pathway to be complete, it must contain a source, a transport medium (e.g., soil, air), a point of contact (receptor), and an exposure route (e.g., ingestion, dermal, or inhalation). If any of these elements is missing, an exposure pathway is deemed incomplete and can be excluded from the quantitative evaluation of risk (USEPA 1989).

6.1 Intake Calculations

Chemical exposure/intake is expressed as the amount of the agent at the exchange boundaries of an organism (e.g., skin, lungs, and intestinal tract) that is available for systemic absorption. The term "soil" refers to that portion of the soil to which adults are most likely to be exposed. Exposure to soil-derived dust occurs both in outdoor and indoor environments, the latter occurring where soil-derived dust has been transported indoors. Other types of dust, in addition to soil-derived dust, can contribute to adult lead exposure.

The general equation for exposure to lead from soil (direct and through indoor soil-derived dust) as defined by USEPA (2003):

$$Intake\ \left(\frac{ug}{day}\right) = \frac{PbS\ \times IR\ \times EF}{AT}$$

where:

Intake = Daily average intake (ingestion) of lead from soil taken over the averaging time in micrograms per day (µg/day)

PbS = Soil lead concentration in micrograms per gram (μg/g) (appropriate average concentration for individual)

IR = Intake rate of soil, including outdoor soil and indoor soil-derived dust in grams per day (g/day)

EF = Exposure frequency for contact with assessed soils and/or dust derived in part from these soils in days per year (days/year)

AT = Averaging time in days (the total period during which soil contact may occur)

Lead uptake is the daily average uptake of lead from the gastrointestinal tract into systemic circulation (μg/day) and is derived by multiplying intake by the dimensionless absolute gastrointestinal absorption fraction (AF) for ingested lead in soil and lead in dust derived from soil.

6.2 Exposure Frequency

The exposure frequency (EF) describes the number of times per year an event is likely to occur. Variables such as weather, vacations, and institutional controls are considered when determining reasonable and realistic exposure frequencies. The USEPA's Technical Workgroup for Lead (TRW) recommends a default value of 219 days/year. This is the same as the central tendency occupational exposure frequency recommended by USEPA, which is based on data from the Bureau of Labor Statistics. This estimate corresponds to the average time spent at work by both full-time and part-time workers. The default central tendency EF represents reasonable maximum exposure (RME) at the PES Philadelphia Refinery, the Belmont Terminal and MHIC.

6.3 Averaging Time

The AT parameter is the period over which exposure is averaged. For non-carcinogenic effects, AT is used in calculating an average daily exposure, and is 365 days/year for continuing, long-term exposures.

6.4 Daily Soil Ingestion Rate

The ingestion rate (IR) is the soil ingestion rate for oral exposures to soils. The USEPA's TRW recommends a default value of 0.05 g/day as a plausible point estimate of the central tendency for daily soil intake from all occupational sources, including soil in indoor dust resulting from non-contact intensive activities. In adopting the single IR parameter to describe all sources of ingested soil, the methodology is consistent with

the recommendations of the Superfund program and the default PADEP adult non-residential soil ingestion rate.

7.0 TOXICITY ASSESSMENT

This section presents the toxicity assessment for the PES Refinery, the Belmont Terminal and MHIC site-wide lead HHRA. The toxicity assessment provides a summary of the critical toxicity values (CTVs) that have been developed by USEPA to evaluate potential adverse health effects associated with chemical exposure.

The non-carcinogenic CTV is known as the reference dose (RfD). RfDs used to evaluate non-cancer effects are based on the premise that non-carcinogenic (i.e., toxic) effects exhibit a threshold. As long as the chronic daily intake of a chemical is less than the reference dose, exposure is unlikely to result in any adverse non-carcinogenic health effect. Reference doses are developed using human and animal studies, and incorporate safety factors to ensure health protection in the most sensitive population.

Inorganic lead does not currently have an RfD. Instead the potential health hazard from exposure to environmental lead can be estimated based on predicted blood lead levels in sensitive populations. The epidemiological investigations of the health effects of lead were discussed in the *Air Quality Criteria for Lead Volumes I-IV* (USEPA, 1986a) and the 1990 Addendum (USEPA, 1990). Based on an assessment of these studies, the USEPA concluded that fetal lead exposure could have undesirable effects on infant mental development, length of gestation, and possibly other aspects of fetal development, specifically neurobehavioral deficits. In particular, the USEPA determined that, "All of these studies taken together suggest that neurobehavioral deficits, including declines in Bayley Mental Development Index scores and other assessments of neurobehavioral function, are associated with prenatal blood lead exposure levels on the order of 10 to 15 micrograms per deciliter (μg/dl)" (USEPA, 1986b).

The USEPA's TRW has developed an interim guidance for assessing lead risks and establishing action levels for lead that are protective of both adults and the fetus of a pregnant adult. Action levels and target blood lead levels are estimated using USEPA's ALM (USEPA, 2003). The primary assumption in the ALM methodology is that the most sensitive receptor in the workplace is the developing fetus of a worker exposed in the workplace, since the USEPA identified the developing fetus as part of the sensitive U.S. population. For the PES Refinery, the Belmont Terminal and MHIC, this would be defined as a commercial/industrial worker that becomes pregnant at some point during the work year. The lead model does not assume that a pregnant worker is present at the site for the entire pregnancy, rather, that the worker has

worked at the site long enough to result in an elevated blood lead level to which the fetus could be subsequently exposed.

The ALM methodology is designed to estimate an average soil lead concentration that is not expected to result in a greater than 5% probability that the fetus of a female worker of child-bearing age has a blood lead level exceeding the level of concern of 10 µg/dL of blood (USEPA, 2003). This represents a conservative approach, as the PADEP applies a target blood lead level of 20 µg/dL as the default value in deriving the MSC for lead (PADEP, 1997).

8.0 RISK CHARACTERIZATION

This section presents the risk characterization for lead in soil at the PES Philadelphia Refinery, the Belmont Terminal and MHIC. The objective of the risk characterization is to calculate a generic SSS protective of all receptors by combining the results of the exposure and toxicity assessments.

The approach used to calculate a SSS for lead is presented below. In order to ensure that the SSS for both sites is adequately protective, the lead soil standard presented in this risk assessment was calculated using the default values and assumptions recommended by USEPA. The ALM methodology relates site lead concentrations to blood lead concentration in the mother and developing fetus based on the following additional assumptions:

- Fetal blood lead levels are proportional to maternal blood lead levels;
- Maternal blood lead levels can be predicted based on starting blood lead concentrations and an expected site-related increase;
- The site-related increase in maternal blood lead concentrations can be estimated using a linear biokinetic slope factor (BKSF) which is multiplied by the estimated lead uptake;
- Lead uptake can be estimated based on site concentrations of lead and assumptions regarding adult ingestion rates and the estimated AF of ingested lead; and
- A log-normal model can be used to estimate the distribution of blood lead concentrations in a population of individuals who contact similar environmental lead levels.

The basis for the calculation of the blood lead concentration for women of child-bearing age is given by:

$$PbB_{adult,central,goal} = PbB_{adult,0} + \frac{PbS * BKSF * IR * AF * EF}{AT}$$

where:

$PbB_{adult,\ central,\ goal}$ = Goal for central estimate of blood lead concentration

$PbB_{adult,0}$ = Typical blood lead concentration

PbS = Soil lead concentration (appropriate average concentration for individual)

BKSF = Biokinetic slope factor

IR = Intake rate of soil

AF = Absolute gastrointestinal absorption fraction

EF = Exposure frequency

AT = Averaging time

Given that the effects of lead are well understood, and the mean PbB is recognized as an acceptable predictor of the potential health effects associated with lead exposure, the approach outlined in the ALM derives a soil lead concentration that is considered protective of all employees. The foundation for the SSS calculation is the relationship between the mean soil lead concentration and the blood lead concentration in the developing fetus expressed by the following equation:

$$PRG = \frac{(PbB_{adult,central,goal} - PbB_{adult,0}) * AT}{BKSF * IR * AF * EF}$$

where:

PRG = Preliminary Remediation Goal, implemented as the SSS

Consistent with the USEPA's 2009 *Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameters* (USEPA 2009), the most current background blood lead level and geometric standard deviation parameter made available from the 1999-2004 National Health and Nutrition Examination Survey (Center for Disease Control, 2005) is utilized in the ALM. An action level of 2,240 µg/g (ppm) lead in soil for the generic non-residential site worker was estimated using Equations 1 and 2 and parameter values as shown below:

Exposure Variable	Description of Exposure Variable	Units	Value	Rationale/Source
$PbB_{fetal,\ 0.95}$	95th percentile fetal blood lead concentration	µg/dL	10	USEPA 2003
$R_{fetal/maternal}$	Fetal/maternal blood lead concentration	--	0.9	USEPA 2003

Exposure Variable	Description of Exposure Variable	Units	Value	Rationale/Source
BKSF	Biokinetic slope factor	µg/dL per µg/day	0.4	USEPA 2003
GSD_i	Geometric standard deviation blood lead concentration	--	1.8	Updated from analysis of NHANES
$PbB_{adult,0}$	Adult baseline blood lead concentration	µg/dL	1.0	Updated from analysis of NHANES
IR	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.05	PADEP 2013, EPA 2003
AF	Oral absorption of lead in soil	--	0.12	Based on absorption factor of soluble lead of 0.2 and soil matrix effect of 0.6 (USEPA 2003)
EF	Exposure frequency	days/yr	219	USEPA 2003
AT	Averaging time	days/yr	365	USEPA 2003

Based on the parameters used, the USEPA model predicts that exposure to lead in soil at a concentration of 2,240 mg/kg (2,240 µg/g * 1,000 g/kg * 1 mg/1,000 µg = 2,240 mg/kg) would result in a typical developing fetus of a site worker exposed at either facility having an estimated risk of approximately 5 percent of exceeding the 10 µg/dL blood lead level of concern. This is the target fetal blood lead distribution identified in USEPA guidance as posing an acceptable level of risk (USEPA, 2003).

The SSS for lead in soil at the PES Philadelphia Refinery, the Belmont Terminal and MHIC is shown in the following table and attached as Table 1:

Medium	Receptor	SSS	Units	Basis
Soil	Generic Non-residential Receptor	2,240	mg/kg	ALM

8.1 Uncertainty

Although the methods used to calculate the SSS for lead in soil at the PES Philadelphia Refinery, the Belmont Terminal and the MHIC comply with USEPA and PADEP standards, there are uncertainties associated with the procedures discussed above. This section discusses the following sources of uncertainties in the HHRA for the lead SSS:

- Data collection and evaluation;
- Exposure assessment;
- Bioavailability; and
- Risk characterization.

In the HHRA, it is assumed that samples collected will be representative of the area to which human populations will be exposed. However, the samples may not be completely representative due to biases in sampling and to random variability of samples. Soils are not homogenously distributed in the environment; therefore, characterization and delineation of soil to the SSS lead standard may result in an over- or under-estimation of actual concentrations and, thus, site risks.

The exposure assessment relied on a number of assumptions regarding the RME scenario used to provide an upper bound estimate of risk. Use of the USEPA's default exposure assumptions for exposure frequency and ingestion rate is highly likely to over-estimate potential risks. Uncertainty is also compounded with regard to assumptions about scenario settings and availability of contaminated soil for contact. For example the derivation of a SSS does not take into account that walkways, parking areas, and other structures preclude contact with contaminated soil, thus potentially resulting in an incomplete exposure pathway.

The default AF parameter is based, in part, on the assumption that the relative bioavailability of lead in soil compared to soluble lead is 0.6. The default AF represents a weight of evidence determination based on experimental estimates of the bioavailability of ingested lead in adult humans with consideration of three major sources of variability that are likely to be present in populations, but are not always represented in experimental studies. These include: variability in food intake, lead intake, and the lead form and particle size. The TRW considers 0.6 to be a plausible default point estimate for the relative bioavailability of lead in soil when site-specific data are not available.

Because there are uncertainties in each step in the derivation of a SSS, these uncertainties are often magnified in the final risk characterization. Because of the

conservative approaches used in each step, the overall SSS may be significantly lower, and thus overly conservative, than actual conditions at each facility would support.

9.0 SUMMARY AND CONCLUSIONS

Based on the results of this HHRA, Langan has concluded that a SSS for lead in soil of 2,240 mg/kg is protective of all receptor populations at the PES Philadelphia Refinery, the Belmont Terminal and MHIC. This derived value will be utilized for future reports submitted by Evergreen under the One Cleanup Program and/or the PADEP Act 2 program for the above referenced facilities.

10.0 REFERENCES

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TABLES

Table 1
Calculation of a Site-Specific Standard for Lead
Philadelphia Refinery, Belmont Terminal and Marcus Hook Industrial Complex
U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	ug/dL	1.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	219
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365
Site Specific Standard (SSS) for Lead		**ppm**	**2,240**

Notes:

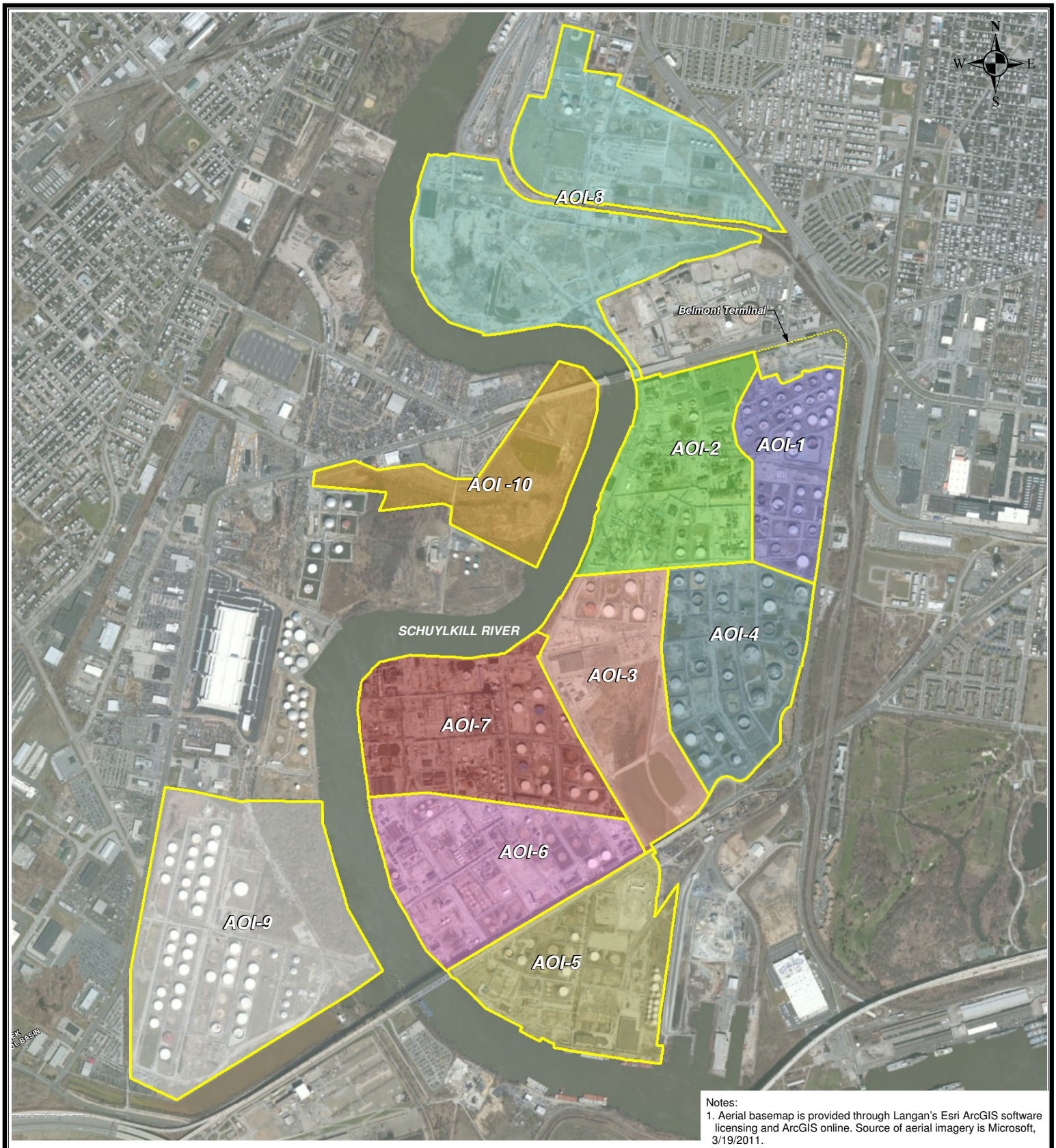
ug/dL = micrograms per deciliter

ug/day = micrograms per day

g/day = grams per day

days/yr = days per year

FIGURES



Notes:
1. Aerial basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online. Source of aerial imagery is Microsoft, 3/19/2011.

Legend

- AOI-1: No.1 Tank Farm/No.2 Tank Farm
- AOI-2: Point Breeze Processing Area
- AOI-3: Impoundment Area
- AOI-4: No. 4 Tank Farm Area
- AOI-5: Girard Point South Tank Field Area
- AOI-6: Girard Point Chemical Processing Area
- AOI-7: Girard Point Fuels Processing Area
- AOI-8: Point Breeze Process Area North Yard
- AOI-9: Schuylkill River Tank Farm
- AOI -10: Point Breeze Processing Area West Yard
- Belmont Terminal

Figure 1: Site Location Plan for PES Philadelphia Refinery Philadelphia, Pennsylvania

Evergreen Resources Management Operations
2 Righter Parkway, Suite 200
Wilmington, DE 19803

0 875 1,750
1"=1750'

SCALE: 1" = 1750'
DATE: January 26, 2015
DRN. BY: MH
CKD. BY: KM
JOB#: 2574601

Legend

- AOI Boundaries
- Belmont Terminal

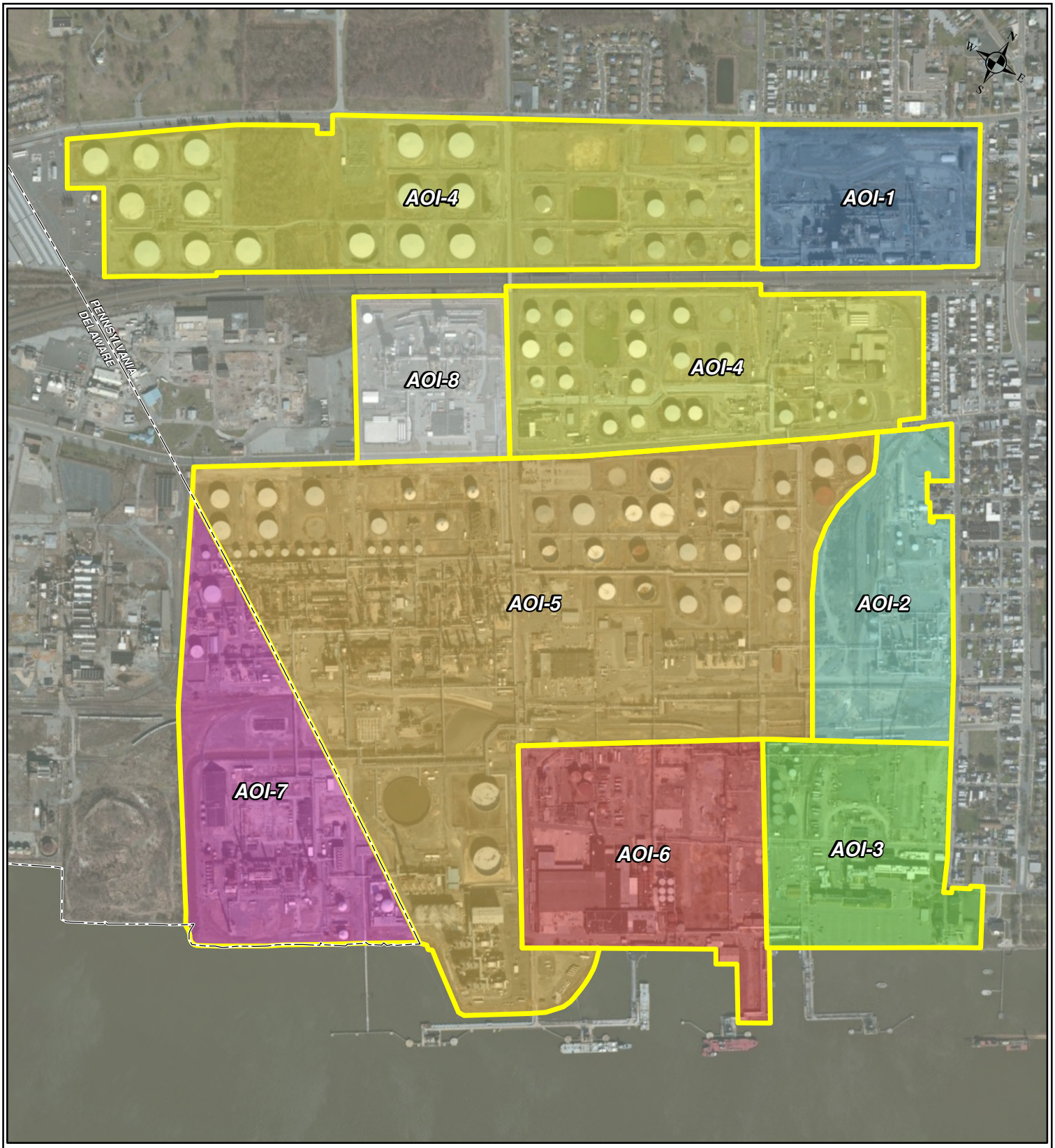
Notes:
1. Aerial basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online. Source of aerial imagery is Microsoft, 3/19/2011.

Figure 2: Site Location Plan for
Belmont Terminal
Philadelphia, Pennsylvania

Evergreen Resources
Management Operations
2 Righter Parkway, Suite 200
Wilmington, DE 19803

0 100 200
1"=200'

SCALE: 1" = 200'
DATE: January 26, 2015
DRN. BY: MH
CKD. BY: KM
JOB#: 2574601



Legend

Areas of Interest

- AOI-1 - 10 Plant
- AOI-2 - 12 Plant
- AOI-3 - Refinery Office Buildings
- AOI-4 - Upper No. 1 Tank Farm
- AOI-5 - Lower No. 1 Tank Farm/15 & 17 Plants/ Storm Water Tankage
- AOI-6 - Lube Oil Center
- AOI-7 - Ethylene Complex & Delaware Portion
- AOI-8 - Polypropylene Plant
- Delaware State Line

Notes:
1. Aerial basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online. Source of aerial imagery is Microsoft, 3/19/2011.

Figure 3: Site Location Plan for Marcus Hook Industrial Complex
Marcus Hook, Pennsylvania

Evergreen Resources Management Operations
2 Righter Parkway, Suite 200
Wilmington, DE 19803

0 425 850 Feet

SCALE: 1" = 850'
DATE: January 26, 2015
DRN. BY: MH
CKD. BY: KM
JOB#: 2574601

APPENDIX A

NOTICES OF INTENT TO REMEDIATE AND REPORT NOTIFICATIONS

PHILADELPHIA ENERGY SOLUTIONS (PES) FACILITY

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

November 17, 2014

Mr. C. David Brown, Ph. D., PG
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

RE: Philadelphia Energy Solutions Refining & Marketing LLC (PES) Philadelphia Refinery Complex
3144 West Passyunk Avenue, Philadelphia, Philadelphia County, Pennsylvania

Dear Mr. Brown:

In accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2), enclosed is the revised Notice of Intent to Remediate (NIR) for the Philadelphia Refinery Complex (site). The original NIR for the site was submitted on October 12, 2006. The purpose of this revision is to update owner and remediator information for the facility. This revision also includes a site location map depicting a change to property boundaries, most notably the exclusion of Belmont Terminal, which was covered under a separate NIR submission on October 6, 2014. It should be noted that the Belmont Terminal was not included in the original October 12, 2006 NIR, therefore, its exclusion from the revised NIR is not a change.

On August 14, 2012, Sunoco, Inc. (R&M) (Sunoco) entered into a Consent Order and Agreement with Philadelphia Energy Solutions Refining & Marketing LLC (PES) and the Pennsylvania Department of Environmental Protection (PADEP) for the Philadelphia Refinery Complex. As part of this buyer-seller agreement, Sunoco retained responsibility of remediation activities for environmental conditions existing at the time of the transfer, and PES is responsible for environmental conditions following the purchase agreement. On September 8, 2012, Sunoco conveyed the Philadelphia Refinery to PES. Effective December 30, 2013, "Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC" (Evergreen) assumed Sunoco legacy remediation liabilities with respect to the Philadelphia Refinery Complex. Evergreen will continue to manage the remediation work at the facility under the One Cleanup Program with the PADEP and United States Environmental Protection Agency (USEPA) and in accordance with 2012 Consent Order & Agreement.

Please call me at (302) 477-0192 with any questions or comments.

Best Regards,

James Oppenheim, PE
Vice President

cc: Evergreen File
Charles Barksdale, Philadelphia Energy Solutions Refining and Marketing, LLC
Jennifer Menges, Stantec Consulting Services Inc.

8000-FM-CRLG0010 Rev. 9/2010

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMUNITY REVITALIZATION AND LOCAL GOVERNMENT SUPPORT

For DEP Use Only
PF #_____
Rem ID #_____

NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires four general information items to be included in the NIR: the general location, listing of contaminants, intended use of property, and proposed remediation measures. In addition, indicate the standard(s) to be obtained (if known) and attach a scaled site map (if available).

Property Name Philadelphia Energy Solutions Refining & Marketing LLC (PES) Philadelphia Refinery Complex

Former Name(s) / AKA Sunoco Inc. (R&M) Philadelphia Refinery

Address / Location 3144 Passyunk Avenue

City Philadelphia Zip Code 19145

Municipality(s) City of Philadelphia County(ies) Philadelphia

Latitude 39 º (deg). 55 ‘ (min) 13.976 “ (sec) Longitude 75 º (deg). 11 ‘ (min) 52.429 “ (sec)

Horizontal Collection Method Geographic Information Systems

Horizontal Reference Datum NAD 1983 Reference Point Visitor Entrance

☒ Wish to participate in the DEP/EPA MOA. Contact Troy Conrad at tconrad@state.pa.us for details.

EPA ID#, if known PAD049791098

DEP ID#(s), if known Multiple
(i.e., eFACTS site ID#, storage tank facility ID#, water quality permit #, watershed permit, air quality permit #, etc.)

Date Release Occurred (if known) _____

Provide a brief description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any know primary contaminants to be addressed, and the intended future use of the property.

The site contamination consists of impacts to soil and groundwater associated with historic petrochemical refining operations. The primary consistuents of concern in soil and groundwater are lead, 1,2-dichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cumene, ethylbenzene, methyl tertiary butyl ether, toluene, total xylenes, ethylene dibromide, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluorene, naphthalene, phenanthrene, and pyrene. The future use of the facility is to remain industrial.

Provide a general description of proposed remediation measures.

Evergreen is submitting this Notice of Intent to Remediate (NIR) in order update an NIR previously submitted on October 6, 2006 which formally entered the property into the PA Act 2 Program. In November 2011, the facility was formally entered into the PA One Cleanup Program with the USEPA and PADEP. The purpose of this NIR revision is to update the facility ownership and remediator information. The facility has been divided into 11 Areas of Interest (AOIs). These areas consist of the Point Breeze Processing Area North Yard (AOI 8) and South Yards (AOI 1 through AOI 4); the Girard Point South Tank Field (AOI 5) and Processing Area (AOI 6 and AOI 7); the Schuylkill River Tank Farm (AOI 9); the West Yard (AOI 10); and the deep aquifer (AOI 11). Each AOI will be characterized in accordance with PA Act 2, and remedial measures will be developed to address the risk of exposure identified during

the characterization activities.

Remediation Standard(s) planned (if known at this time):

☐ Unknown at this time	☐ Soil	☐ Groundwater
☐ Background Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health - Residential Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health – Non-Residential Contaminants:	☐ Soil	☐ Groundwater
☒ Site Specific Contaminants:	☒ Soil	☒ Groundwater
☐ Special Industrial Area* Contaminants:	☐ Soil	☐ Groundwater

*NOTE: Specific standard or Special Industrial Area require a 30-day municipal comment period

Remediator / Property Owner / Consultant. Complete the form below for *each* recipient obtaining a release of liability upon approval of the final report. Attach additional sheets as necessary.

Remediator

Contact Person/Title Jim Oppenheim, PE/Vice President eFACTS Client ID* 314958

Relationship to Site Remediator Client Type* Limited Liability Company
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (302) 477-0192 Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management Operations EIN or Federal ID # 46-4184955

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803

Property Owner

Contact Person/Title Charles Barksdale Jr./Site Environmental Director eFACTS Client ID* 298341

Relationship to Site Owner Client Type* Limited Liability Company
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number 215-339-2074 Email Address charles.barksdale@pes-companies.com

Company Name Philadelphia Energy Solutions Refining and Marketing, LLC EIN or Federal ID # 61-168974

Address (street, city, state, zip) 3144 Passyunk Ave, Philadelphia, PA 19145

Consultant

Contact Person/Title Jennifer Menges/Principal Consultant, LRS eFACTS Client ID* N/A

Relationship to Site Consultant Client Type* N/A
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (610) 840-2540 Email Address Jennifer.Menges@stantec.com

Company Name Stantec EIN or Federal ID # N/A

Address (street, city, state, zip) 1060 Andrew Drive, Suite 140, West Chester, PA 19380

*Include eFACTS Client ID (if known) – "Client Types" below:

Association/Organization	Limited Liability company	Partnership-General
Authority	Limited Liability Partnership	Partnership-Limited
County	Municipality	School District
Estate/Trust	Non-Pennsylvania Government	Sole Proprietorship
Federal Agency	Other (Non-Government)	State Agency
Individual	Pennsylvania Corporation	

Preparer of Notice of Intent to Remediate

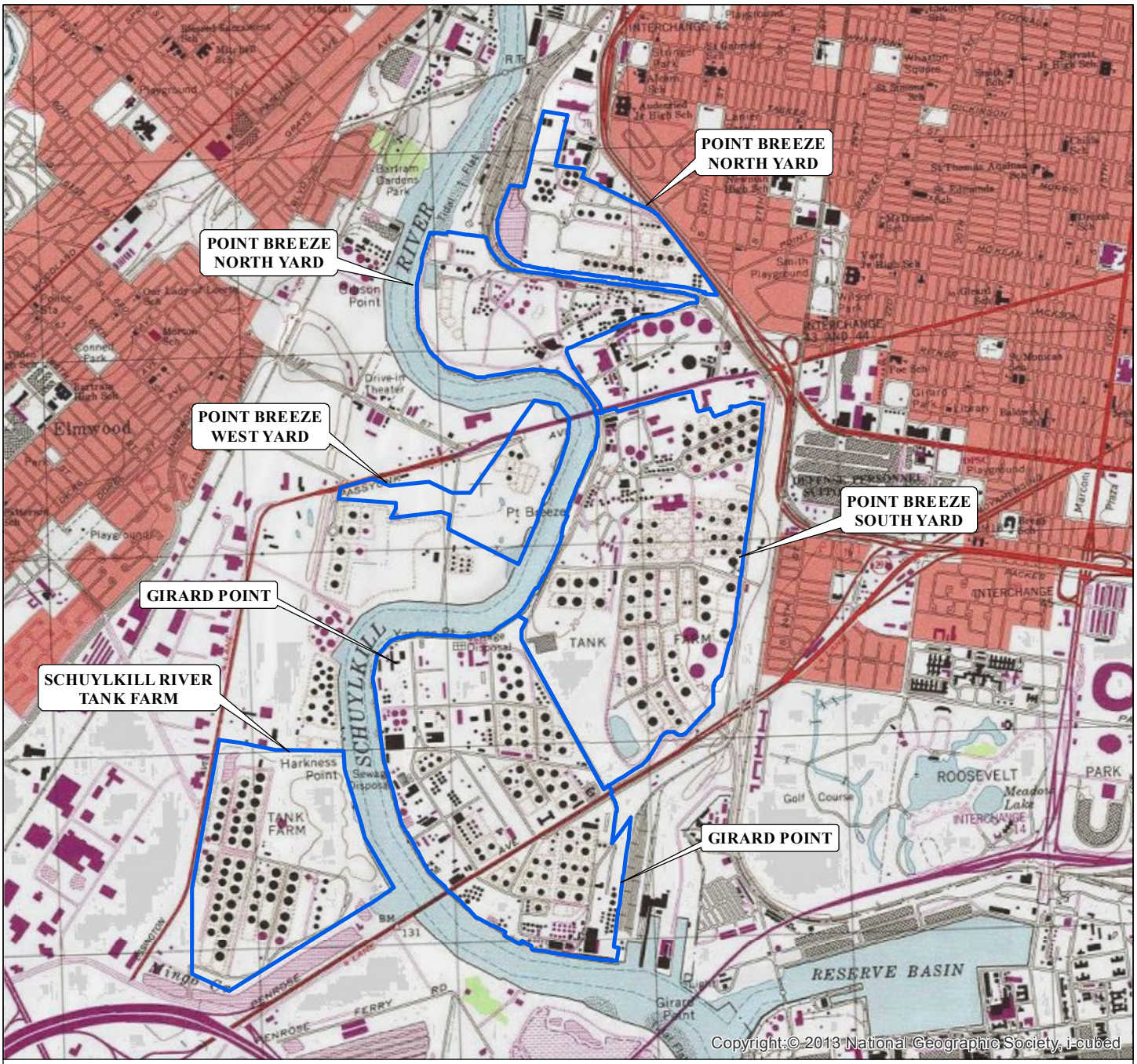
Name Jim Oppenheim, PE Title Vice President

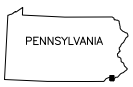
Phone Number (302) 477-0192 Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management eFACTS Client ID

Operations

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803





QUADRANGLE LOCATION

0 750 1,500 3,000 4,500 Feet

N

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PHILADELPHIA, PA.-NJ, QUADRANGLE, 1995

Stantec

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, Pennsylvania 19380
Tel. 610-840-2500
Fax. 610-840-2501
www.stantec.com

DRAWN BY: GWC
CHECKED BY: JKD
APPROVED BY: JLM
DATE: 11/11/2014

Prepared For:

EVERGREEN RESOURCES
MANAGEMENT OPERATIONS
PHILADELPHIA REFINERY COMPLEX
3144 PASSYUNK AVENUE
PHILADELPHIA, PA. 19145

Figure Title:

Philadelphia Refinery Complex
Site Location Map

Figure No.:

1

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

November 17, 2014

Leigh Anne Rainford, MPH
Sanitarian Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
321 University Avenue
Philadelphia, PA 19104

RE: Philadelphia Energy Solutions Refining & Marketing LLC (PES) Philadelphia Refinery Complex
3144 West Passyunk Avenue Philadelphia, Philadelphia County

Dear Ms. Rainford:

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) a site be provided to the municipality in which the site is located. This notification is to inform the City of Philadelphia of the submission of an update to the original October 12, 2006 NIR. The purpose of the revised NIR is to update the facility owner and remediator information. On September 8, 2012, Sunoco Inc., (R&M) (Sunoco) conveyed the Philadelphia Refinery to Philadelphia Energy Solutions Refining & Marketing LLC (PES). As part of the transaction, Sunoco retained responsibility for remediation activities for environmental conditions existing at the time of the transfer. Effective December 30, 2013, "Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC" (Evergreen) assumed Sunoco legacy remediation liabilities with respect to the Philadelphia Refinery Complex. A copy of the revised NIR is enclosed for your reference.

Please call me at (302) 477-0192 if you have any questions concerning the proposed remediation.

Best Regards,

James Oppenheim, PE
Vice President

cc: Evergreen File
C. David Brown, PADEP
Charles Barksdale, Philadelphia Energy Solutions Refining and Marketing, LLC
Jennifer Menges, Stantec Consulting Services Inc.

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

February 4, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
321 University Avenue
Philadelphia, Pennsylvania 19104

Re: Human Health Risk Assessment Report
Philadelphia Energy Solutions (PES) Facility
3144 West Passyunk Avenue
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574602

Dear Sir/Madam:

Notice is hereby given that Evergreen Resources Group, LLC (Evergreen) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection for the Philadelphia Energy Solutions (PES) Refining and Marketing LLC Facility, 3144 West Passyunk Avenue, Philadelphia County, Philadelphia, PA. The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please call me at (215) 491-6500 if you have any questions concerning the proposed site-specific risk-based standard for lead.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Charles Barksdale, PES
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_PES_HHRA_Philadelphia Department of Public Health.docx

SENDER: *COMPLETE THIS SECTION*

- **Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.**
- **Print your name and address on the reverse so that we can return the card to you.**
- **Attach this card to the back of the mailpiece, or on the front if space permits.**

1. Article Addressed to:

Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
321 University Avenue
Philadelphia, Pennsylvania 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

WARRINGTON PA 18976 FEB 9 2015

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt ~~for Merchandise~~
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7012 2210 0000 1980 3923

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7012 2210 0000 1980 3923

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.48

WARRINGTON PA 18976 Postmark Here FEB – 4 2015 USPS

Sent To: Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Street, Apt. No., or PO Box No.: Environmental Engineering Section
City, State, ZIP+4: 321 University Avenue
Philadelphia, Pennsylvania 19104

PS Form 3800, August 2006 See Reverse for Instructions

February 4, 2015

VIA EMAIL- MLOGAN@PHILLYNEWS.COM

Legal Advertising Department – Daily News
P.O. Box 8263 – 4th Floor
Philadelphia, PA 19101
Attn: Mary Anne Logan

Re: Human Health Risk Assessment Report
Philadelphia Energy Solutions (PES) Facility
3144 West Passyunk Avenue
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574602

On behalf of Evergreen Resources Group, LLC (Evergreen), Langan Engineering and Environmental Services, Inc. requests that the following Public Notice be published in the Philadelphia Daily News under the legal notices section.

Notification of Submittal of a Human Health Risk Assessment Report

Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for the Philadelphia Energy Solutions Refining and Marketing LLC (PES) Facility, 3144 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania.

The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please publish the notice as soon as possible and fax the proof of publication to me at (215) 491-6501. Please also mail the hard copy of the proof of publication and your invoice to my attention at the following address:

Langan Engineering & Environmental Services
Attn: Eric Dieck
2700 Kelly Road, Suite 200
Warrington, PA 18976

Should you have any questions or comments regarding the request, please contact me at (215) 491.6500.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Charles Barksdale, PES
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_PES_HHRA_Newspaper Notification.docx

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Florence Devlin being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

February 9, 2015

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Florence Devlin

Sworn to and subscribed before me this 9th day of February, 2015.

Mary Anne Logan
Notary Public

My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MARY ANNE LOGAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2017

Copy of Notice of Publication

Notification of Submittal of a Human Health Risk Assessment Report

Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for the Philadelphia Energy Solutions Refining and Marketing LLC (PES) Facility, 3144 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania.

The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

LEGAL NOTICES

Notification of
Submittal of a Human Health Risk
Assessment Report

Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for the Philadelphia Energy Solutions Refining and Marketing LLC (PES) Facility, 3144 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania.
The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Appeared in: ***Philadelphia Inquirer & Philadelphia Daily News*** on Monday, 02/09/2015

Back

BELMONT TERMINAL

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

October 6, 2014

Mr. C. David Brown, Ph. D., PG
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

RE: Belmont Terminal
2700 West Passyunk Avenue
Philadelphia, Philadelphia County

Dear Mr. Brown:

In accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2), enclosed is the Notice of Intent to Remediate (NIR) for the Belmont Terminal. This NIR covers the remediation required by the 2003 Consent Order and Agreement (CO&A) and is being submitted with the intent to enter the Belmont Terminal into the Act 2 program with the Pennsylvania Department of Environmental Protection (PADEP).

Please call me at (302) 477-0192 with any questions or comments.

Best Regards,

James Oppenheim, PE
Senior Environmental Consultant

cc: Evergreen File
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Jennifer Menges, Stantec Consulting Services Inc.

8000-FM-CRLG0010 Rev. 9/2010

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMUNITY REVITALIZATION AND LOCAL GOVERNMENT SUPPORT

For DEP Use Only
PF #_____
Rem ID #_____

NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires four general information items to be included in the NIR: the general location, listing of contaminants, intended use of property, and proposed remediation measures. In addition, indicate the standard(s) to be obtained (if known) and attach a scaled site map (if available).

Property Name Belmont Terminal

Former Name(s) / AKA

Address / Location 2700 West Passyunk Avenue

City Philadelphia Zip Code 19145

Municipality(s) City of Philadelphia County(ies) Philadelphia

Latitude 39 º (deg). 55 ‘ (min) 19.013 “ (sec) Longitude 75 º (deg). 11 ‘ (min) 27.942 “ (sec)

Horizontal Collection Method Geographic Information Systems

Horizontal Reference Datum NAD 1983 Reference Point Facility Entrance

☐ Wish to participate in the DEP/EPA MOA. Contact Troy Conrad at tconrad@state.pa.us for details.

EPA ID#, if known

DEP ID#(s), if known Multiple
(i.e., eFACTS site ID#, storage tank facility ID#, water quality permit #, watershed permit, air quality permit #, etc.)

Date Release Occurred (if known)

Provide a brief description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any know primary contaminants to be addressed, and the intended future use of the property.

The site contamination consists of historic impacts in soil and groundwater associated with the operation of a distribution terminal for refined petroleum products. The consistuents of concern in soil and groundwater are lead, 1,2-dichloroethane, 1,2,4- trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cumene, ethylbenzene, methyl tertiary butyl ether, toluene, total xylenes, ethylene dibromide, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluorene, naphthalene, phenanthrene, and pyrene. The future use of the facility is to remain industrial.

Provide a general description of proposed remediation measures.

Evergreen is submitting this Notice of Intent to Remediate (NIR) in order to formally enter the Belmont Terminal in the PA Act 2 Program. The facility will be characterized according to PA Act 2, and remedial measures will be developed to address the risk of exposures idenified in the characterization activities.

Remediation Standard(s) planned (if known at this time):

☐ Unknown at this time	☐ Soil	☐ Groundwater
☐ Background Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health - Residential Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health – Non-Residential Contaminants:	☐ Soil	☐ Groundwater
☒ Site Specific Contaminants:	☒ Soil	☒ Groundwater
☐ Special Industrial Area* Contaminants:	☐ Soil	☐ Groundwater

*NOTE: Specific standard or Special Industrial Area require a 30-day municipal comment period

Remediator / Property Owner / Consultant. Complete the form below for *each* recipient obtaining a release of liability upon approval of the final report. Attach additional sheets as necessary.

Remediator

Contact Person/Title Jim Oppenheim, Vice President/PE — eFACTS Client ID* 314958

Relationship to Site Remediator — Client Type* Limited Liability Company
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (302) 477-0192 — Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management Operations — EIN or Federal ID # 46-4184955

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803

Property Owner

Contact Person/Title Brad Fish, Project Manager — eFACTS Client ID* 161585

Relationship to Site Owner Representative — Client Type* Limited Liability Partnership
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (610) 859-5412 — Email Address blfish@sunocologistics.com

Company Name Sunoco Partners Marketing & Terminals, L.P. — EIN or Federal ID # 23-3102655

Address (street, city, state, zip) 4041 Market Street, Aston, PA 19014

Consultant

Contact Person/Title Jennifer Menges/Principal Consultant, LRS — eFACTS Client ID* N/A

Relationship to Site Consultant — Client Type* N/A
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (610) 840-2540 — Email Address Jennifer.Menges@stantec.com

Company Name Stantec — EIN or Federal ID # N/A

Address (street, city, state, zip) 1060 Andrew Drive, Suite 140, West Chester, PA 19380

*Include eFACTS Client ID (if known) – "Client Types" below:

Association/Organization	Limited Liability company	Partnership-General
Authority	Limited Liability Partnership	Partnership-Limited
County	Municipality	School District
Estate/Trust	Non-Pennsylvania Government	Sole Proprietorship
Federal Agency	Other (Non-Government)	State Agency
Individual	Pennsylvania Corporation	

Preparer of Notice of Intent to Remediate

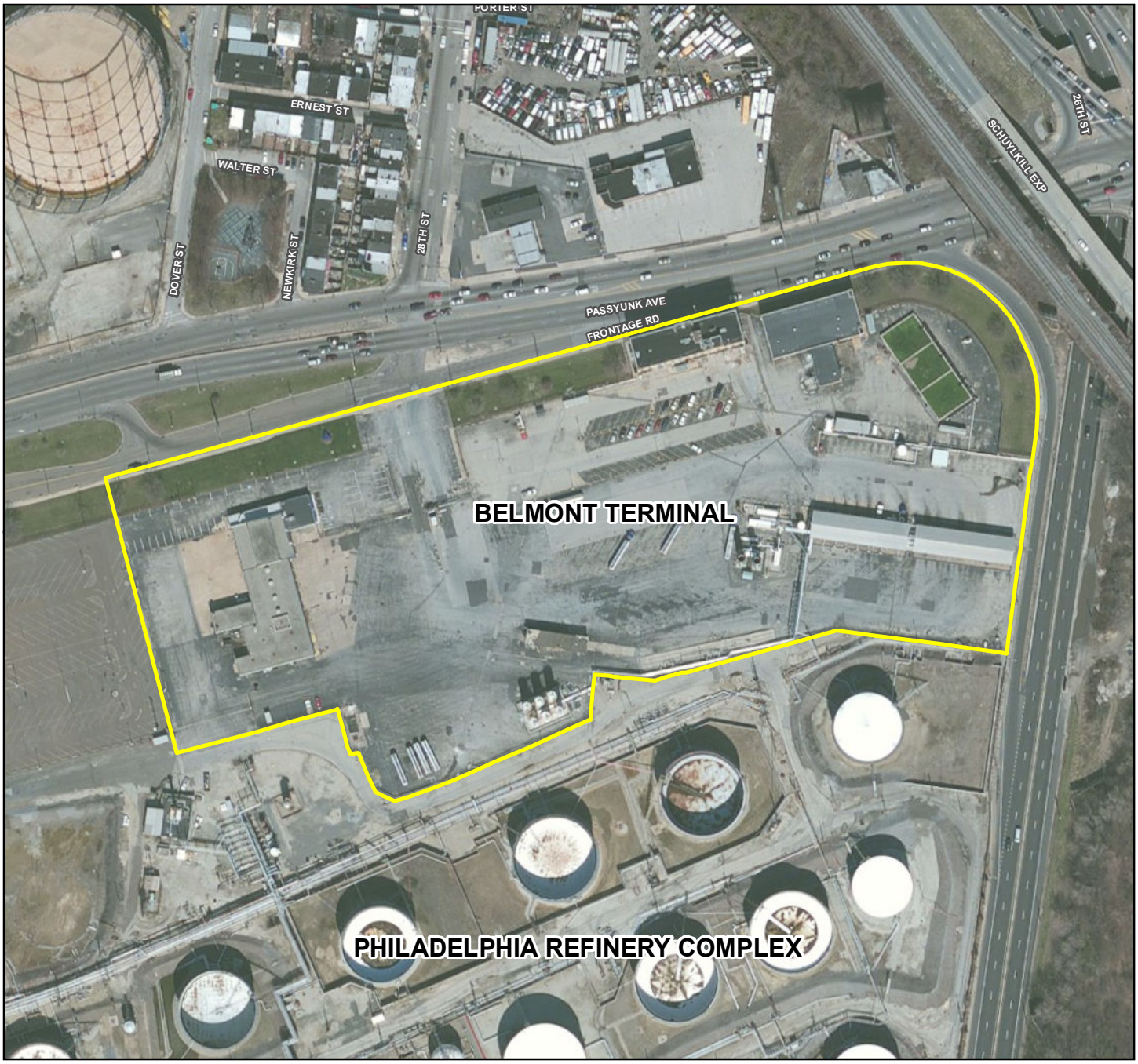
Name Jim Oppenheim — Title Vice President

Phone Number (302) 477-0192 — Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management — eFACTS Client ID 314958

Operations

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803



Legend

SITE BOUNDARY

IMAGE SOURCE: ESRI ONLINE - WORLD IMAGERY 2011

0 100 200 400 Feet

N

Stantec

Stantec Consulting Services Inc.
1060 Andrew Drive, Suite 140
West Chester, Pennsylvania 19380
Tel. 610-840-2500
Fax. 610-840-2501
www.stantec.com

Prepared For:

EVERGREEN RESOURCES MANAGEMENT OPERATIONS BELMONT TERMINAL
2700 WEST PASSYUNK AVENUE
PHILADELPHIA, PA 19145

Figure Title:

Belmont Terminal
Site Location Map

Figure No.:

1

DRAWN BY: GWC
CHECKED BY: JKD
APPROVED BY: JLM
DATE: 10/6/2014

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

October 6, 2014

Philadelphia Department of Public Health
Environmental Health Services
321 University Avenue
Philadelphia, PA 19104

RE: Belmont Terminal
2700 West Passyunk Avenue
Philadelphia, Philadelphia County

Dear Sir/Madam:

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) a site be provided to the municipality in which the site is located. In accordance with this provision of Act 2, Evergreen Resources Management Operations (Evergreen) is formally notifying you of its intent to remediate the subject site. A copy of the Notice of Intent to Remediate, which has been sent to the Department of Environmental Protection (DEP), is enclosed. This notice will also be published in the Pennsylvania Bulletin, and a summary of the notice will be placed in the Philadelphia Daily News on October 8, 2014.

Publication of this notice in the Philadelphia Daily News initiates the 30-day public and municipal comment period. During this time, your municipality may request to become involved in the development of the remediation and reuse plans for the site. If the municipality wishes to become involved in this project, please send your comments to Evergreen to my attention. Please call me at (302) 477-0192 if you have any questions concerning the proposed remediation.

Best Regards,

James Oppenheim, PE
Senior Environmental Consultant

cc: Evergreen File
C. David Brown, PADEP
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Jennifer Menges, Stantec Consulting Services Inc.

October 8,2014

Dear Customer:

The following is the proof-of-delivery for tracking number 771396590763.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	W.FAUST	**Delivery location:**	321 S UNIVERSITY AVE PHILADELPHIA, PA 19104
Service type:	FedEx 2Day	**Delivery date:**	Oct 8, 2014 10:57
Special Handling:	Deliver Weekday		

Shipping Information:

Tracking number:	771396590763	**Ship date:**	Oct 6, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
Environmental Health Services
Philadelphia Dept of Public Health
321 University Avenue
PHILADELPHIA, PA 19104 US

Shipper:
Karen Middleton
Stantec Consulting Corporation
1060 ANDREW DR STE 140
WEST CHESTER, PA 19380 US

Reference non-billable

Thank you for choosing FedEx.

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Florence Devlin being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

October 8, 2014

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Florence Devlin

Sworn to and subscribed before me this 8th day of October, 2014.

Mary Anne Logan
Notary Public

My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MARY ANNE LOGAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2017

Copy of Notice of Publication

Newspaper Notice of an Intent to Remediate to an Environmental Standard.
(Sections 302(e)(1)(ii), 303(h)(1)(ii), 304(n)(1)(i), and 305(e)(1))

Pursuant to the Land Recycling and Environmental Remediation Standards Act, the act of May 19, 1995, P.L. 4, No. 1995-2., notice is hereby given that Evergreen Resources Management Operations (Evergreen) has submitted to the Pennsylvania Department of Environmental Protection a Notice of Intent to Remediate a site located at 2700 West Passyunk Avenue, Philadelphia, Pennsylvania. This Notice of Intent to Remediate states that the site is a distribution terminal for petroleum products and has been found to be contaminated with petroleum compounds which have contaminated groundwater and soil on the site. Evergreen has indicated that the proposed remediation measures will be source reduction and engineered boundary controls. The proposed future use of the property will be non-residential for industrial use.

Evergreen plans to use the site-specific standard at the site. The Act provides for a 30-day public comment period for site-specific standard remediations. The 30-day comment period is initiated with the publication of this notice. Until 11/7/2014, the City of Philadelphia may submit a request to Evergreen to be involved in the development of the remediation and reuse plans for the site. The City of Philadelphia may also submit a request to Evergreen during this 30-day comment period to develop and implement a public involvement plan. Copies of these requests and of any comments should also be submitted to the Department of Environmental Protection at PADEP, 2 East Main Street, Norristown, PA 19401 to the attention of Mr. C. David Brown. All correspondence with Evergreen should be addressed to James Oppenheim, Evergreen Resources Management Operations at 2 Righter Parkway, Suite 200, Wilmington, DE 19803.

February 4, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
321 University Avenue
Philadelphia, Pennsylvania 19104

Re: Human Health Risk Assessment Report
Belmont Terminal
2700 West Passyunk Avenue
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574602

Dear Sir/Madam:

Notice is hereby given that Evergreen Resources Group, LLC (Evergreen) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection for Belmont Terminal, 2700 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania. The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please call me at (215) 491-6500 if you have any questions concerning the proposed site-specific risk-based standard for lead.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_Belmont_HHRA_Philadelphia Department of Public Health.docx

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
321 University Avenue
Philadelphia, Pennsylvania 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

PHILA. PUBLIC HEALTH
FEB 09 2015

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt ~~for Merchandise~~
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 2210 0000 1980 3947

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7012 2210 0000 1980 3947

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.48

HARRINGTON PA 18976
Postmark Here
FEB - 4 2015

Sent To Leigh Anne Rainford, MPH
Sanitation Supervisor
Philadelphia Department of Public Health
Environmental Engineering Section
Street, Apt. No.; or PO Box No. 321 University Avenue
City, State, ZIP+4 Philadelphia, Pennsylvania 19104

PS Form 3800, August 2006 See Reverse for Instructions

February 4, 2015

VIA EMAIL- MLOGAN@PHILLYNEWS.COM

Legal Advertising Department – Daily News
P.O. Box 8263 – 4th Floor
Philadelphia, PA 19101
Attn: Mary Anne Logan

Re: Human Health Risk Assessment Report
Belmont Terminal
2700 West Passyunk Avenue
Philadelphia, Philadelphia County, Pennsylvania
Langan Project No.: 2574602

On behalf of Evergreen Resources Group, LLC (Evergreen), Langan Engineering and Environmental Services, Inc. requests that the following Public Notice be published in the Philadelphia Daily News under the legal notices section.

Notification of Submittal of a Human Health Risk Assessment Report

Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Belmont Terminal, 2700 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania.

The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please publish the notice as soon as possible and fax the proof of publication to me at (215) 491-6501. Please also mail the hard copy of the proof of publication and your invoice to my attention at the following address:

Langan Engineering & Environmental Services
Attn: Eric Dieck
2700 Kelly Road, Suite 200
Warrington, PA 18976

Should you have any questions or comments regarding the request, please contact me at (215) 491.6500.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_Belmont_HHRA_Newspaper Notification.docx

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Florence Devlin being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

February 9, 2015

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Florence Devlin

Sworn to and subscribed before me this 9th day of February, 2015.

Mary Anne Logan
Notary Public

My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
MARY ANNE LOGAN, Notary Public
City of Philadelphia, Phila. County
My Commission Expires March 30, 2017

Copy of Notice of Publication

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The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

LEGAL NOTICES

Notification of
Submittal of a

Human Health Risk Assessment Report
Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Belmont Terminal, 2700 West Passyunk Avenue, Philadelphia County, Philadelphia, Pennsylvania.
The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Appeared in: ***Philadelphia Inquirer & Philadelphia Daily News*** on Monday, 02/09/2015

Back

MARCUS HOOK INDUSTRIAL COMPLEX

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

January 15, 2015

Mr. C. David Brown, Ph. D., PG
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

RE: Marcus Hook Industrial Complex
100 Green Street
Marcus Hook, Delaware County

Dear Mr. Brown:

In accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2), enclosed is the revised Notice of Intent to Remediate (NIR) for the Marcus Hook Industrial Complex (site). The original NIR for the site was submitted on September 15, 2011. The purpose of this revision is to update owner and remediator information for the facility and to add Area of Interest (AOI) 8. Sunoco, Inc. (R&M) ("Sunoco") previously operated the refinery located at 100 Green Street in Marcus Hook, Pennsylvania (the "Marcus Hook Property"). The Marcus Hook Property is currently owned and operated by Sunoco Partners Marketing & Terminals, L.P. ("SPMT") and Sunoco Pipeline L.P. and is referred to as the Marcus Hook Industrial Complex. As of December 30, 2013, Marcus Hook Refinery Operations, a series of Evergreen Resources Group, LLC (Evergreen), assumed the responsibility for remediation liabilities occurring at the site on or before December 30, 2013. Evergreen will continue to manage the remediation work at the facility under the One Cleanup Program with the Pennsylvania Department of Environmental Protection (PADEP) and United States Environmental Protection Agency (USEPA).

Please call me at (302) 477-0192 with any questions or comments.

Best Regards,

James Oppenheim, PE
Vice President

cc: Evergreen File
Brad Fish, Sunoco Partners Marketing & Terminals, L.P.
Jennifer Menges, Stantec Consulting Services Inc.

8000-FM-CRLG0010 Rev. 9/2010

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMUNITY REVITALIZATION AND LOCAL GOVERNMENT SUPPORT

For DEP Use Only
PF #_____
Rem ID #_____

NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires four general information items to be included in the NIR: the general location, listing of contaminants, intended use of property, and proposed remediation measures. In addition, indicate the standard(s) to be obtained (if known) and attach a scaled site map (if available).

Property Name Marcus Hook Industrial Complex

Former Name(s) / AKA Sunoco Inc. (R&M) Marcus Hook Refinery

Address / Location 100 Green Street

City Marcus Hook Zip Code 19061

Municipality(s) Borough of Marcus Hook County(ies) Delaware

Latitude 39 º (deg). 48 ‘ (min) 43.3141 “ (sec) Longitude -75 º (deg). 24 ‘ (min) 49.0411 “ (sec)

Horizontal Collection Method Geographic Information Systems

Horizontal Reference Datum NAD 1983 Reference Point Visitor Entrance

☒ Wish to participate in the DEP/EPA MOA. Contact Troy Conrad at tconrad@state.pa.us for details.

EPA ID#, if known 110032885723

DEP ID#(s), if known Multiple
(i.e., eFACTS site ID#, storage tank facility ID#, water quality permit #, watershed permit, air quality permit #, etc.)

Date Release Occurred (if known) _____

Provide a brief description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any know primary contaminants to be addressed, and the intended future use of the property.

The site contamination consists of impacts to soil and groundwater associated with historic petrochemical refining operations. The primary consistuents of concern in soil and groundwater are lead, 1,2-dichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cumene, ethylbenzene, methyl tertiary butyl ether, toluene, total xylenes, ethylene dibromide, anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluorene, naphthalene, phenanthrene, and pyrene. The future use of the facility is to remain industrial.

Provide a general description of proposed remediation measures.

Evergreen is submitting this Notice of Intent to Remediate (NIR) in order update an NIR previously submitted on September 15, 2011 which originally entered the property into the PA Act 2 Program. In November 2011, the facility was formally entered into the PA One Cleanup Program with the USEPA and PADEP. The purpose of this NIR revision is to update the facility ownership and remediation information. The facility has been divided into 7 Areas of Interest (AOIs) within in the state of Pennsylvania as shown in the attached Figure 1. These areas consist of the 10 Plant area (AOI 1), the 12 Plant area (AOI 2), the refinery office buildings (AOI 3), Upper No. 1 Tank Farm, (AOI 4), Lower No. 1 Tank Farm (AOI 5), the Former Lube Oil Center (AOI 6), and the polypropylene plant (AOI 8). The area of the property located in the State of Delaware has been divided into a separate AOI (AOI 7) and will be

characterized and remediated separately. Each AOI will be characterized in accordance with PA Act 2, and remedial measures will be developed to address the risk of exposure identified during the characterization activities.

Remediation Standard(s) planned (if known at this time):

☐ Unknown at this time	☐ Soil	☐ Groundwater
☐ Background Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health - Residential Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health – Non-Residential Contaminants:	☐ Soil	☐ Groundwater
☒ Site Specific Contaminants:	☒ Soil	☒ Groundwater
☐ Special Industrial Area* Contaminants:	☐ Soil	☐ Groundwater

*NOTE: Specific standard or Special Industrial Area require a 30-day municipal comment period

Remediator / Property Owner / Consultant. Complete the form below for *each* recipient obtaining a release of liability upon approval of the final report. Attach additional sheets as necessary.

Remediator

Contact Person/Title Jim Oppenheim, Vice President/PE — eFACTS Client ID* 314959

Relationship to Site Remediation Project Manager — Client Type* Limited Liability Company
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (302) 477-0192 — Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management Operations — EIN or Federal ID # 46-4184955

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803

Property Owner

Contact Person/Title Brad Fish, Project Manager — eFACTS Client ID* 161585

Relationship to Site Owner Representative — Client Type* Limited Liability Partnership
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (610) 859-5412 — Email Address blfish@sunocologistics.com

Company Name Sunoco Partners Marketing & Terminals, L.P. — EIN or Federal ID # 23-3102655

Address (street, city, state, zip) 4041 Market Street, Aston, PA 19014

Consultant

Contact Person/Title Jennifer Menges/Principal Consultant, LRS — eFACTS Client ID* N/A

Relationship to Site Consultant — Client Type* N/A
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number (610) 840-2540 — Email Address Jennifer.Menges@stantec.com

Company Name Stantec — EIN or Federal ID # N/A

Address (street, city, state, zip) 1060 Andrew Drive, Suite 140, West Chester, PA 19380

*Include eFACTS Client ID (if known) – "Client Types" below:

Association/Organization	Limited Liability company	Partnership-General
Authority	Limited Liability Partnership	Partnership-Limited
County	Municipality	School District
Estate/Trust	Non-Pennsylvania Government	Sole Proprietorship
Federal Agency	Other (Non-Government)	State Agency
Individual	Pennsylvania Corporation	

Preparer of Notice of Intent to Remediate

Name Jim Oppenheim — Title Vice President

Phone Number (302) 477-0192 — Email Address JROPPENHEIM@evergreenresmgt.com

Company Name Evergreen Resources Management — eFACTS Client ID 314959

Operations

Address (street, city, state, zip) 2 Righter Parkway, Suite 200, Wilmington, DE 19803

LEGEND

SITE BOUNDARY (PENNSYLVANIA)

SITE BOUNDARY (DELAWARE)

IMAGE SOURCE: TerraServer 2014

0 300 600 1,200 1,800 2,400 Feet

N

Stantec

Stantec Consulting Services Inc.

1060 Andrew Drive, Suite 140
West Chester, Pennsylvania 19380
Tel. 610-840-2500
Fax. 610-840-2501
www.stantec.com

DRAWN BY: GWC
CHECKED BY: JKD
APPROVED BY: JLM
DATE: 1/15/2015

Prepared For:

MARCUS HOOK REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC.
100 GREEN STREET
MARCUS HOOK, PA 19061

Figure Title:

MARCUS HOOK INDUSTRIAL COMPLEX
SITE LOCATION MAP

Figure No.:

1

Evergreen Resources Management
2 Righter Parkway, Suite 200
Wilmington, DE 19803

January 15, 2015

Aubrey Mulholland
Borough Manager
Borough of Marcus Hook
10th and Green Streets
Marcus Hook, PA, 19601

RE: Marcus Hook Industrial Complex
100 Green Street
Marcus Hook, Delaware County

Dear Ms. Mulholland:

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) a site be provided to the municipality in which the site is located. This notification is to inform the Borough of Marcus Hook of the submission of an update to the original November 15, 2011 NIR. The purpose of the revision is to update owner and remediator information for the facility and to add Area of Interest (AOI) 8. Sunoco, Inc. (R&M) ("Sunoco") previously operated the refinery located at 100 Green Street in Marcus Hook, Pennsylvania (the "Marcus Hook Property"). The Marcus Hook Property is currently owned and operated by Sunoco Partners Marketing & Terminals, L.P. ("SPMT") and Sunoco Pipeline L.P. and is referred to as the Marcus Hook Industrial Complex. As of December 30, 2013, Marcus Hook Refinery Operations, a series of Evergreen Resources Group, LLC (Evergreen), assumed the responsibility for remediation liabilities occurring at the site on or before December 30, 2013. A copy of the revised NIR is enclosed for your reference.

Please call me at (302) 477-0192 with any questions or comments.

Best Regards,

James Oppenheim, PE
Vice President

cc: Evergreen File
C. David Brown, PADEP
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Jennifer Menges, Stantec Consulting Services Inc.

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

February 3, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Aubrey E. Mulholland
Borough Manager
Borough of Marcus Hook
10th & Green Streets
Marcus Hook, Pennsylvania 19061

Re: Human Health Risk Assessment Report
Marcus Hook Industrial Complex
100 Green Street
Marcus Hook, Delaware County, Pennsylvania
Langan Project No.: 2574602

Dear Ms. Mulholland:

Notice is hereby given that Evergreen Resources Group, LLC (Evergreen) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection for Marcus Hook Industrial Complex, 100 Green Street, Marcus Hook, Delaware County, Pennsylvania. The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code

This notice is made under the provision of the Land Recycling and Environmental Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

Please call me at (215) 491-6500 if you have any questions concerning the proposed site-specific risk-based standard for lead.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_Marcus Hook_HHRA_Philadelphia Department of Public Health.docx

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Aubrey Mulholland
Borough Manager
Borough of Marcus Hook
10th & Green Streets
Marcus Hook, Pennsylvania 19061

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Janice Cain ☐ Agent ☐ Addressee

B. Received by (Printed Name) Janice Cain
C. Date of Delivery 2/5/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt ~~for Merchandise~~
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 2210 0000 1980 3930

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7012 2210 0000 1980 3930

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Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.48

WARRINGTON PA 18976
Postmark Here
FEB - 4 2015

Sent To	Aubrey Mulholland
	Borough Manager
Street, Apt. No.; or PO Box No.	Borough of Marcus Hook
	10th & Green Streets
City, State, ZIP+4	Marcus Hook, Pennsylvania 19061

PS Form 3800, August 2006 See Reverse for Instructions

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

February 4, 2015

VIA EMAIL- LEGALS@DELCOTIMES.COM

Delaware County Daily Times
Legal Advertising Department
500 Mildred Avenue
Primos, PA 19018
Attn: Mary Lynn

Re: Human Health Risk Assessment Report
Marcus Hook Industrial Complex
100 Green Street
Marcus Hook, Delaware County, Pennsylvania
Langan Project No.: 2574602

On behalf of Evergreen Resources Group, LLC (Evergreen), Langan Engineering and Environmental Services, Inc. requests that the following Public Notice be published in the Delaware County Daily Times under the legal notices section.

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Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Marcus Hook Industrial Complex, 100 Green Street, Marcus Hook, Delaware County, Pennsylvania.

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Please publish the notice as soon as possible and fax the proof of publication to me at (215) 491-6501. Please also mail the hard copy of the proof of publication and your invoice to my attention at the following address:

Langan Engineering & Environmental Services
Attn: Eric Dieck
2700 Kelly Road, Suite 200
Warrington, PA 18976

Should you have any questions or comments regarding the request, please contact me at (215) 491.6500.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Eric Dieck
Staff Hydrogeologist

cc: Jim Oppenheim, Evergreen
Brad Fish, Sunoco Partners Marketing & Terminals, LP
Kevin McKeever, Langan

\\langan.com\data\DT\data6\2574601\Office Data\Reports\Lead Human Health Risk Assessment\HHRA\Public Notices and Submittal Forms\2015_0204_Marcus Hook_HHRA_Newspaper Notification.docx

Copy of Notice or Publication

Notification of Submittal of a Human Health Risk Assessment Report

Notice is hereby given that Evergreen Resources Group, LLC (remediator) is in the process of submitting a Human Health Risk Assessment Report to the Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office for Marcus Hook Industrial Complex, 100 Green Street, Marcus Hook, Delaware County, Pennsylvania.

The report is being submitted in accordance with the requirements and technical guidance of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) and the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) as Title 25, Chapter 250 of the Pennsylvania Code. The report presents the site-specific risk-based standard for lead that has been developed for the subject property. This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.
DCT, February 6, a-1

Proof of Publication of Notice in Delaware County Daily Times

Under Newspaper Advertising Act. No. 587, Approved May 16, 1929

State of Pennsylvania,
County of Delaware, } ss.

LYNN D. BETTCHER designated agent of CENTRAL STATES PUBLISHING, INC., being duly sworn, deposes and says that the DELAWARE COUNTY DAILY TIMES, a daily newspaper of general circulation as defined in the above-mentioned Act, published at Primos, Delaware County, Pennsylvania, was established September 7, 1876, and issued and published continuously thereafter for a period of 100 years and for a period of more than six months immediately prior hereto, (under the name Chester Times prior to November 2, 1959) in the City of Chester, County of Delaware and further says that the printed notice or publication attached hereto is an exact copy of a notice or publication printed and published in the regular edition and issues of the DELAWARE COUNTY DAILY TIMES on the following dates, viz.....

February 6, A.D. 20 15

and that said advertising was inserted in all respects as ordered.

Affiant further deposes that he is the proper person duly authorized by CENTRAL STATES PUBLISHING, INC. publisher of said DELAWARE COUNTY DAILY TIMES, a newspaper of general circulation, to verify the foregoing statement under oath and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Lynn D. Bettcher

Sworn to and subscribed before me this

6th day of February 20 15

Kathleen Ragni

Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Kathleen Ragni, Notary Public
Upper Darby Twp., Delaware County
My Commission Expires March 2, 2015
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

RECEIPT 02/05/15

digitalfirst MEDIA

PENNSYLVANIA GROUP

Account:	**887295**
Name:	
Company:	**LANGAN**
Address:	**P.O. BOX 1569** **DOYLESTOWN, PA 18901**
Telephone:	**(215) 491-6500**
Fax:	
Description:	**Notification of Submittal of a Human**

Date:	**02/05/15**
Start Date:	**02/06/15** Stop Date:**02/06/15**
Class:	**1201 - Legal Notices**
Ad ID:	**502905**
Ad Taker:	**CRMWISNEWSKI**
Sales Person:	**Marylynn Wisnewski-Class Rep (**
Words:	**149**
Lines:	**42**
Agate Lines:	**42**
Depth:	**4.667**
Inserts:	**2**
Blind Box:	
PO Number:	

Ad sample

Total:	**$154.82**
Paid Amount:	**$0.00**
Amount Due:	**$154.82**

Publication

Daily Times and Sunday Times, delcotimes.com

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We Appreciate Your Business!
Thank You !