

S-1924
October 19, 2020

Frank Gardner
US Environmental Protection Agency
Brownfields Section Chief
5 Post Office Square, Suite 100
Mail Code OSRR07-2
Boston, MA 02109-3912

Re: **DRAFT Analysis of Brownfield Cleanup Alternatives**
Former Contract Plating 540 Longbrook Avenue, Stratford, CT

Dear Mr. Gardner:

The following is a DRAFT Analysis of Brownfield Cleanup Alternatives (ABCA) for the brownfield site known as the Former Contract Plating facility located at 540 Longbrook Avenue in Stratford, CT. This ABCA has been prepared as a requirement of the U.S Environmental Protection Agency (EPA) Brownfields Cleanup Grant application prepared by the Town of Stratford.

I. Introduction and Background

a. Site Location

The site is a 10.5-acre property located at 540 Longbrook Avenue, Stratford Connecticut. The site is abutted by residential properties to the northwest, the Raymark Superfund Operational Unit 4 (former Raymark Ballfields, current Raymark waste consolidation area) to the northeast, and Metro-North railroad tracks and commercial properties to the south and southwest. The site location and surrounding area are shown on Figure 1.

b. Previous Site Use(s) and Previous Cleanup/Remediation

The site was originally developed in approximately 1918 by the Bridgeport Motor Company, which operated as a motor truck assemble and repair business. Contract Plating operated at the site from approximately 1936 to 1995 and used the property for metal finishing, electroplating, and anodizing purposes. Most recently, portions of the site exterior were used by Good Earth Tree Care, a tree services company, which mulches yard clippings and trees. The property is owned by the Town of Stratford and was acquired in 2013 through tax foreclosure.

Building Area Cleanups - Two large vacant industrial buildings were located at the site along with five smaller buildings. These buildings are referred to as the Main Plating Building area which included the main plating building, boiler house, transformer shed, and water treatment shed and the Anodizing Building area which included the anodizing building, rectifier room, and former chemical storage warehouse. An aerial photograph showing the site layout is provided as Figure 2.

After the Contract Plating Company abandoned the property in 1995, The State of Connecticut completed an emergency cleanup to remove residual contamination and leftover plating chemicals and wastes from inside the buildings. Despite the State's cleanup efforts, large quantities of plating chemicals, wastes, and contaminated debris remained inside abandoned tanks, equipment, and mixed in with other debris on the floors of the buildings. Wastes and building materials found inside the building were reported to contain polychlorinated biphenyls (PCBs) at concentrations ≥ 50 parts per million (ppm) with concentrations up to 48,000 ppm (paint and debris inside main



plating building). Each of the buildings were abandoned after 1995, resulting in significant deterioration, making them unsafe for entry.

The remaining plating wastes and hazardous building materials were removed and disposed of prior to/during building demolition in 2015/2016. Standing portions of each buildings were demolished, leaving the slabs in place so the concrete and underlying soils could be assessed for waste characterization and remediation requirements. PCB cleanup and disposal associated with the building demolition was conducted in accordance with 40 CFR 761.61(b) and is documented in the PCB Abatement Closeout Report prepared by Tighe & Bond, dated September 18, 2017.

The concrete slabs, underlying soils, and soils adjacent to each building were assessed and determined to contain PCBs, metals, cyanide, and/or other plating waste constituents at concentrations that require cleanup. Much of the building slabs and soils were characterized as TSCA PCB Remediation Waste ≥ 50 ppm, RCRA Hazardous Waste, or a combination of the two.

In 2019 the concrete slab, underlying soils, and soils adjacent to the Main Plating Building Area were remediated in accordance with the Self-Implementing / Risk-Based PCB Cleanup Plan that was approved by EPA as documented in the approval letter dated June 27, 2019 (PCB Cleanup Plan). Several undocumented buried waste storage and conveyance structures were also encountered and removed/remediated during this cleanup. The total cost incurred to date for the building abatement, plating waste disposal, demolition, and slab removal and soil remediation at the Main Plating Building area has totaled over \$2.5 million dollars.

The PCB Cleanup Plan also included removal of the building slab and soils associated with the Anodizing Building Area; however, cleanup could not be completed within this area due to funding constraints. Additionally, approximately 400 cubic yards of contaminated soil and concrete (TSCA PCB Remediation Waste and RCRA Hazardous Waste) remain on-site in secured stockpiles pending disposal once funding is available.

Plating Waste Lagoons and Earthen Conveyance Trench - From 1936 to 1976 (pre-RCRA), the Contract Plating Company discharged metal plating wastes through an earthen trench into two unlined lagoons located at the northeastern portion of the site. After use of the lagoons was discontinued and until 1985, four sand sludge drying beds and a waste impoundment lined with asphalt located north of the main plating building were used to manage wastes. After 1985, treated wastewaters were reportedly directed to the Town of Stratford publicly owned treatment works (POTW). The sand drying beds and asphalt lined waste impoundment were closed and capped as a RCRA-regulated landfill in the early 1990s. The pre-RCRA trench and lagoons were covered with soil at some point as an interim protective measure.

Raymark Industries Superfund Cleanup - The EPA is currently managing cleanup activities for the Raymark Industries Superfund site (Raymark) located at 75 East Main Street in Stratford, CT. Part of the cleanup includes consolidating waste that was generated by Raymark and placed at multiple properties across Stratford. Waste consolidation will occur at Operational Unit 4 (OU 4), also known as the Raybestos Memorial Ballfield which abuts the Contract Plating site to the north. EPA estimates that waste soil will be brought to the disposal area on a daily basis and that trucking will take place for multiple years.

Truck access to OU 4 is limited by the Town's existing roadways. To resolve this issue, EPA and the Town have decided that an access road will be constructed through the Contract Plating site. The road will be a permanent feature that will be incorporated into future site re-development. The access road will also serve as a cap covering plating waste located in the earthen trench and one of the lagoons. EPA is currently

constructing the access road and anticipates its completion in the late fall 2020. To facilitate the roadway construction, the Town agreed to remove building slabs, foundations and PCB impacted soils located along the roadway and proposed laydown areas. The current site configuration and access road location are shown on Figure 2.

c. Site Assessment Findings

Numerous environmental documents have been prepared for the site between 1972 and 2012, including a comprehensive Phase I ESA prepared by HRP Associates in August 2012. A review of the 2012 Phase I ESA identified 36 Recognized Environmental Condition (RECs), also known as Areas of Concern (AOCs), each of which are briefly summarized in the table below. Many AOCs are associated with the former plating buildings and operations and have been combined as building areas to simplify remediation planning. Contaminants of concern (COCs) for each AOC are also included in the table below. A site plan showing the site layout and AOCs is included as Figure 3.

Tighe & Bond assessed each of the AOCs identified during a comprehensive Phase II ESA completed in 2016. The purpose of the Phase II ESA was to determine if releases of hazardous substances or petroleum products had occurred within the identified AOCs. Many of these AOCs were further assessed by excavating exploratory test pits during remediation activities completed in 2019. The scope of the Phase II ESA and 2019 test pitting included a sufficient number of soil and groundwater sampling locations and analytical testing determine if a release had likely occurred within each AOC as well as an approximate extent of environmental impacts associated with each AOC. A release determination for each AOC is also provided in the table below.

AOC/ Building Area	Description	COCs	Release Identified
AOC-1	Pre-RCRA Lagoons	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Yes
AOC-2	RCRA Capped Landfill	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Yes
Building Area 1	Main Plating Building and associated AOCs listed below	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	
AOC-3/7	Former Barrel Storage Area/ Former Hazardous Waste Barrel Storage Area		Yes
AOC-4/5	Former ASTs/USTs East of Plating Building		Yes
AOC-6	Former Sawdust Tumblers		Yes
AOC-8	Former Degreaser		Yes
AOC-9	Loading Docks and Shipping/Receiving		Yes
AOC-10	Chemical Storage Area		Potential
AOC-11	Quality Control Laboratory		Potential
AOC-12	Lacquer Room		No
AOC-13a	Plating Building (Main Shop)		Yes



AOC/ Building Area	Description	COCs	Release Identified
AOC-13b	Plating Building Basement		No
AOC-14 AOC-33	Plating Building Exhaust/Potential Roof Drains Generator Room		Potential Yes
AOC-15	Fuel Tank Room	ETPH, PAHs, and VOCs	No
AOC-16	Boiler Room	ETPH, PAHs, and VOCs	No
AOC-17	Transformer House and Outdoor Slab	ETPH and PCBs	Potential
Building Area 2	Former Filter Press/Wastewater Treatment Building and associated AOCs listed below	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	
AOC-18, 19, and 20	Former Filter Press/Wastewater Treatment Building USTs, ASTs, Piping		Yes
AOC-21	Former Gas Pump	ETPH, PAHs, lead, and VOCs	Potential
AOC-22	Former UST Farm	ETPH, PAHs, lead, and VOCs	Potential
AOC-23	Former Hazardous Waste Barrel Storage Area (10/25/1991-onward)	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	No
AOC-35	Equipment/Vehicle Storage Areas	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Potential
AOC-36	Metal Hydroxide Roll-Off	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Potential
Building Area 3	Former Anodizing Building, Rectifier Room, Chemical Storage Warehouse and associated AOCs listed below	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	
AOC-24 AOC-25 AOC-26 AOC-27	Chemical Storage Warehouse Rectifier Room Anodizing Building Anodizing USTs		Potential Yes Yes Yes
AOC-28	Former Septic Systems	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Yes



AOC/ Building Area	Description	COCs	Release Identified
AOC-29	Groundwater Contamination	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Yes, Site Wide
AOC-31	Urban Fill	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Yes, Site Wide
AOC-32	Log/Soil Piles/Lawn Clippings	ETPH, VOCs, SVOCs, PCBs, RCP Metals, and Cyanide	Potential
AOC-34	Hazardous Building Materials (impacted soils at perimeter of buildings)	PCBs, RCP Metals, and Cyanide	Yes
<p>Notes: ETPH – Extractable Total Petroleum Hydrocarbons VOCs - Volatile Organic Hydrocarbons Semi-VOCs – Semi-volatile Organic Hydrocarbons PAHs – Polyaromatic Hydrocarbons PCBs – Polychlorinated Biphenyls RCP Metals – Metals listed in the CT Reasonable Confidence Protocols AOCs reported as having potential releases also contain contaminate fill material or may have been impacted by other nearby AOCs.</p>			

Receptor Survey - Tighe & Bond completed a Water Supply Well Receptor Survey in March 2017. For the purpose of this report, a receptor is defined as a residential or commercial potable well that is in use. The receptor survey is intended to determine the extent of public water service within 500-feet of the site and identify those properties where groundwater supply wells may still be in-use. The results of the survey indicate that the properties within a 500-foot radius of the site are served by public water. This is based on the following information:

- Public water supply is available throughout the area of the 500-foot buffer.
- Indications of public water supply e.g. fire hydrants and water shutoff valves were observed during windshield surveys on each street within the search radius.
- All property locations submitted to Aquarion were customers, except for the three vacant properties listed in the next bullet.
- Public water supplies could not be verified and private wells maybe present at the following three properties. However, these properties are vacant and undeveloped and public water is available to these locations through Aquarion Water.
 - 0 and 100 Frog Pond Lane
 - 0 Lafayette Street
- Water Supply well survey information prepared by EPA for the adjacent Raymark Superfund site also supports the conclusion that the site and surrounding area is services by public water.



d. Project Goal

Contract Plating is zoned for light-industrial use, and is directly adjacent to a densely populated residential area and a TOD zone that is included in Stratford's Complete Streets development plan which focuses on dense, mixed-use development that encourages local entrepreneurship and job creation, a plan that has received extensive public feedback and support. The location is a "blank slate" that will make an ideal property for a variety of business types to occupy it.

A light industrial site use will create jobs and increase the tax base, facilitating economic growth not only around the site, but also within Stratford as a whole, including the Opportunity Zone that is designated in Census Tract 804.

The fact that the site would require a new building(s) also presents the opportunity to build modern, energy-efficient buildings using sustainable construction methods. The green buildings can incorporate small-scale renewable energy generation, such as solar power, with incentives provided by the Connecticut Green Bank. Sustainable construction and solar panels align with the Town's goal of reducing carbon emissions and increasing renewable energy use.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility

The Site is regulated under the Resource Conservation and Recovery Act (RCRA) Corrective Action Program (CAP). The property may also be enrolled in the CTDEEP Voluntary Remediation Program (VRP) under Connecticut General Statutes (CGS) 22a-133x at a later date to facilitate cleanup Verification in accordance with the RSRs by a Licensed Environmental Professional (LEP).

PCBs have also been released to on-site concrete building slabs and soil. Materials contaminated with PCBs by the release of PCBs from source materials ≥ 50 ppm are considered PCB-remediation waste as defined in 40 CFR 761. Due to the presence of PCB-remediation waste, the Site is regulated under the Toxic Substances Control Act (TSCA) as well as requirements of Connecticut General Statute (CGS) 22a-463 through -469 (CT PCB Statute).

b. Cleanup Standards for Major Contaminants

The site is subject to the Sections 22a-133k-1 through 3 of the Regulations of Connecticut State Agencies (RCSA), otherwise known as the Remediation Standard Regulations (RSRs). CTDEEP's intent in developing the RSRs was to define the following:

- Minimum remediation performance standards
- Specific numeric clean-up criteria
- A process for establishing alternative site-specific standards, if warranted

In general, RSR criteria are used to remediate contaminated environmental media (i.e., soils and groundwater). RSR criteria are not specifically applicable to building interiors and sediment.

The RSRs apply to efforts to remediate contaminated soil, surface water, soil vapors, or a groundwater plume at or emanating from a release area or AOC, provided that the remedial action is required by the following:

- CGS Chapter 445 (Hazardous Waste, Section 22a -134, the Connecticut Transfer Act) or Chapter 446K (Water Pollution Control); Chapter 446d section 22a-208a(c)(2) (unpermitted solid waste landfill); or

- Relevant subsections of CGS 22a-133 (Voluntary Clean-up) including but not limited to, any such action required to be taken or verified by a Licensed Environmental Professional, except as otherwise provided in the regulations.

The site is enrolled in the RCRA Corrective Action Program; as such, the RSRs apply to the assessment and remediation work conducted at the site.

The RSRs contain cleanup criteria for both residential and industrial/commercial settings. The cleanup criteria for remediation at the site will be industrial/commercial as the Project Goal does not include residential development.

The Site is also subject to TSCA PCB cleanup standards as defined in 40 CFR 761.

c. Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, CTDEEP RSRs (RCSA 22a-133k), CT Significant Environmental Hazard Program (CGS 22a-6u), CTDEEP Underground Storage Tank Regulations (RCSA 22a-449), TSCA (40 CFR 761), and Town of Stratford by-laws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed.

In addition, all appropriate permits (e.g. call-before-you-dig, soil transport/disposal manifests) will be obtained prior to the work commencing.

III. Evaluation of Cleanup Alternatives

Three separate Remedial Areas (RA) are being considered as part of this ABCA. The Town considers cleanup of each area to be a high priority and necessary for the long-term protection of human health and the environment. The three RAs include the following which are shown on Figure 2:

- RA-1: Contaminated soil and concrete was stockpiled at the site during previous remediation work for future disposal once funding becomes available.
- RA-2: Contaminated concrete slab and soil remediation at and adjacent to the Anodizing Building Area.
- RA-3: Pre-RCRA Lagoons

a. Cleanup Alternatives Considered

Based on the results of previous environmental investigations and cleanup actions conducted at the site, the following three cleanup alternatives were considered to address contamination identified at RA-1, 2, and 3.

- Alternative #1: No Action
- Alternative #2: Capping
- Alternative #3: Excavation with Off-Site Disposal

b. Cost Estimate of Cleanup Alternatives

To satisfy EPA requirements, the effectiveness, implementability, and cost of each alternative was considered prior to selecting a recommended cleanup alternative for each RA, as discussed below.

Effectiveness

- Alternative #1: No Action is not effective in controlling or preventing exposure for receptors to contamination identified at RA-1, 2, or 3.

- Alternative #2: Capping is an effective way to prevent receptors from coming into direct contact with contaminated materials at each RA.
- Alternative #3: Excavation with Off-Site Disposal is an effective way to eliminate risk at each of the three RAs, since contamination will be removed and the exposure pathways will no longer exist.

Implementability

- Alternative #1: No Action is easy to implement since no actions will be conducted.
- Alternative #2: Capping is easy to implement and can be achieved by covering contaminated materials with clean soil, parking lots, or buildings. Capping at RA-2 and RA-3 will also require the preparation and submittal of Risk-Based PCB Cleanup Plan for EPA approval, Environmental Land Use and Deed Restrictions. An Engineered Control Variance request and posting of a surety to CTDEEP may also be required depending on the type and construction details of the cap. Monitoring and maintenance of the cap will also require periodic coordination and reporting.

This alternative can easily be implemented for RA-3 which is in a low-lying part of the site and is amenable to filling. Filling RA-3 would also result in a level ground surface suitable for re-development. Additionally, approximately half of the total lagoon area has already been capped by EPA with the roadway and cul-de-sac constructed to access OU-4 of the Raymark Superfund site.

Capping would also be effective in controlling exposure risks at RA-2 following the demolition and disposal of the contaminated concrete slabs. However, capping may not be a viable long-term option for RA-2 because contaminated soils are located in the top few feet of the ground surface. Capping RA-2 would require extensive grading and raising the ground elevation at a part of the site that is already higher than most of the surrounding area, which may make this area less available for re-development. RA-2 is also located within close proximity the residential neighborhood to the west of the site.

Contaminated material located at RA-1 material has already been removed from its location of origin and cannot be reused, buried, or capped on site without EPA/TSCA and CTDEEP approval, which is not likely.

- Alternative #3: Excavation with Off-Site Disposal is moderately difficult to implement. This alternative includes, soil excavation, slab demolition (RA-2), dust suppression and monitoring, waste management and disposal, and backfilling and compaction. Execution of these activities will result in a short-term disturbance to the community (e.g. truck traffic and noise). However, long-term monitoring and maintenance will not be required following excavation and offsite disposal.

Alternative #3 can most easily be implemented at RA-1 and RA-2 because the contaminated materials are located in stockpiles (RA-1) or within the top few feet of the ground surface, making them readily accessible using standard excavating equipment. This alternative would be significantly more difficult to implement at RA-3 because the contaminated soil and plating sludge is located up to 12 feet below the ground surface and would

require excavation and management of approximately 12,000 cubic yards of contaminated soil and plating sludge.

Cost

- There will be no costs under Alternative #1: No Action.
- The anticipated cost for implementing Alternative #2 are listed below for each RA.
 - RA-1 – Capping costs would be minimal for RA-1; however, this alternative would not likely be approved by EPA and/or CTDEEP.
 - RA-2 – Capping costs would be lower than those associated with Alternative #3 but would likely total over \$150,000 and would not result in removal of the contaminated material. Additionally, the contaminated building slabs would need to be removed and disposed and the area significantly graded in order to re-develop this area.
 - RA-3 – The anticipated capping cost for RA-3 is between \$150,000 and \$250,000. This cost will likely be reduced through the beneficial reuse of mildly polluted excess soil generated at another Town project. Reuse of this soil has been approved by CTDEEP.
- The anticipated cost for implementing Alternative #3 are listed below for each RA.
 - RA-1 – The anticipated cost for disposal of the waste at RA-1 is \$200,000.
 - RA-2 – The anticipated cost to remove and dispose of the contaminated building slab is \$200,000. Costs to excavate and dispose of the underlying and adjacent soils is \$120,000.
 - RA-3 – The anticipated cost to excavate and dispose of all contaminated soil and plating sludge at RA-3 is between \$500,000 and \$1,000,000.

c. Recommended Cleanup Alternatives

Alternative #3 is recommended for RA-1 and RA-2. Alternative #1 cannot be recommended because No Action is not protective of human health and the environment. Alternative #2 cannot be recommended for RA-1 because State and Federal regulations would not likely allow for this waste material to be capped on site. Alternative #2 is not recommended as the sole option for RA-2 because implementation is not significantly less expensive than complete removal and would greatly hinder re-development of this part of the site.

Alternative #2 is recommended for RA-3 because it is the most cost-effective means to render the contaminated soil and plating sludge inaccessible. Capping RA-2 will also result in a level ground surface that can easily be incorporated into future site re-development. Alternative #1 cannot be recommended because No Action is not protective of human health and the environment. Alternative #3 is not recommended because excavation and off-site disposal is cost prohibitive and would not result in a substantially lower exposure risk than capping will achieve.

The following cleanup activities are listed in the order in which plan the Town plans to complete the work. This order has been selected to maximize the benefit of the Town's

resources and to most greatly reduce the risk of exposure to contaminated materials at the site.

1. Remove and legally dispose of contaminated soil and concrete stockpiled within RA-1. The anticipated cost is \$200,000.
2. Demolish and legally dispose of contaminated concrete slabs within RA-2. The anticipated cost is \$200,000.
3. Excavate and legally dispose of as much of the contaminated soil located within RA-2 as funding allows. Remaining soils will be left in place and covered with geotextile fabric and temporarily capped with clean soil or asphalt millings provided by the Town.
4. Cap RA-3 by beneficially reusing polluted soil from another Town project, as has been approved by CT DEEP. Compacted asphalt millings will also be provided by and installed by the Town at their own cost to achieve the twenty percent cost match required by EPA, should the cleanup grant be awarded.

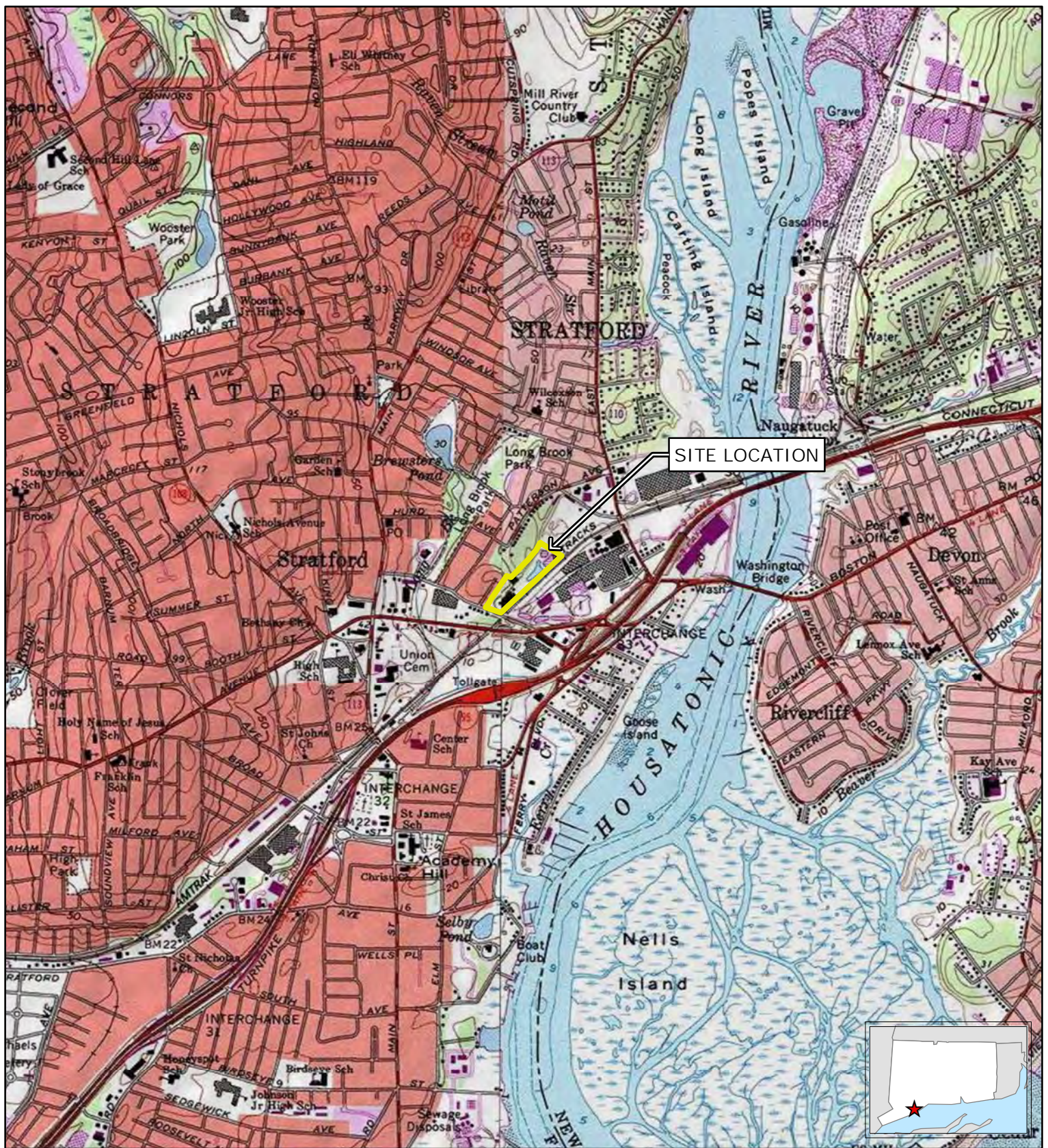
If you have any questions or comments, please contact Harley Langford at 860 704-4781 or halangford@tighebond.com or Jim Olsen at (860) 704-4761 or jtolson@tighebond.com.

Very truly yours,
TIGHE & BOND, INC.


Harley Langford, LEP
Project Manager

James T. Olsen, PG, LEP
Vice President

Enclosures Figure 1 – Site Location Map
 Figure 2 – Site Aerial Photograph
 Figure 3 – UST Location and Soil Exceedances



Legend

 Approximate Site Boundary

Tighe & Bond
 Engineers | Environmental Specialists

Based on USGS Topographic Map for
 Milford and Bridgeport, CT
 Contour Interval Equals 10ft.
 Circles indicate 500-foot and half-mile radii

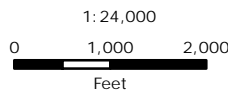







FIGURE 1
SITE LOCATION MAP

540 Longbrook Avenue
 Stratford, Connecticut

March 2018

FIGURE 2
SITE PLAN

LEGEND

-  Proposed EPA Road
-  Approximate Site Boundary
-  Approximate Parcel Boundary
-  Main Building Area
-  Anodizing Building Area

LOCUS MAP



0 55 110
Feet

Map Scale: 1 " = 110 '

NOTES

Source:
Ortho Base Map: State of Connecticut 2012 aerial imagery with 1-ft ground resolution provided by CTECO
GIS data layers displayed on this map were obtained from CTDEEP's data library (<http://www.ct.gov/deep>).

540 LONGBROOK AVE
STRATFORD, CONNECTICUT

Map Date:
March
2018



FIGURE
2

