Watershed Contaminated Source Document

Stratford Army Engine Plant
Stratford, Connecticut

July 2011

1.0 Introduction

The purpose of this report is to document potential sources of sediment contamination in the lower Housatonic River upstream of the Stratford Army Engine Plant (SAEP). The SAEP Stewardship Permit identifies RCRA corrective action requirements for offsite contamination in the Tidal Flats sediment adjacent to the SAEP. Corrective action includes development of preliminary remediation goals and a remedial action plan (RAP) for sediment in the Tidal Flats. The Tidal Flats are identified as Area of Concern (AOC) 24, Outfall-007 and the associated Tidal Flats and AOC 52 Outfalls-001 through -006 and the associated Tidal Flats.

1.1 Purpose

Identification of sources of sediment contamination was conducted to qualitatively evaluate the potential non-Army contamination on the Tidal Flats. The main purpose of the evaluation is to collect information to assist in determining the Army's clean up responsibility in the Tidal Flats.

The identification of sources of contamination is necessary to determine if the potential exists for contribution of contaminants from upstream and to assess the benefits of conducting a response action in an area that could be contaminated in the future by other sources. The evaluation is not intended to identify responsible parties rather to collect information to develop an understanding of the potential for contribution of contamination from upstream sources.

1.2 Scope

The scope of work included the following;

- Provide a description of the Tidal Flats along with the types and distribution of contaminants in sediment and dilution and dispersion patterns.

- Review state databases to identify non-Army contamination in the river that may have or could impact sediments in the Tidal Flats. A map of the segment of the river included in this evaluation is shown in Figure 1-1.

- Conduct an internet and file search of studies related to contaminated sediments in the lower Housatonic River. Summarize key findings of sediment studies.

- Prepare a map showing the location of possible sources of sediment contamination in the Housatonic River.

2.0 General Setting

2.1 Lower Housatonic River

The lower end of the Housatonic River from the mouth at Milford, Connecticut upstream to Derby, Connecticut was included in the evaluation. The Housatonic River at Derby, Connecticut is the northern extent of the tidally affected portion of the river. Derby is also the location of the first dam on the Housatonic River constructed in 1870. In this lower segment of the river are tidal wetlands and salt marshes.

The lower portion of the Naugatuck River, a major tributary to the Housatonic River, is also included in the evaluation. The Naugatuck River drains into the Housatonic River in Derby. Towns along the lower Housatonic and Naugatuck Rivers are Stratford, Milford, Orange, Derby and Ansonia.

Portions of the Housatonic and Naugatuck Rivers became industrialized by the mid 1800s. Industries along these rivers have included metal finishing, metals plating, brass making, tool and textile manufacturing, rubber manufacturing, chemical synthesis, plastics manufacturing and power generation. Sewage treatment plant discharges for the towns of Stratford, Milford, Derby and Ansonia are also located along the river.

2.2 Description of the Tidal Flats Adjacent to SAEP

The Tidal Flats are classified by the United States Fish and Wildlife Service (USFWS) as estuarine and marine wetlands (USFWS, 2005). The Tidal Flats cover about 40 acres of fine-grained sediments exposed twice daily during low tide. They are mostly unvegetated with the northwest portion supporting limited emergent vegetation.

A Causeway extends from the upland of SAEP to the river channel and divides the Tidal Flats into two coves. The Causeway was constructed over the Tidal Flats in 1929 to provide access to the river channel. A stone jetty in northern portion of Tidal Flats extends to the river channel and was built in 1932 to divert effluent from the Stratford Sewerage Treatment Plant. A map of the Tidal Flats is shown on Figure 2-1.

Storm water on the SAEP drains to a series of six pump houses located along the shoreline and flood control dike. Storm water is pumped from each of the six pump houses to an oil abatement treatment plant. Treated storm water is then discharged from Outfall 007. The discharge empties into the main channel of the Housatonic River through the Tidal Flats.

Outfalls are also located at each of the six receiving pump houses. These outfalls, designated 001 – 006, are intended for emergency discharge of storm water only. Occasionally, during heavy rain events, the amount of water entering the pump houses exceeds the pumping capacity and storm water is diverted via abort pumps. The seven outfalls are shown on Figure 2-2 through 2-10.

The oil abatement treatment plant was constructed to remove oil and grease and suspended solids from the storm water. When SAEP was operating oils were generated during manufacturing and storm water treatment was required. During this operational period SAEP operated under a National Pollution Discharge Elimination System (NPDES) permit. SAEP currently operates under a general discharge permit. The oil abatement treatment plant and discharge from Outfall 007 will be terminated by July 2011 since no oils are generated at the site. The reconfigured storm water system will allow for direct discharge from the six pump houses through Outfalls 001 - 006.

2.3 Contaminant Distribution in Tidal Flats

Sediment samples were collected throughout the Tidal Flats from the upper 6 inch depth interval and at deeper intervals at some locations. In general, contaminants were detected in the upper 6 inches of sediment compared to deeper intervals. Contaminants detected include copper, zinc, mercury, nickel, chromium, lead, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs).

Concentration contours were prepared to illustrate the distribution and gradient of contaminants in the Tidal Flats. The contour intervals exceeding ecological benchmarks are shaded. The ecological benchmarks used are the National Oceanographic and Atmospheric Administration (NOAA) Effects Range Median (ERM) values. Above the ERM level is considered toxic, since adverse effects to organisms occurred in more than 75 percent of studies in which concentrations exceeded the respective ERM values (NOAA, 1999). Concentration contours for each contaminant are shown in Figures 2-2 through 2-10.

The distribution of copper in the Tidal Flats sediment is shown on Figure 2-2. An area of copper concentrations above 1,000 milligrams per kilogram (mg/kg) is located in the northwest corner of the Tidal Flats approximately 300 feet from the shoreline. Copper concentrations decrease toward the southeast and the shoreline of the SAEP. Mercury concentration contours in the Tidal Flats show a similar pattern to copper and are shown on Figure 2-3.

Zinc and lead show a similar pattern in sediment as shown on Figures 2-4 and 2-5. The highest concentrations of these metals are in the northwest corner of the Tidal Flats with decreasing concentration towards the shoreline.

The distribution of nickel and silver differs as shown on Figure 2-6 and 2-7. For these metals the highest concentrations were detected in the vicinity of the shoreline with decreasing concentrations towards the river channel. There is no obvious distribution pattern for chromium as shown on Figure 2-8.

Total PCBs and PAHs were detected in the majority of shallow sediment samples collected from the Tidal Flats. The distribution of total PCBs is shown in Figure 2-9. The highest concentrations (130 mg/kg) are located along the shoreline near storm water Outfalls 002 and 003. Concentrations of PCBs attenuate to 1 mg/kg with increasing distance from the shoreline. PAHs were detected in shallow sediment with the highest concentrations in the southern portion of the Tidal Flats south of the Causeway (Figure 2-10).

The surficial (0-0.5 feet) sediment samples have higher concentrations of PCBs, PAHs and metals compared to deeper sample intervals. PCBs were elevated in deeper sediment only along the shoreline near Outfalls 002 and 003 where the highest surficial levels were found.

Discharges from SAEP

A review of SAEP files indicates the following discharges to the Tidal Flats from Outfall 007.

- On May 8, 1978, 25-30 lbs of chromic acid was spilled and most flushed to a storm drain. About 500,000 gallons of diluted acid was intercepted in the drain and pumped to a holding tank. The remaining acid was pumped to the Chemical Waste Treatment Plant. Acid that was not intercepted or contained was discharged from Outfall 007. Chromium

concentrations from Outfall 007 were measured at 30 milligrams per liter (mg/l) on May 8, 1978 and at 2.5 mg/l on May 10, 1978.

- In August 1978, CTDEP was informed by SAEP that a yellow plume with a pH of 2.9 and 64 parts per million of hexavalent chromium was extending 200 yards from Outfall 007 into the Housatonic River.

- On July 29, 1979, 75 gallons of oil sludge from the Oil Abatement Treatment Plant bypassed clogged skimmers and discharged from Outfall 007.

- On October 29, 1981, 20 gallons of fluorescent metal penetrant, a dye used for non-destructive inspection of metal parts, was spilled into a storm drain and discharged from Outfall –007.

2.4 Dilution and Dispersion Patterns in the Tidal Flats

In order to determine discharge concentrations associated with Outfall 007, two dye studies were conducted in 1988. The dye studies evaluated the dispersal area and dilution rate into the surrounding Tidal Flats and Housatonic River. The result indicated that at high tide the effluent is diluted in the Tidal Flats with exception of the area immediately adjacent to Outfall 007. The concentration isopleths are shown on Figure 2-11a. At low tide a rivulet controls flow over the Tidal Flats from Outfall 007. The location of the rivulet is shown on Figure 2-11b.

3.0 Potential Sources of Contamination in Lower Housatonic River

3.1 Database Review

The Leachate and Wastewater Discharge Inventory is a database generated by the Connecticut Department of Environmental Protection (CTDEP) that locates surface water discharges and waste sites in river basins in Connecticut. The data layer includes 1) locations of surface water discharges that have either received discharge permits or 2) historic and now defunct waste sites or 3) locations of spill or releases of liquid or solid waste.

A complete list and map of the leachate and wastewater discharges in the lower Housatonic River basin is included in Appendix A. Wastewater discharges located in the river basin include current and historic metals plating and finishing facilities, sewerage treatment plant discharges, cooling water discharges, settling lagoons and process waters.

Figure 3-1 is a map showing only the discharges and waste associated with metals plating, finishing and disposal. As shown, twenty-one metals related discharges and waste sites were identified in the lower the Housatonic River Depending on the type of facility, wastewater from metals finishing may contain chromium, copper, zinc, nickel and iron. Some of the historic discharges are associated with the Raymark Industries site, Contract Plating, Sikorsky Aircraft, Auto Swage and Chromium Process.

Hazardous waste disposal sites including CERCLA and RCRA facilities and other sites are also located in the lower Housatonic River. Immediately upstream of SAEP on the Housatonic River is the Beacon Point Landfill (No. 73), the Raymark Industries disposal site (No. 45) and the Stratford Water Pollution Control Facility (No. 146).

Based on a review of the Raymark Industries site, several sediment investigation areas were conducted in the Housatonic River associated with Operable Unit 9 (TetraTech, 2000a, 2000b). Sediment sampling results indicate the presence of PCBs, PAHs, metals (including copper, zinc, nickel, chromium, mercury and silver) and asbestos immediately upstream of the Tidal Flats adjacent to SAEP.

Chromium, mercury, nickel were detected at the Raymark disposal site at similar concentration ranges compared to the Tidal Flats samples. Copper and zinc were detected at a higher maximum concentration compared to the Tidal Flats.

Three PCB Aroclors (1248, 1254, and 1260) identified in the Tidal Flats were all detected in upstream sediment but at lower frequencies. Aroclor 1248 was detected in 71 percent of samples from the Tidal Flats and in 2 percent of samples from the upstream areas. Aroclor 1254 was detected in 53 percent of samples from the Tidal Flats and in 7 percent of samples from upstream areas. Aroclor 1260 was detected in 74 percent of samples from the Tidal Flats and in 6 percent of samples from upstream.

3.2 Sediment Studies in the Lower Housatonic River

A review of sediment sampling events and studies was conducted to identify potential sources of contamination in the lower Housatonic River. Four sediment studies were identified. The sampling studies and the key findings are summarized below.

The Distribution of Mercury in Sediment from Long Island Sound and Surrounding Marshes, Coastal and Marine Geology Program of the U.S. Geological Survey and the Department of Earth and Environmental Sciences at Wesleyan University

- Sediment cores were collected from marsh deposits in Connecticut estuaries. One sediment core was collected from Nells Island in the Housatonic River estuary upstream of the SAEP. The sample location at Nells Island is shown on Figure 3-2.

- Sediment from the Nells Island core sample had the highest concentrations of mercury compared to other estuary sediment samples along the Connecticut coast. The maximum concentration of mercury was 1.5 parts per million (ppm) at a depth of 15 cm (approx. 6 inches). This sample depth with the maximum concentration of mercury was estimated to correlate with sediment deposited at Nells Island around 1970.

- Copper and zinc concentrations in the sediment from the Nells Island were elevated. A maximum copper concentration of 1,157 ppm was detected at a depth of 20 cm.

- According to the study, the analytical data suggests that the high levels of mercury, copper and zinc in the marsh sediments at Nells Island may have been deposited with sediments originating upstream.

Metals Contamination in Sediments from the Housatonic River Watershed, Zierzow, Tabitha R., Varekamp, Johan C., Earth & Environmental Sciences, Wesleyan University, U.S. Geological Survey Coastal and Marine Program, Woods Hole, MA

- Sediment core samples were collected from the Housatonic River estuary and analyzed for metals. Metals concentrations (Cu, Zn, Cr, Cd, Co, Ni, Pb and Hg) in the Housatonic River estuary were higher compared to other coastal marshes in Connecticut.

- Maximum concentrations of metals were Cu 8400 ppm, Zn 2200 ppm, Ni 470 ppm and Hg 15 ppm. These metals, with exception of mercury, were attributed to historic discharges into the Naugatuck River. Mercury was attributed to the hat making industry in Danbury.

- Sediment deposits in the estuary were surmised to include sediments deposited during major Housatonic River flood events that occurred between 1890-1905, mid 1950s, and from 1970-1980.

Metals Concentrations in the Sediment of the Lower Housatonic River, Joshua Conklin, Southern Connecticut State University, December 2008

- Thirty-one shallow sediment samples were collected from the lower Housatonic River and analyzed for metals including copper and zinc and particle size, and TOC (Figure 3-2 shows the sample locations).

- Different grain sizes were identified in sediment. Coarse grained sediment was typically associated with the river channel samples. Fine grained sediments were typically associated with coves and protected areas of the river.

- Sediment samples showed elevated levels of copper and zinc with significant variability over short distances. The variability was attributable to sediment particle size and organic content.

- Concentrations of copper and zinc in sediment correlated well with elevated levels organic carbon and fine grained silt content. The grain size and organic content affect the amount of metals that adhere to the surface of the grains.

Housatonic River Sediment Sampling, Fuss & O'Neil, March 2007

- Twenty-three sediment samples were collected from the lower Housatonic River navigation channel in Stratford to assess the suitability of reuse. Samples were analyzed for PAHs, PCBs, metals and TOC.

- The samples were low in organic carbon content compared to marsh sample locations and generally had low levels of contaminants.

- Metals including copper, zinc, nickel and chromium were detected at low concentrations compared to samples outside the navigation channel collected in marsh deposits.

- PCBs were not detected and PAHs were either not detected or detected infrequently at low concentrations compared to samples in marsh deposits.

- Results of this sampling were consistent with others that indicate low levels on contaminants in coarse grained samples collected from the river channel

4.0 Conclusions

Based upon the information in this document the following observations can be made.

1. Two patterns of contaminant distribution exist in the Tidal Flats sediment. One pattern indicates contaminants are decreasing with increasing distrance from the shoreline. Contaminants with this pattern are PCBs, PAHs, nickel and silver. A second pattern indicates contaminant concentrations increase with increasing distance from the shoreline. Contaminants with this pattern are copper, zinc, mercury and lead.

2. Historic wastewater discharges associated with metals plating and metals finishing were located throughout the lower Housatonic River. Hazardous waste disposal sites including CERCLA and RCRA facilities and other sites are also located in the lower Housatonic River.

3. The results of sediment studies indicate that a correlation exists between the sediment grain size and organic content and contaminant concentrations. The grain size and organic content affect the amount of metals that adhere to the surface of the grains. Finer grained sediment typically is associated with higher concentrations of metals

4. Copper was detected at higher concentrations compared to the Tidal Flats in sediment across the river at Nells Island and immediately upstream of SAEP

5. Sampling studies conducted by others indicate multiple source of organic and metals contamination in the river upstream of SAEP Tidal Flats. One study suggests that sediments in the Housatonic River are transported downstream during periods of major flood events.

5.0 References

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TetraTech, 2000a. Draft Final Area II Remedial Investigation, Raymark-Ferry Creek - Operable Unit 3, Vol. I: Stratford, Connecticut.

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USEPA, 1995. Determination of Background Concentrations of Inorganics in Soils and Sediments at Hazardous Waste Sites, EPA/540/S-96/500.

U.S. Geological Survey and the Coastal and Marine Geology Program of the Department of Earth and Environmental Sciences at Wesleyan University, The Distribution of Mercury in Sediment from Long Island Sound and Surrounding Marshes.

Zierzow, Tabitha R., Varekamp, Johan C., Earth & Environmental Sciences, Wesleyan University, U.S. Geological Survey Coastal and Marine Program, Woods Hole, MA, Metals Contamination in Sediments from the Housatonic River Watershed

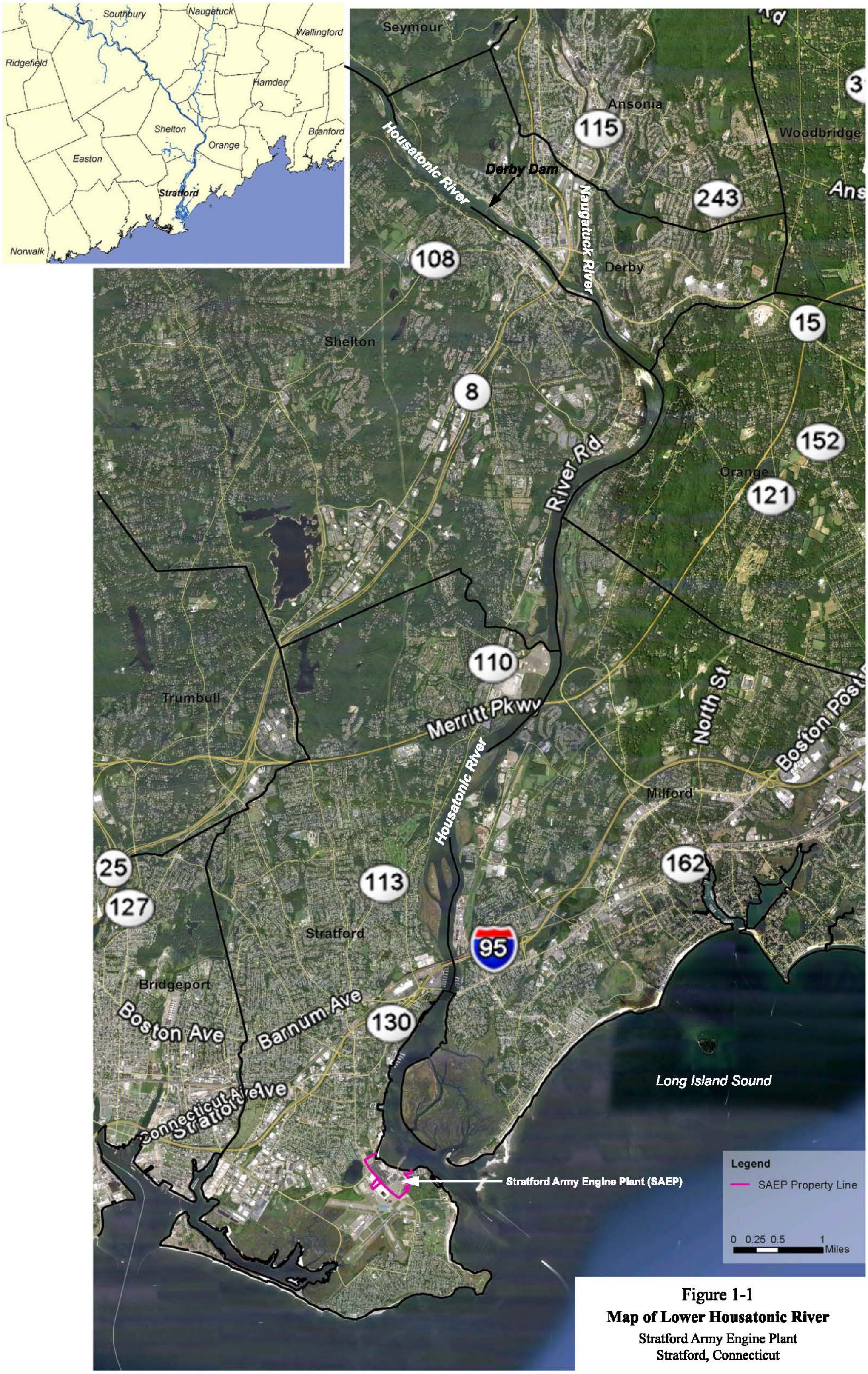
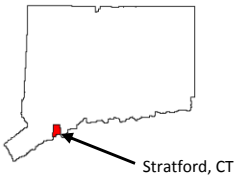


Figure 1-1

Map of Lower Housatonic River

Stratford Army Engine Plant
Stratford, Connecticut



Legend

Stratford Army Engine Plant Boundary Line

1000′ 0 2000′

Scale: 1” = 2000′ (approx.)

Figure 2-1

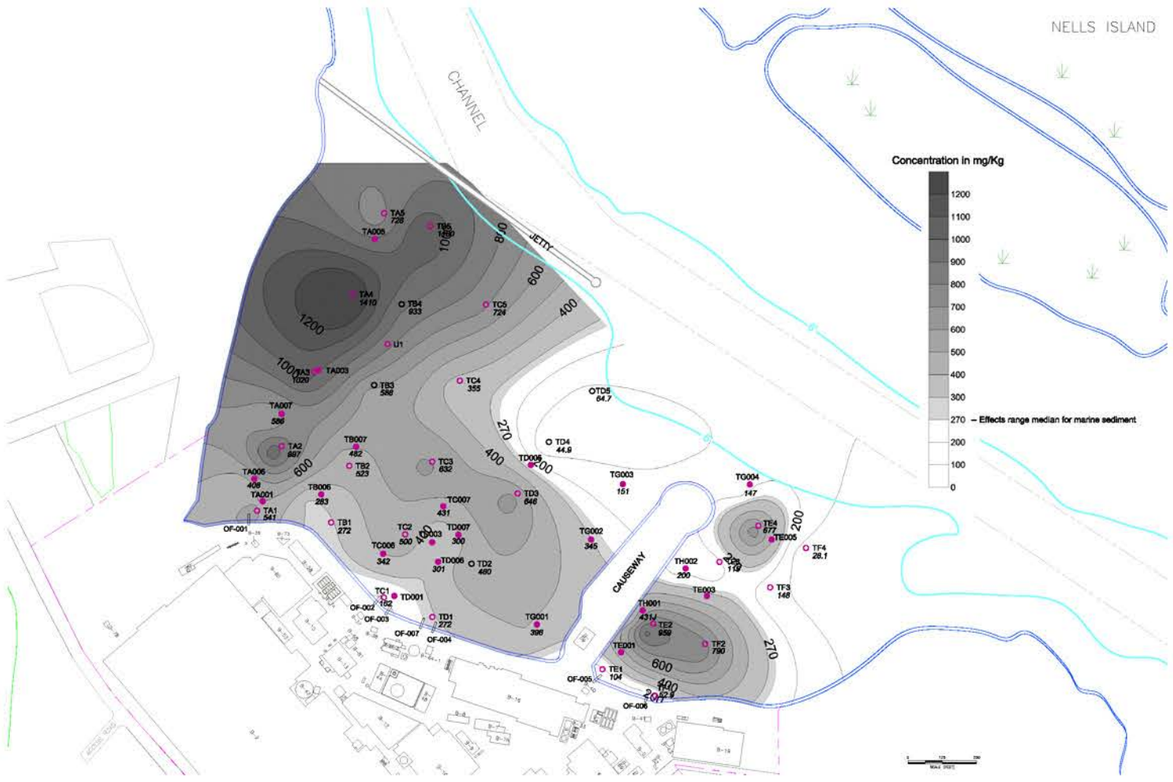
Map of Tidal Flats Adjacent to Housatonic River

Stratford Army Engine Plant
Stratford, Connecticut

Prepared by: Anderson-Mulholland & Assoc.

LEGEND

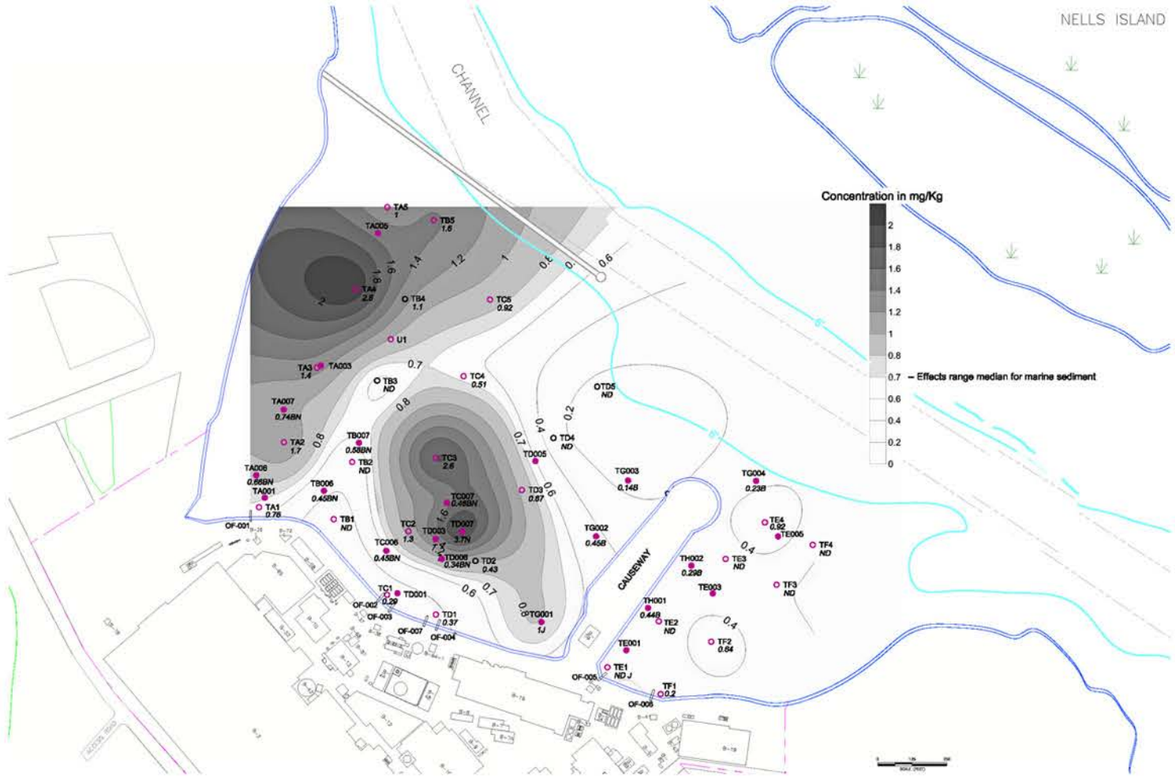
- TA5 — Sediment Sample 1994
- TA005 — Sediment Sample 1999
- 98.1 — Concentration in milligrams per kilogram (mg/Kg)
- Water Depth Contour in feet below mean sea level
- SAEP Property Line
- OF-001 — Stormwater Outfall



COPPER CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-2



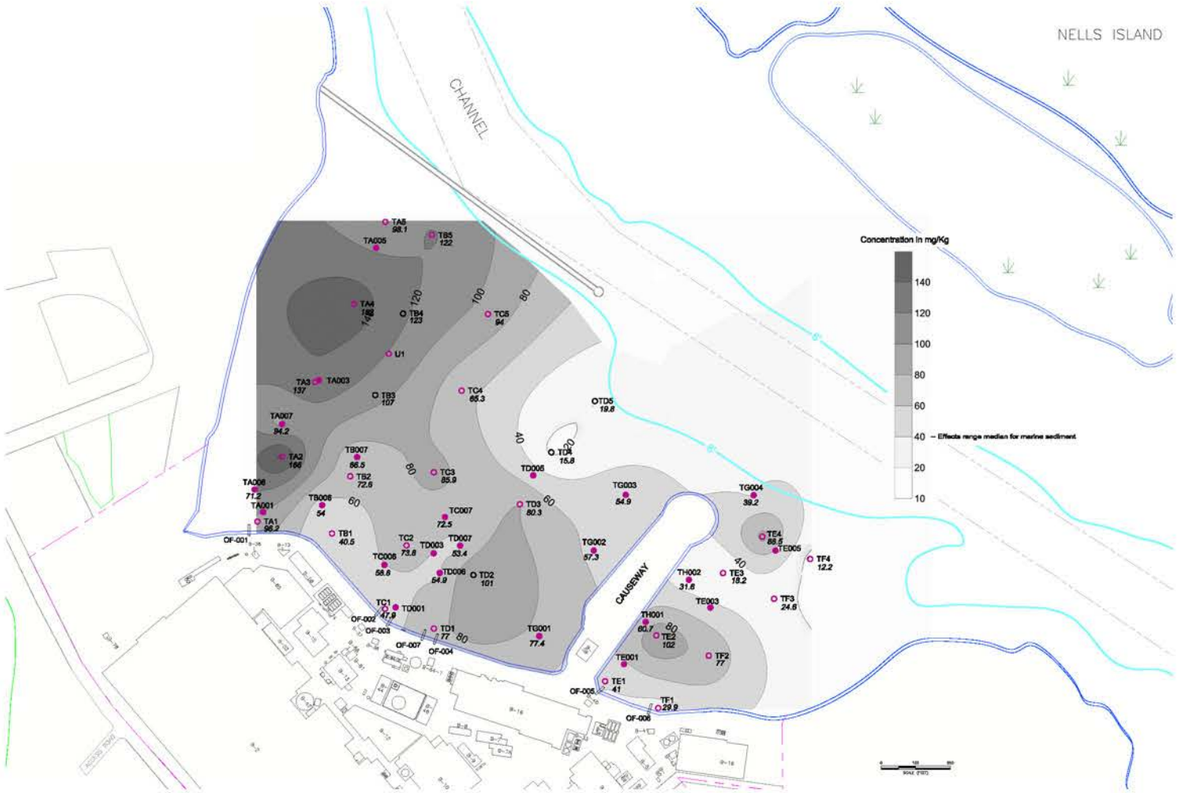
MERCURY CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-3

LEGEND

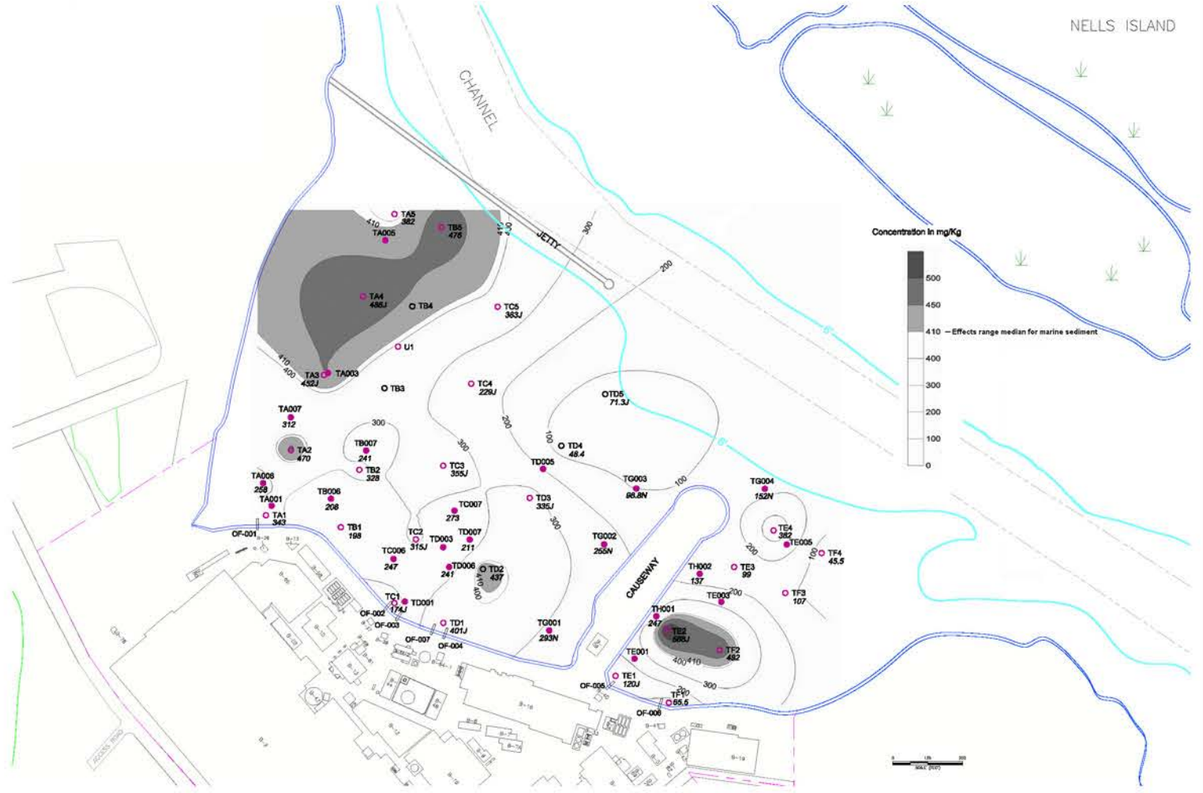
- TA5 — Sediment Sample 1994
- TA005 — Sediment Sample 1999
- *98.1* — Concentration in milligrams per kilogram (mg/Kg)
- Water Depth Contour in feet below mean sea level
- SAEP Property Line
- OF-001 — Stormwater Outfall



LEAD CONCENTRATIONS IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-4



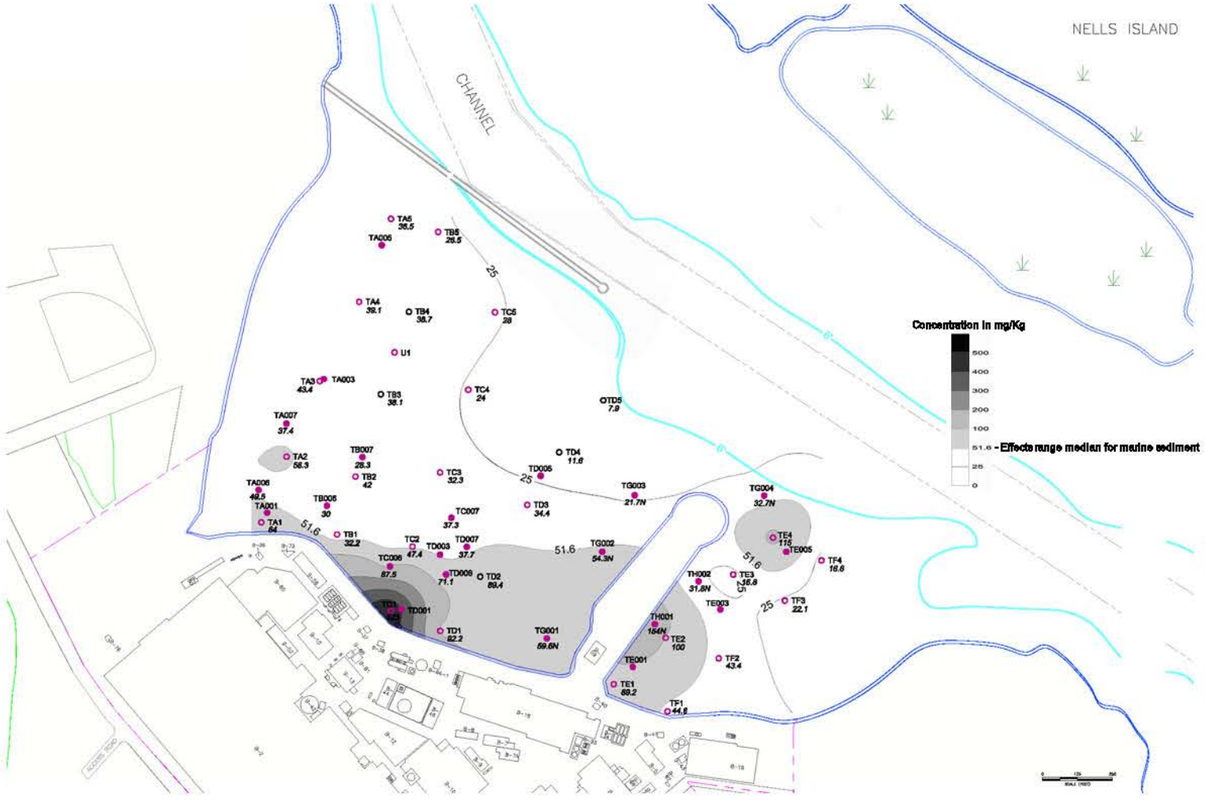
ZINC CONCENTRATIONS IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-5

LEGEND

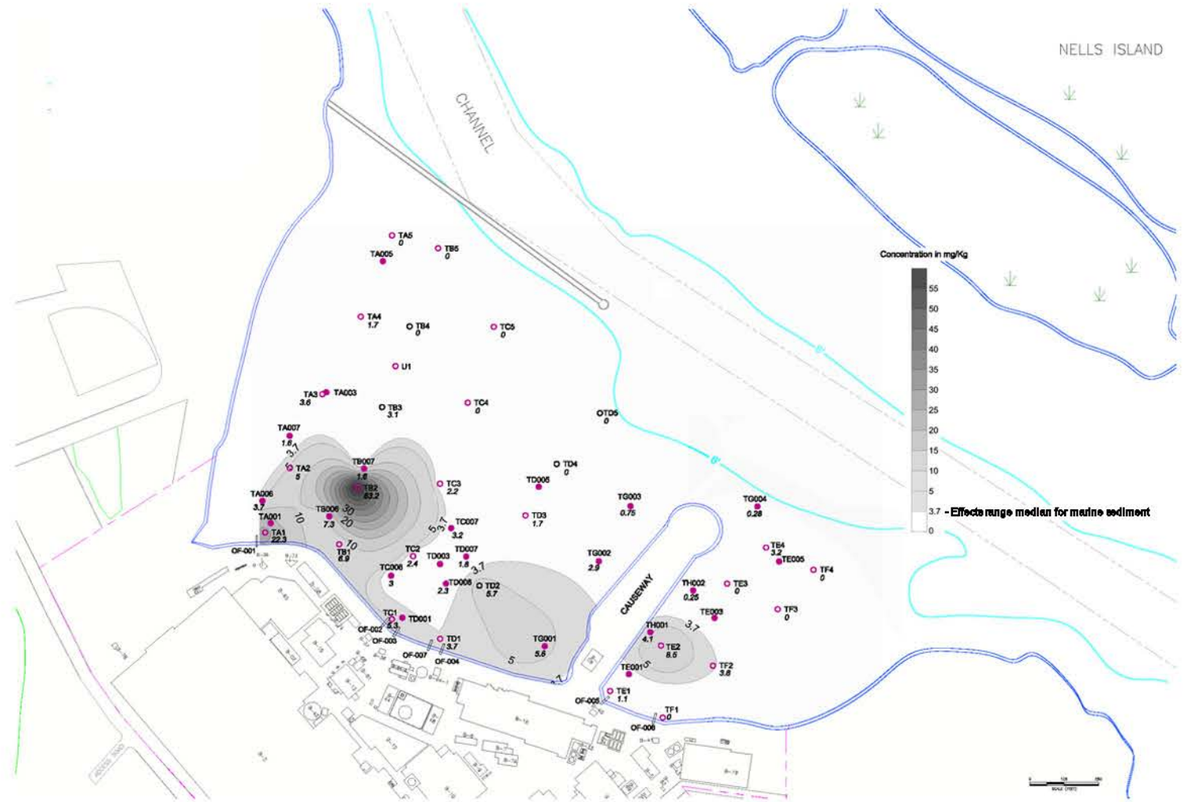
- TA5 — Sediment Sample 1994
- TA005 — Sediment Sample 1999
- *98.1* — Concentration in milligrams per kilogram (mg/Kg)
- Water Depth Contour in feet below mean sea level
- SAEP Property Line
- OF-001 — Stormwater Outfall



NICKEL CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-6



SILVER CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-7

LEGEND

TA5 — Sediment Sample 1994

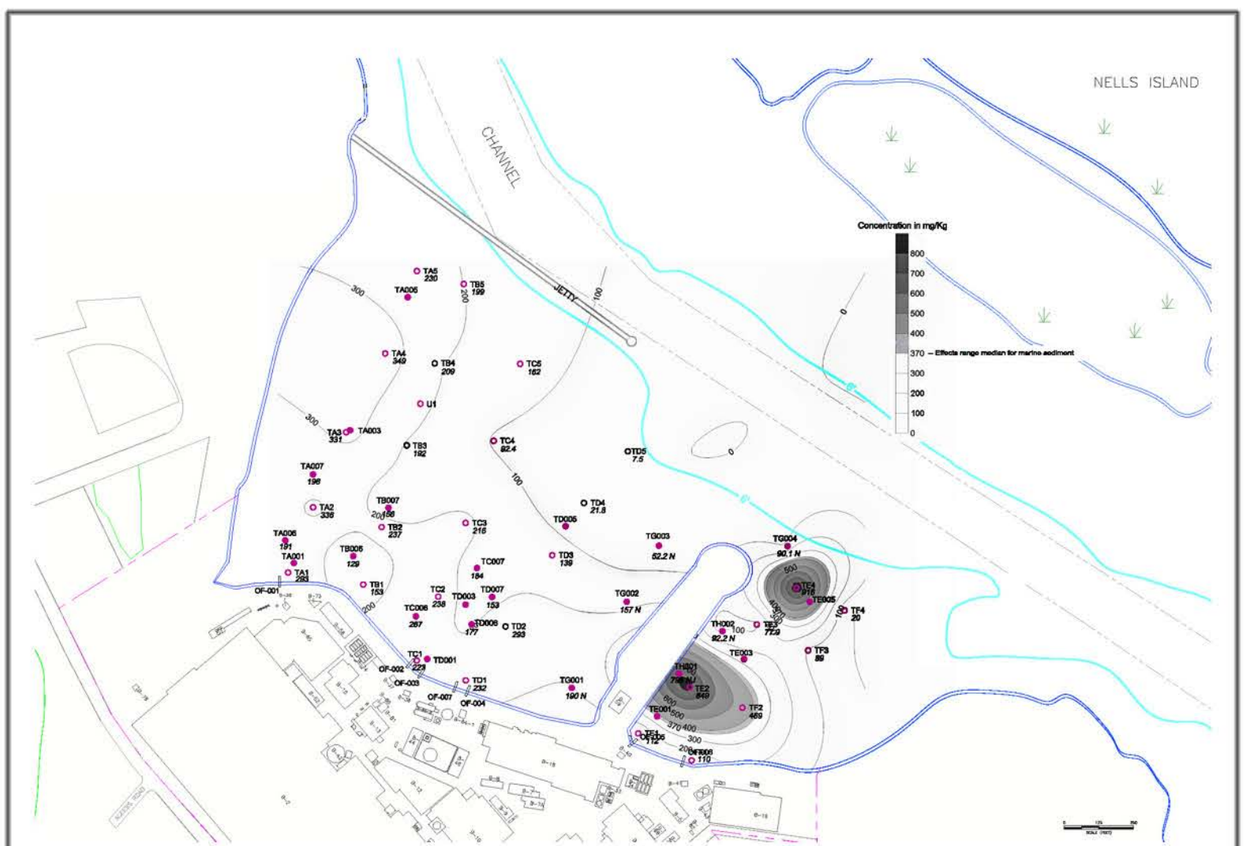
TA005 — Sediment Sample 1999

98.1 — Concentration in milligrams per kilogram (mg/Kg)

Water Depth Contour in feet below mean sea level

SAEP Property Line

OF-001 — Stormwater Outfall



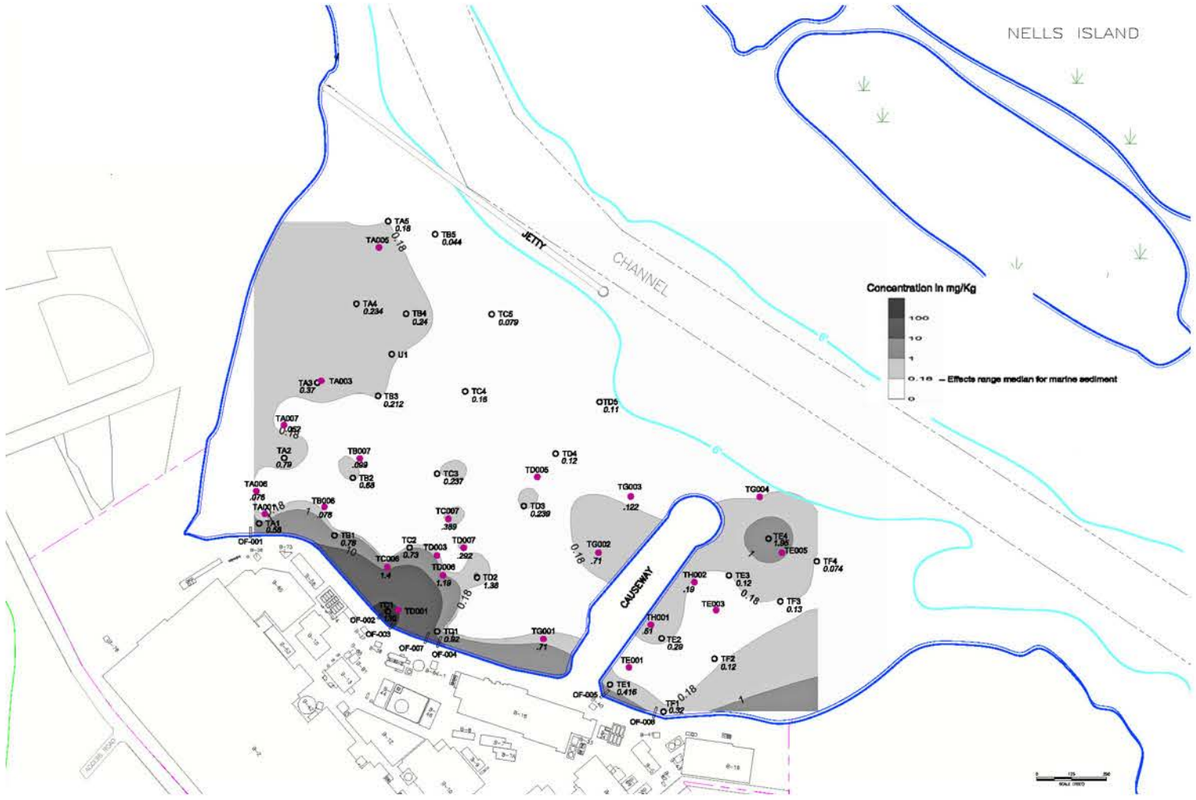
CHROMIUM CONCENTRATIONS IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-8

LEGEND

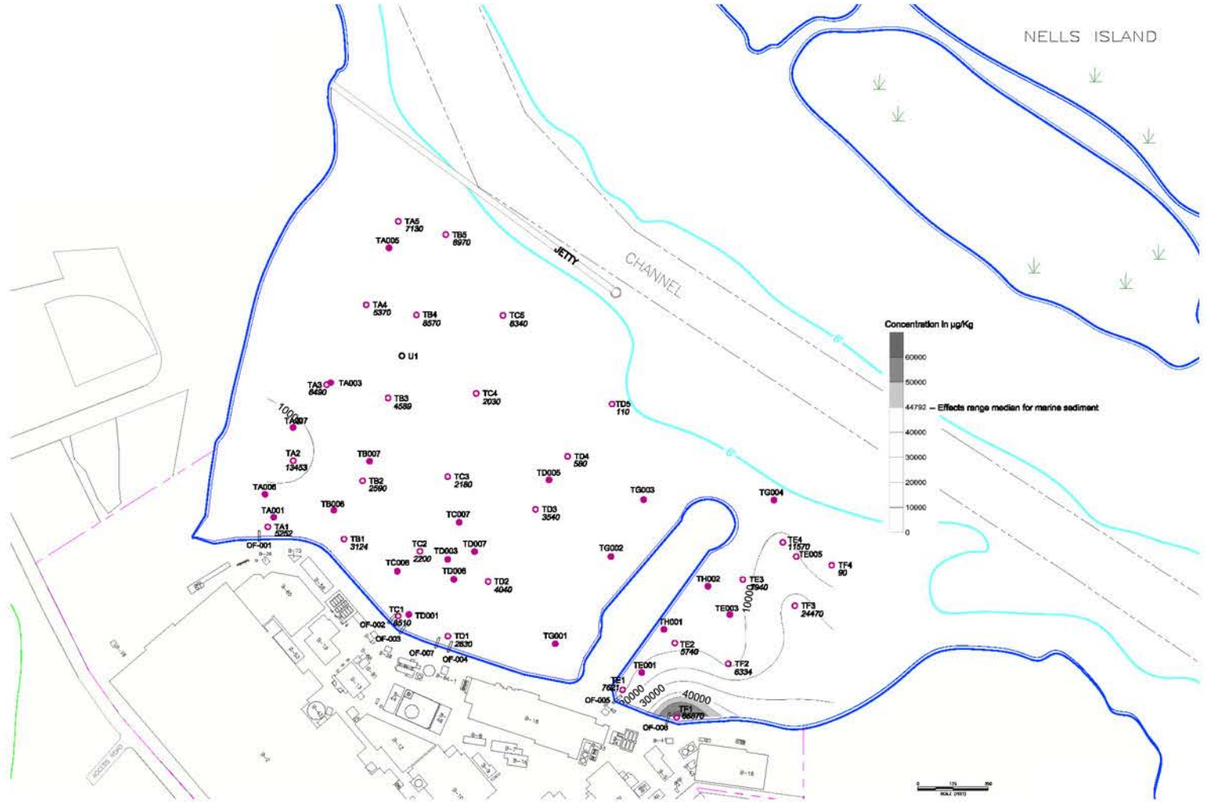
- TA5 — Sediment Sample 1994
- TA005 — Sediment Sample 1999
- *98.1* — Concentration in milligrams per kilogram (mg/Kg)
- Water Depth Contour in feet below mean sea level
- SAEP Property Line
- OF-001 — Stormwater Outfall



TOTAL PCB CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-9



TOTAL PAH CONCENTRATIONS
IN SEDIMENT (0 - .5')

STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

Figure 2-10

Figure 2-11a
High Tide Dye Concentration

Figure 2-11b
Low Tide Effluent Path

Leavenworth Rd
Housatonic River
Derby Dam
147
5
74
11
13
118
Naugatuck River
115
Woodbridge
243
108
Derby
Shelton
15
8
River Rd
17
152
Orange
121
18
19
20
110
86
21
Merritt Pkwy
Trumbull
North St
Boston Post
Housatonic River
Milford
25
23
25
162
113
127
Stratford
95
Bridgeport
30
29
94
95
Boston Ave
Barnum Ave
130
99
100
Connecticut Ave
Stratford Ave
45
Long Island Sound
Stratford Army Engine Plant (SAEP)

Legend

SAEP Property Line

17 Metal Plating and Metal Finishing Facility

0 0.25 0.5 1 Miles

Figure 3-1

Map of Metals Plating and Metals Finishing Facilities and Discharge Locations

Stratford Army Engine Plant
Stratford, Connecticut

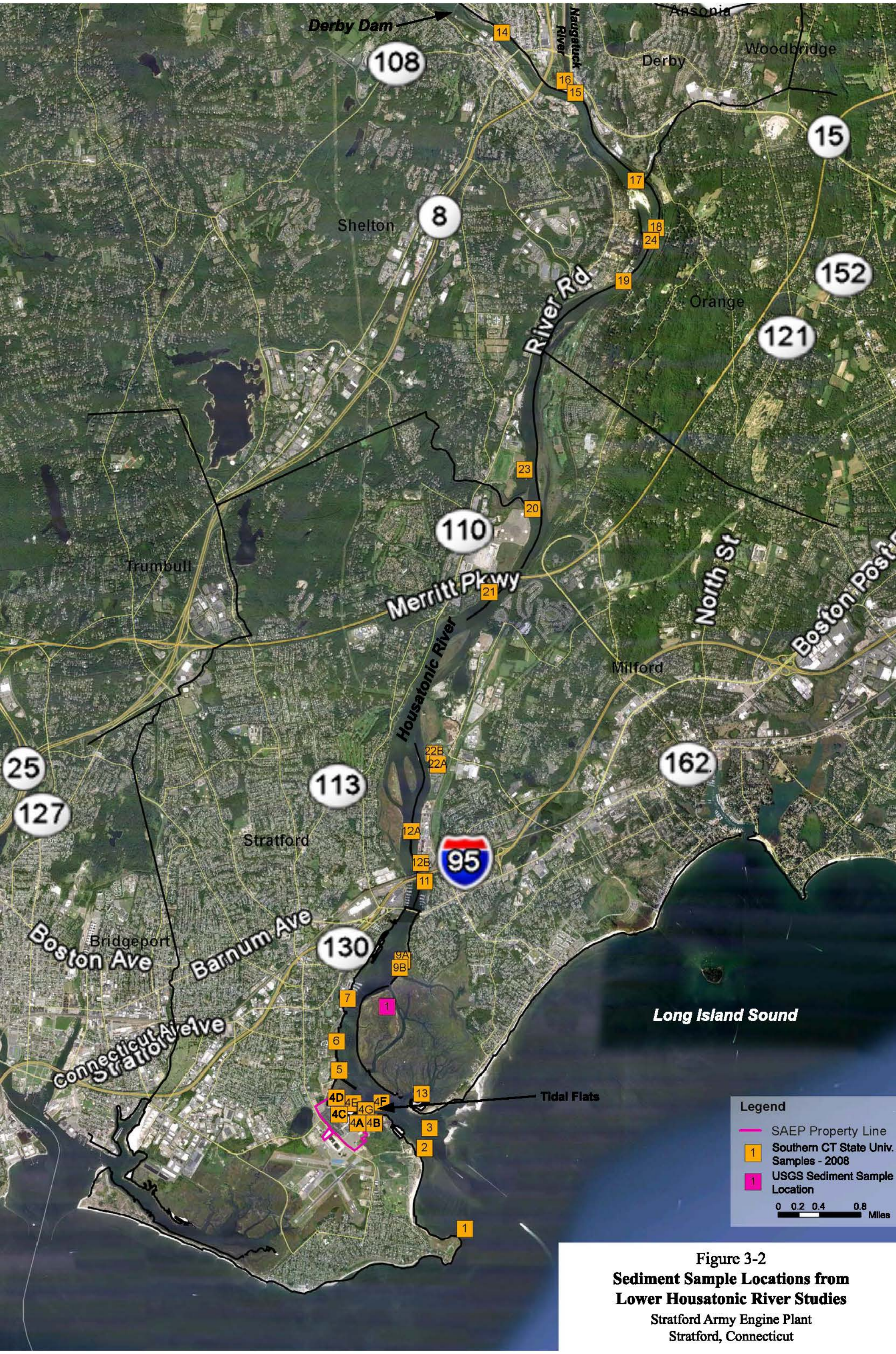
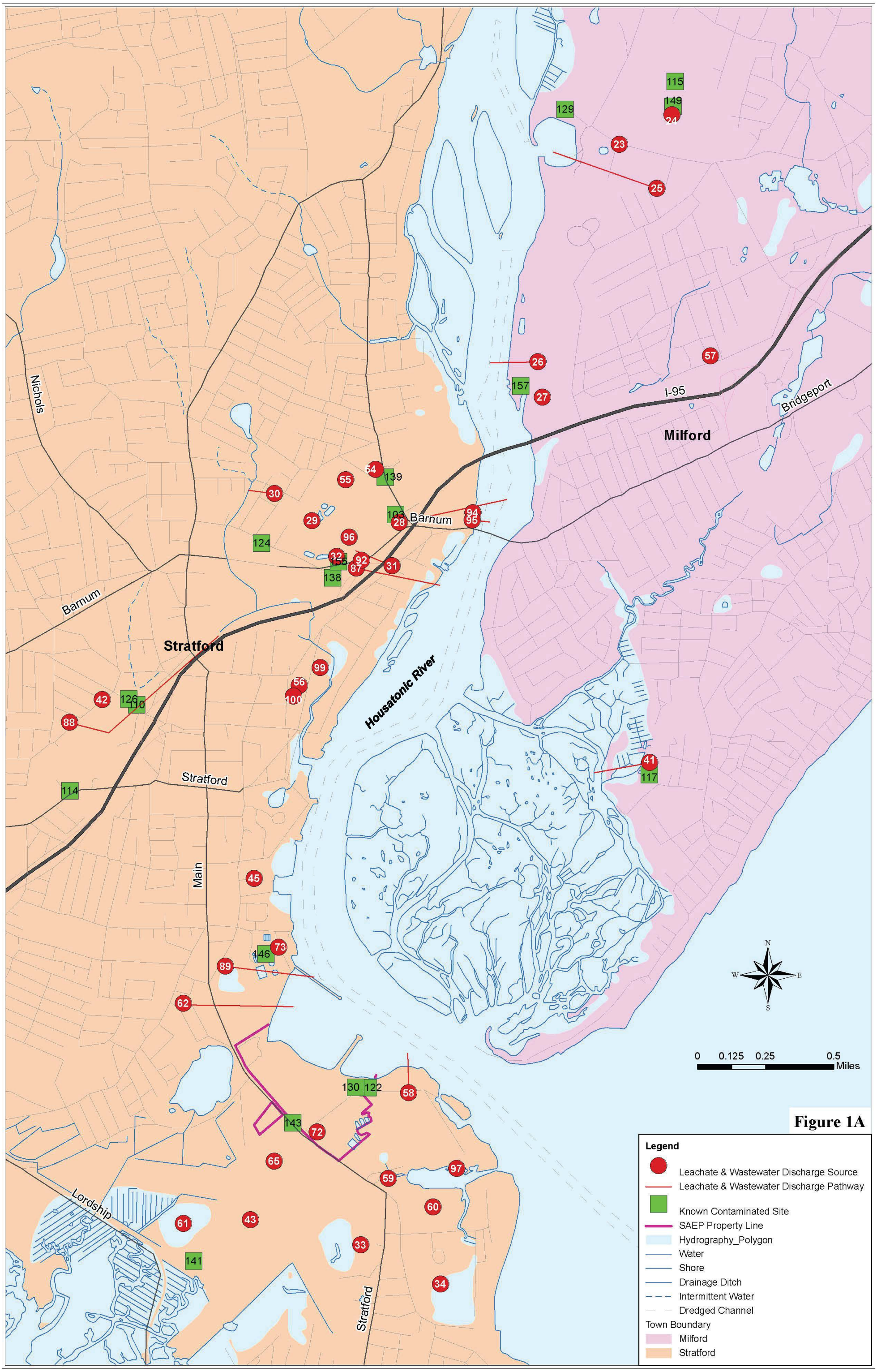


Figure 3-2
Sediment Sample Locations from Lower Housatonic River Studies
Stratford Army Engine Plant
Stratford, Connecticut

Appendix A

Map of Leachate and Wastewater Discharges in Lower Housatonic River Watershed



Source: Bureau of Water Management, CT DEP

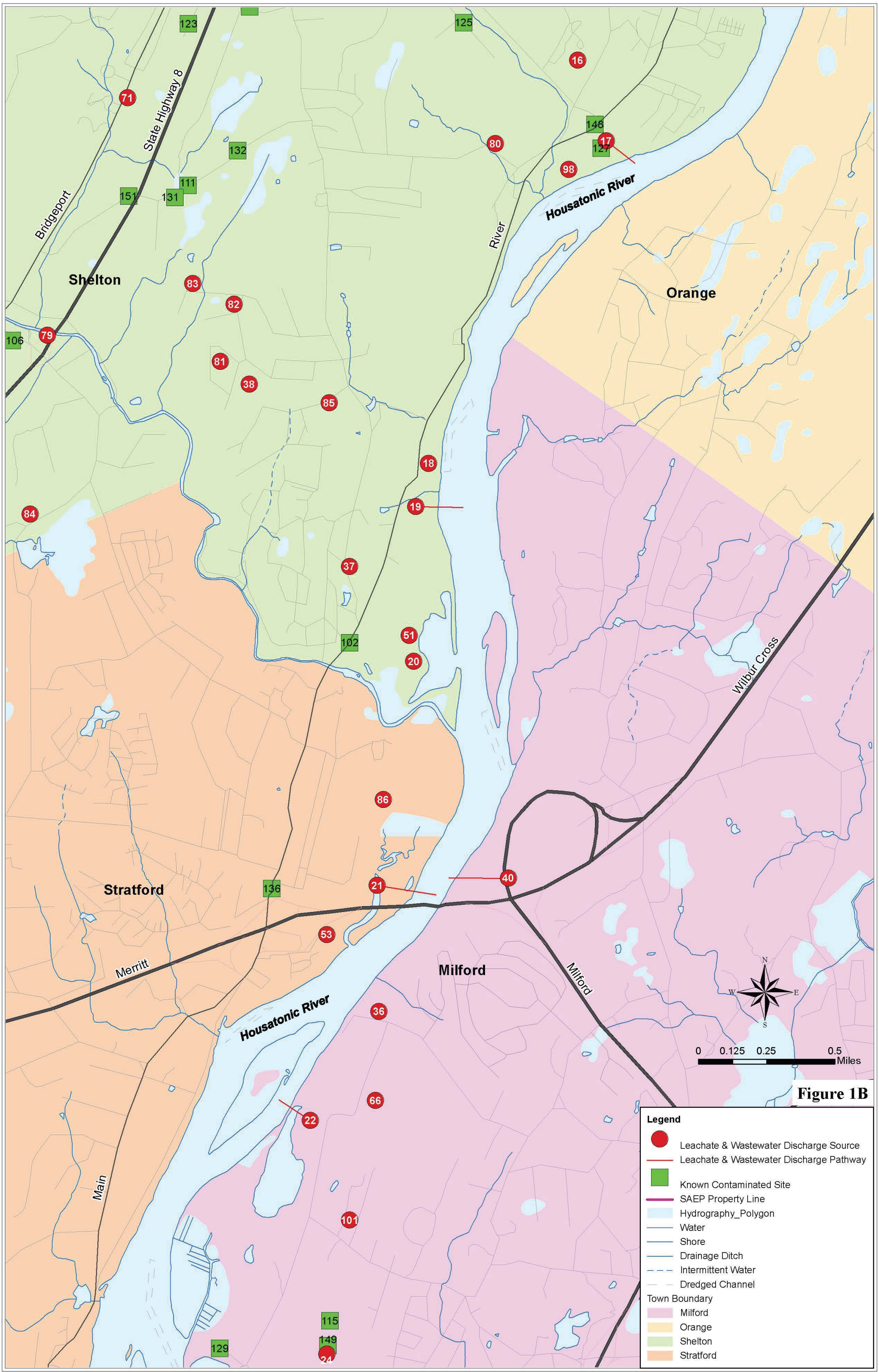


Figure 1B

Source: Bureau of Water Management, CT DEP

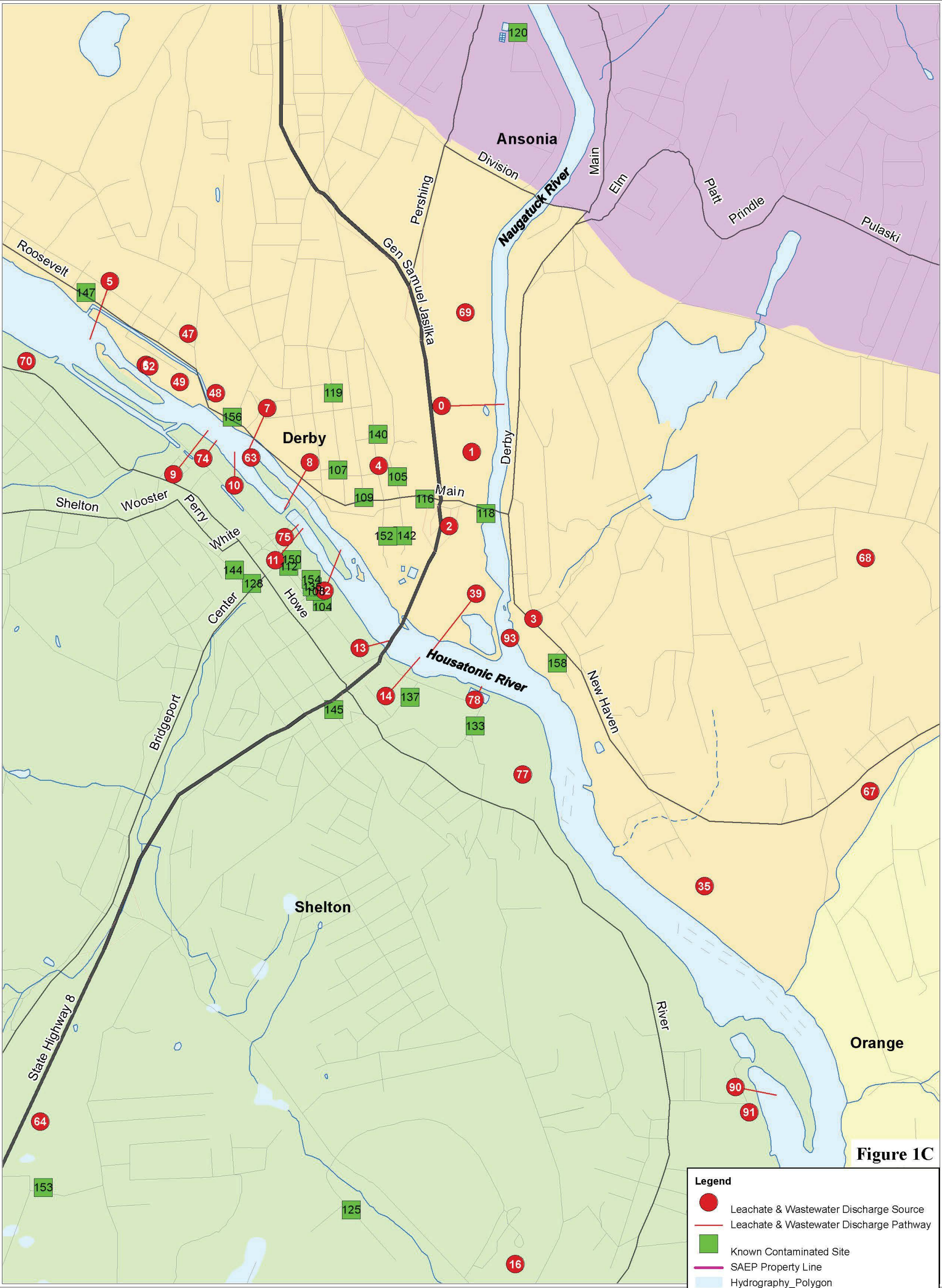


Figure 1C

Legend

- Leachate & Wastewater Discharge Source
- Leachate & Wastewater Discharge Pathway
- Known Contaminated Site
- SAEP Property Line
- Hydrography_Polygon
- Water
- Shore
- Drainage Ditch
- Intermittent Water
- Dredged Channel

Town Boundary

- Ansonia
- Derby
- Orange
- Shelton

Source: Bureau of Water Management, CT DEP

Seymour
State Highway 8
Naugatuck River
Maple
Great Hill
Fountain Lake
Wakelee
Franklin
Gen Samuel Jasilka
Ansonia
Maple
Main
Bridge
Derby
Pershing
Division
Elm
Platt
Prindle
Derby
Roosevelt
Shelton
169
172
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Figure 1D

Legend

- Known Contaminated Site
- Leachate & Wastewater Discharge Source
- Leachate & Wastewater Discharge Pathway
- SAEP Property Line
- Hydrography_Polygon
- Water
- Shore
- Drainage Ditch
- Intermittent Water
- Dredged Channel

Town Boundary

- Ansonia
- Derby
- Orange
- Seymour
- Shelton

N
W
E
S

0 0.125 0.25 0.5 Miles

Source: Bureau of Water Management, CT DEP

ID	AV_LEGEND	LWDS_NO	LWACTIVE	LWFLOW	SBAS_NO	NAME	LWNAME	DESCRIPTION
0	BACKWASH	6900112	INACTIVE	SURFACE	6900	Beard Sand & Gravel	BACKWASH WATER	former discharge of sand washing waters
1	SALT	6900113	ACTIVE	GROUND	6900	Derby	SALT STORAGE	salt storage
2	FAILSEPTIC	6900114	INACTIVE	GROUND	6900	Derby	FAILING SEPTIC SYS	raw sewage overflows
3	SPILL	6900116	INACTIVE	GROUND	6900	Kasden-Derby Energy	OIL/CHEMICAL SPILLS	#2 fuel oil leak
4	SPILL	6900117	INACTIVE	GROUND	6900	Mobil Station	OIL/CHEMICAL SPILLS	200 gallons gasoline spilled
5	INDUST WTR	6000040	ACTIVE	SURFACE	6000	Bassett Co.	INDUSTRIAL WASTEWTR	metal finishing discharge
6	INDUST WTR	6000043	INACTIVE	SURFACE	6000	Sponge Rubber Products	INDUSTRIAL WASTEWTR	former industrial site - now burned out
7	COOL WTR-S	6000045	ACTIVE	SURFACE	6000	Manger Die Castings	COOLING WTR -SURFACE	cooling water discharge
8	COOL WTR-S	6000046	ACTIVE	SURFACE	6000	Gordon Rubber Co.	COOLING WTR -SURFACE	cooling water discharge
9	COOL WTR-S	6000048	ACTIVE	SURFACE	6000	Apex Tool & Die	COOLING WTR -SURFACE	cooling water discharge
10	COOL WTR-S	6000049	ACTIVE	SURFACE	6000	Shelton Plastics	COOLING WTR -SURFACE	cooling water discharge
11	INDUST WTR	6000051	ACTIVE	SURFACE	6000	Chromium Process	INDUSTRIAL WASTEWTR	metal finishing discharge
12	COOL WTR-S	6000052	ACTIVE	SURFACE	6000	Latex Foam	COOLING WTR -SURFACE	cooling water discharge
13	INDUST WTR	6000054	ACTIVE	SURFACE	6000	Samarius	INDUSTRIAL WASTEWTR	metal finishing discharge
14	COOL WTR-S	6000055	ACTIVE	SURFACE	6000	Arrow Rubber	COOLING WTR -SURFACE	cooling water discharge
15	CONTM WELL	6000059	ACTIVE	GROUND	6000	Belleview Dr.	CONTAMINATED WELL	wells contaminated by solvents from landfill
16	SEWAGE PLT	6000063	INACTIVE	SURFACE	6000	Laurel Heights Sanitarium	SEWAGE TREAT PLANT	Former STP
17	COOL&INDUS	6000064	ACTIVE	SURFACE	6000	United Shoe Machinery	COOLING/IND DISCHRG	combined metal finishing & cooling water discharge
18	INDUST PIT	6000066	ACTIVE	GROUND	6000	Auto Swage	INDUSTRIAL PIT	metal hydroxide sludge lagoon
19	INDUST WTR	6000067	ACTIVE	SURFACE	6000	Auto Swage	INDUSTRIAL WASTEWTR	metal finishing discharge
20	INDUST PIT	6000069	ACTIVE	GROUND	6000	Raybestos	INDUSTRIAL PIT	metal hydroxide & iron sludge lagoons
21	COOL&INDUS	6000071	ACTIVE	SURFACE	6000	Sikorsky Aircraft	COOLING/IND DISCHRG	combined metal finishing & cooling water discharge
22	COOL WTR-S	6000075	ACTIVE	SURFACE	6000	Southern CT Gas	COOLING WTR -SURFACE	cooling water discharge
23	INDUST PIT	6000077	ACTIVE	GROUND	6000	BIC Co.	INDUSTRIAL PIT	metal sludge lagoons
24	IND/MF WTR	6000078	INACTIVE	GROUND	6000	Northeast Electronics	IND/MFG WASTEWTR DIS	metal finishing discharge redirected to sewer
25	INDUST WTR	6000079	INACTIVE	SURFACE	6000	BIC Co.	INDUSTRIAL WASTEWTR	industrial discharge redirected to sewer
26	COOL&INDUS	6000080	ACTIVE	SURFACE	6000	CL&P	COOLING/IND DISCHRG	COMBINED COOLING & INDUSTRIAL DISCHARGE
27	INDUST PIT	6000081	ACTIVE	GROUND	6000	CL&P	INDUSTRIAL PIT	flyash lagoon
28	COOL WTR-S	6000088	ACTIVE	SURFACE	6000	Reynolds Aluminum	COOLING WTR -SURFACE	cooling water discharge
29	INDUST PIT	6000090	ACTIVE	GROUND	6000	Contract Plating	INDUSTRIAL PIT	metal hydroxide sludge beds
30	INDUST WTR	6000091	INACTIVE	SURFACE	6000	Contract Plating	INDUSTRIAL WASTEWTR	metal finishing discharge redirected to sewer
31	INDUST WTR	6000092	ACTIVE	SURFACE	6000	Raybestos	INDUSTRIAL WASTEWTR	industrial discharge to lagoons
32	INDUST PIT	6000093	ACTIVE	GROUND	6000	Raybestos	INDUSTRIAL PIT	asbestos/lead/phenols settling lagoons
33	SPILL	6000099	INACTIVE	GROUND	6000	Avco Lycoming	OIL/CHEMICAL SPILLS	spill of 6000 gallons JP5 fuel
34	LANDFILL	6000102	ACTIVE	GROUND	6000	Raybestos	LANDFILL	active industrial waste landfill
35	SPILL	6000105	INACTIVE	GROUND	6000	Derby Oil	OIL/CHEMICAL SPILLS	spill of 100 gallons #2 fuel oil (Derby)
36	CONTM WELL	6000107	ACTIVE	GROUND	6000		CONTAMINATED WELL	Private well contaminated with solvents (Milford)
37	FAILSEPTIC	6025004	INACTIVE	GROUND	6025		FAILING SEPTIC SYS	Widespread subsurface sewage system failures
38	CONTM WELL	6025006	ACTIVE	GROUND	6025	Lynn Terrace	CONTAMINATED WELL	domestic wells contaminated with hydrocarbons
39	SEWAGE PLT	6900115	ACTIVE	SURFACE	6900	Derby	SEWAGE TREAT PLANT	STP with discharge to Basin 6000
40	SEWAGE PLT	6000073	ACTIVE	SURFACE	6000	Equitable Life	SEWAGE TREAT PLANT	STP
41	SEWAGE PLT	6000083	ACTIVE	SURFACE	6000	Milford	SEWAGE TREAT PLANT	Beaver Brook STP
42	SALT	7101001	ACTIVE	GROUND	7101	Stratford	SALT STORAGE	salt storage
43	SPILL	7101005	INACTIVE	GROUND	7101		OIL/CHEMICAL SPILLS	Gasoline spill at airport tower
44	MISC -SURF	6000110	ACTIVE	SURFACE	6000	Remington Arms - Lordship Pt	MISCELLANEOUS -SURF	lead in sediments from skeet shooting
45	MISC -GRND	6000126	INACTIVE	GROUND	6000	Raymark disposal site	MISCELLANEOUS -GRND	disposal of PCBs/metals/asbestos
46	MISC -GRND	7000079	INACTIVE	GROUND	7000	Fourth & Fifth Sts.	MISCELLANEOUS -GRND	
47	INDUST WTR	6000041	INACTIVE	SURFACE	6000	Hull Dye & Print	INDUSTRIAL WASTEWTR	former industrial site - now burned out
48	SPILL	6000044	INACTIVE	GROUND	6000	Bull Dye & Print	OIL/CHEMICAL SPILLS	treated discharge of oil & dye spills
49	SPILL	6000042	INACTIVE	GROUND	6000	Hull Dye & Print	OIL/CHEMICAL SPILLS	#6 fuel oil spills
50	LANDFILL	6000058	ACTIVE	GROUND	6000	Derby	LANDFILL	active mixed waste landfill
51	LANDFILL	6000068	ACTIVE	GROUND	6000	Archer	LANDFILL	active mixed waste landfill & metal hydroxide sludge
52	COOL WTR-S	6000109	ACTIVE	SURFACE	6000	Derby Cellular Products	COOLING WTR -SURFACE	non-contact cooling water discharge to Hous.River

ID	AV_LEGEND	LWDS_NO	LWACTIVE	LWFLOW	SBAS_NO	NAME	LWNAME	DESCRIPTION
53	SALT	6000072	ACTIVE	GROUND	6000	Conn DOT	SALT STORAGE	salt storage
54	SALT	6000087	ACTIVE	GROUND	6000	Stratford	SALT STORAGE	salt storage
55	LANDFILL	6000089	ACTIVE	GROUND	6000	Raybestos	LANDFILL	sludge beds
56	SPILL	6000127	INACTIVE	GROUND	6000	Shock's Autobody Inc	OIL/CHEMICAL SPILLS	
57	IND/MF WTR	6000082	ACTIVE	GROUND	6000	Power Semi-Conductor	IND/MFG WASTEWTR DIS	neutralized acids/wastes/solvents to ground
58	INDUST WTR	6000097	INACTIVE	SURFACE	6000	Charter Arms	INDUSTRIAL WASTEWTR	former industrial discharge; OB
59	LANDFILL	6000100	INACTIVE	GROUND	6000	Stratford	LANDFILL	active bulky waste landfill
60	LANDFILL	6000101	INACTIVE	GROUND	6000	Stratford	LANDFILL	closed mixed waste landfill
61	LANDFILL	7101006	INACTIVE	GROUND	7101	Stratford	LANDFILL	closed mixed waste landfill
62	INDUST WTR	7101015	ACTIVE	SURFACE	7101	Avco Lycoming	INDUSTRIAL WASTEWTR	industrial discharge to Basin 6000
63	MISC -GRND	6000128	INACTIVE	GROUND	6000	Int. Mailing/Better Packing	MISCELLANEOUS -GRND	
64	SPILL	6000123	INACTIVE	GROUND	6000	Sikorsky Aircraft Corp	OIL/CHEMICAL SPILLS	
65	SPILL	7101004	INACTIVE	GROUND	7101	Bridgeport Airport	OIL/CHEMICAL SPILLS	oils/gasoline spills & leaks
66	LANDFILL	6000074	ACTIVE	GROUND	6000	D'Addario	LANDFILL	active bulky waste landfill
67	LANDFILL	6000061	INACTIVE	GROUND	6000	Derby	LANDFILL	closed bulky waste landfill
68	LANDFILL	6000060	INACTIVE	GROUND	6000	Derby	LANDFILL	closed bulky waste landfill
69	LANDFILL	6900111	INACTIVE	GROUND	6900	Derby	LANDFILL	closed bulky waste landfill
70	UNDGR TANK	6000108	INACTIVE	GROUND	6000	NA Philips	LEAKING UNGRND TANK	TPH
71	MISC -GRND	6025008	INACTIVE	GROUND	6025	Vitek Co	MISCELLANEOUS -GRND	
72	INDUST PIT	6000096	INACTIVE	GROUND	6000	Avco Lycoming	INDUSTRIAL PIT	former sewage lagoon & two metal lagoons
73	LANDFILL	6000117	INACTIVE	GROUND	6000	Beacon Point Landfill	LANDFILL	landfill
74	INDUST WTR	6000047	ACTIVE	SURFACE	6000	Shelton Plating	INDUSTRIAL WASTEWTR	metal finishing discharge
75	COOL WTR-S	6000053	ACTIVE	SURFACE	6000	Housatonic Ever Float	COOLING WTR -SURFACE	cooling water discharge
76	LANDFILL	6000132	INACTIVE	GROUND	6000	Mas property	LANDFILL	inactive landfill site
77	SALT-COVER	6000057	ACTIVE	GROUND	6000	Shelton	SALT STORAGE -COVERD	covered salt storage
78	SEWAGE PLT	6000056	ACTIVE	SURFACE	6000	Shelton	SEWAGE TREAT PLANT	STP
79	SEWAGE PLT	6025003	INACTIVE	SURFACE	6025	Shelton	SEWAGE TREAT PLANT	former STP
80	CONTM WELL	6000134	ACTIVE	GROUND	6000		CONTAMINATED WELL	Contaminated well
81	FAILSEPTIC	6025016	INACTIVE	GROUND	6025		FAILING SEPTIC SYS	former failed septic system
82	FAILSEPTIC	6025015	INACTIVE	GROUND	6025		FAILING SEPTIC SYS	former failed septic system
83	CONTM WELL	6025014	ACTIVE	GROUND	6025		CONTAMINATED WELL	Contaminated well
84	CONTM WELL	6026008	ACTIVE	GROUND	6026		CONTAMINATED WELL	Contaminated well
85	CONTM WELL	6000135	ACTIVE	GROUND	6000	Shelton	CONTAMINATED WELL	contaminated well
86	INDUST PIT	6000070	INACTIVE	GROUND	6000	Sikorsky Aircraft	INDUSTRIAL PIT	former underdrained lagoons eliminated; former MOH sludge beds
87	COOL WTR-S	6000094	INACTIVE	SURFACE	6000	Ware Chemical/ Dart Industries	COOLING WTR -SURFACE	former cooling water discharge. Out of business
88	COOL WTR-S	7101002	ACTIVE	SURFACE	7101	Ross & Roberts	COOLING WTR -SURFACE	treated cooling water discharge to Basin 6000
89	SEWAGE PLT	7101003	ACTIVE	SURFACE	7101	Stratford	SEWAGE TREAT PLANT	STP discharge to Basin 6000
90	BACKWASH	6000118	ACTIVE	SURFACE	6000	Dan Beard Sand & Gravel	BACKWASH WATER	gravel washing discharge
91	MISC -GRND	6000119	INACTIVE	GROUND	6000	Dan Beard Sand & Gravel	MISCELLANEOUS -GRND	Spills; dumping hydrocarbons/motor oil/lubricants/asbestos
92	LEACHFIELD	6000062	INACTIVE	GROUND	6000	Ware Chemical/ Dart Industries	LRG SEPTIC LEACH FLD	Inactive large septic tank leach field; MW's on site
93	MISC -GRND	6900152	INACTIVE	GROUND	6900	O'Sullivan Island	MISCELLANEOUS -GRND	industrial waste; buried drums
94	INDUST PIT	6000085	INACTIVE	GROUND	6000	Dresser	INDUSTRIAL PIT	former filtering lagoon for process waters
95	COOL WTR-S	6000086	ACTIVE	SURFACE	6000	Dresser	COOLING WTR -SURFACE	cooling water discharge
96	MISC -GRND	6000137	INACTIVE	GROUND	6000	Raymark (Raybestos)	MISCELLANEOUS -GRND	inactive PCB's; asbesto & lead; temp cap in place
97	LANDFILL	6000098	ACTIVE	GROUND	6000	Raybestos	LANDFILL	active asbestos sludge dump
98	LANDFILL	6000065	ACTIVE	GROUND	6000	United Shoe Machinery	LANDFILL	metal hydroxide sludge storage
99	LANDFILL	6000095	ACTIVE	GROUND	6000	Raybestos	LANDFILL	active asbestos sludge dump; 2 sites (6000138)
100	LANDFILL	6000138	ACTIVE	GROUND	6000	Raybestos	LANDFILL	active asbestos sludge dump; 2 sites (6000095)
101	LANDFILL	6000076	INACTIVE	GROUND	6000	D'Addario/ McNeil SWDA	LANDFILL	closed ash landfills; closed 1976;fly ash & incinerator ash

ID	REG_ID	FACILITY NAME	ADDRESS	CITY
102	110016680689	SHELTON LANDFILL - TRANSFER STATION	866 RIVER RD	SHELTON
103	110000610919	RAYMARK INDUSTRIES	75 EAST MAIN ST	STRATFORD
104	110038748816	FARMERS MARKET	100 CANAL STREET	SHELTON
105	110001405505	CARLON PRODUCTS	101 WATER STREET EXTENSION	DERBY
106	110006187036	LORD CORPORATION	20 OLD STRATFORD ROAD	SHELTON
107	110039556441	HINES FARM		DERBY
108	110039538845	AXTON CROSS	113 CANAL STREET	SHELTON
109	110038740360	FORMER STATE OF CT DEPARTMENT OF TRANSPORTATION	MAIN STREET	DERBY
110	110016734747	HAMPFORD RESEARCH	1255 W BROAD ST	STRATFORD
111	110037382971	DIANON SYSTEMS INC	1 FOREST PKWY	SHELTON
112	110000316550	CHROMIUM PROCESS COMPANY	113 W. CANAL ST.	SHELTON
113	110038165687	RA 710 BRIDGEPORT AVENUE, LLC	710 BRIDGEPORT AVENUE	SHELTON
114	110000621587	FLOW POLYMERS INC	1525 STRATFORD AVE	STRATFORD
115	110012624712	MILFORD POWER STATION	55 SHELLAND ST	MILFORD
116	110040822900	90 MAIN ST	90 MAIN ST	DERBY
117	110000731058	MILFORD BEAVER BROOK WPCF	75 DEERWOOD AVE	MILFORD
118	110002056774	FARREL CORPORATION	45 MAIN ST	DERBY
119	110030315610	VICS SUPER SERVICE STATION	160 ELIZABETH ST	DERBY
120	110006615528	ANSONIA WATER POLLUTION CONTROL FACILITY	98 NORTH DIVISION ST	ANSONIA
121	110002089347	SIKORSKY AIRCRAFT	466 BRIDGEPORT AVE.	SHELTON
122	110002332743	CHARTER ARMS CORP	430 SNIFFENS LN	STRATFORD
123	110011779888	SATIN AMERICAN CORPORATION	40 OLIVER TERRACE	SHELTON
124	110011370275	CONTRACT PLATING COMPANY, INC.	540 LONGBROOK AVENUE	STRATFORD
125	110002089329	MICA CORPORATION	9 MOUNTAIN VIEW DR	SHELTON
126	110000763200	ROSS & ROBERTS, INC.	1299 W. BROAD ST.	STRATFORD
127	110012624758	LATEX FOAM INTERNATIONAL, LLC	510 RIVER RD	SHELTON
128	110039556450	MUTUAL HOUSING		SHELTON
129	110006618071	MILFORD - HOUSATONIC WPCF	1225 ORONOQUE ROAD	MILFORD
130	110002089436	RUDKIN WILEY CORPORATION	360 SNIFFENS LN.	STRATFORD
131	110002497717	TEST AMERICA	128 LONG HILL CROSS RD	SHELTON
132	110001747637	ANCO ENGINEERING INC	217 LONGHILL CROSS RD	SHELTON
133	110000731049	SHELTON WPCF	10 RIVERDALE AVE	SHELTON
134	110002089356	ITT SEMICONDUCTORS	15 PROGRESS DR.	SHELTON
135	110039538809	FORMER SAMARIUS PARCEL	123 CANAL STREET	SHELTON
136	110000316970	SIKORSKY AIRCRAFT HEADQUARTERS	6900 MAIN ST.	STRATFORD
137	110002089338	ARROW RUBBER PRODUCTS INC.	18 BREWSTER LN	SHELTON
138	110000316701	HAMPFORD RESEARCH, INC.	54 VETERANS BOULEVARD	STRATFORD
139	110000610973	ASHCROFT, INC.	250 EAST MAIN STREET	STRATFORD
140	110041261005	O'SULLIVAN'S ISLAND	CAROLINE STREET	DERBY
141	110010337849	STRATFORD SCHOOL FOR AVIATION MAINT TECH	200 GREAT MEADOW RD	STRATFORD
142	110040822884	JACOBS METALS	2 FACTORY ST	DERBY
143	110000610893	STRATFORD ARMY ENGINE PLANT	550 MAIN ST	STRATFORD

ID	REG_ID	FACILITY NAME	ADDRESS	CITY
144	110000316541	SPONGEX CORPORATION	6 BRIDGE ST.	SHELTON
145	110000611124	AUTO SWAGE PRODUCTS, INC.	726 RIVER RD	SHELTON
146	110001405257	STRATFORD WATER POLLUTION CONTROL	105 BEACON POINT ROAD	STRATFORD
147	110000316122	W.E. BASSETT COMPANY	259 ROOSEVELT DR.	DERBY
148	110000316532	EMHART FASTENING TEKNOLOGIES	510 RIVER ROAD	SHELTON
149	110000316293	BIC CONSUMER PRODUCTS MANUFACTURING	500 BIC DRIVE	MILFORD
150	110001746969	TILCON CONNECTICUT, INC.	185 CANAL STREET	SHELTON
151	110000787122	GOODRICH CORP	88 LONG HILL CROSS ROAD	SHELTON
152	110000730996	DERBY WPCF	1 CAROLINE STREET	DERBY
153	110000845104	SIKORSKY AIRCRAFT SHELTON III	33 PLATT RD	SHELTON
154	110038740299	FORMER ROLFITE PROPERTY	131 EAST CANAL STRET	SHELTON
155	110000621523	SYNTHETIC PRODUCTS	375 BARNUM AVENUE	STRATFORD
156	110001748235	DERBY CELLULAR PRODUCTS, INC.	150 ROOSEVELT DR	DERBY
157	110030737610	NRG DEVON STATION POWER PLANT	700 NAUGATUCK AVE	MILFORD
158	110038763996	46 COMMERCE ST	46 COMMERCE ST	DERBY

ID	STATE_ID	SBAS_NO	LWDS_NO	REG_ID	FACILITY NAME	FACILITY ADDRESS	AV_LEGEND	LWACTIVE	LWFLOW	LWNAME	DESCRIP	DESCRIP2
159	0	6900	6900111		Derby		LANDFILL	INACTIVE	GROUND	LANDFILL	closed bulky waste landfill	
160	0	6900	6900107		Ansonia		LANDFILL	ACTIVE	GROUND	LANDFILL	active mixed waste landfill	
161	3	6900	6900100		Ansonia Copper and Brass Co.		LANDFILL	ACTIVE	GROUND	LANDFILL	metal hydroxide sludge storage	
162	0	6900	6900102		Anaconda Brass		COOL&INDUS	ACTIVE	SURFACE	COOLING/IND DISCHRG	combined cooling water and metal finishing discharge	
163	0	6900	6900105		Ansonia		INDUST PIT	ACTIVE	GROUND	INDUSTRIAL PIT	sewage sludge beds	
164	121	6900	6900128		Charlton Press		MISC -GRND	INACTIVE	GROUND	MISCELLANEOUS -GRND		Division St
165	1209	6900	6900143		Derby FinishinInc		SPILL	INACTIVE	GROUND	OIL/CHEMICAL SPILLS		298 Hawkins St
166	1552	6900	6900147		Teledyne Ansonia		MISC -GRND	INACTIVE	GROUND	MISCELLANEOUS -GRND		One Riverside Dr
167	0	6900	6900125		Valley Mental Health Center		MISC -GRND	INACTIVE	GROUND	MISCELLANEOUS -GRND	chlorinated VOC's	
168	0	6900	6900108		Ansonia		SALT	ACTIVE	GROUND	SALT STORAGE	salt storage	
169	3	6900	6900101		Anaconda Brass		MISC -GRND	INACTIVE	GROUND	MISCELLANEOUS -GRND	diversion of Naugatuck River for power plant	
170	0	6900	6900106		Ansonia		SEWAGE PLT	ACTIVE	SURFACE	SEWAGE TREAT PLANT	STP	
171	0	6900	6900103		USM Corp		COOL WTR-S	ACTIVE	SURFACE	COOLING WTR -SURFACE	cooling water discharge	
172	0	6900	6900097		Seymour		SEWAGE PLT	ACTIVE	SURFACE	SEWAGE TREAT PLANT	STP	
173	0	6000	6000040		Bassett Co.		INDUST WTR	ACTIVE	SURFACE	INDUSTRIAL WASTEWTR	metal finishing discharge	
174	0	6900	6900110		Hershey Metal Products		COOL&INDUS	INACTIVE	SURFACE	COOLING/IND DISCHRG	former combined cooling water/tumbling waste discharge	
175	0	6900	6900109		Schott Electronics		INDUST WTR	INACTIVE	SURFACE	INDUSTRIAL WASTEWTR	former metal finishing discarge; OB	
176	0	6900	6900104		Derby		SALT	ACTIVE	GROUND	SALT STORAGE	salt storage	
177	0	6900	6900098		Conn DOT		SALT	ACTIVE	GROUND	SALT STORAGE	salt storage	
178				110002333760	TELEDYNE ANSONIA	1 RIVERSIDE DRIVE						
179				110000316051	ANSONIA COPPER & BRASS	75 LIBERTY ST.						
180				110000316042	LATEX FOAM PRODUCTS, INC.	20 W. MAIN ST.						
181				110000864397	FARREL CORPORATION	25 MAIN STREET						
182				110006615528	ANSONIA WATER POLLUTION CONTROL FACILIT	98 NORTH DIVISION ST						
183				110002043048	SEYMOUR WPCF	723 DERBY AVENUE, EXT						
184				110038760365	COOK INDUSTRIAL PARK	24-26 BEAVER STREET						
185				110043085318	PALMER BROTHERS BUILDINGS	497 EAST MAIN STREET						