NUS CORPORATION
SUPERFUND DIVISION

New Bedford
1.5
2 of 2

INTERNAL CORRESPONDENCE

C-583-3-6-34

TO: **DON SMITH/EPA** DATE: **MARCH 14, 1986**

FROM: **MARTHA MEYERS LEE** MML COPIES: **FILE**

SUBJECT: **CONRAIL RAILYARD FINAL SITE INSPECTION REPORT**
TDD No. F1-8503-12
Reference No. S300MA35SI

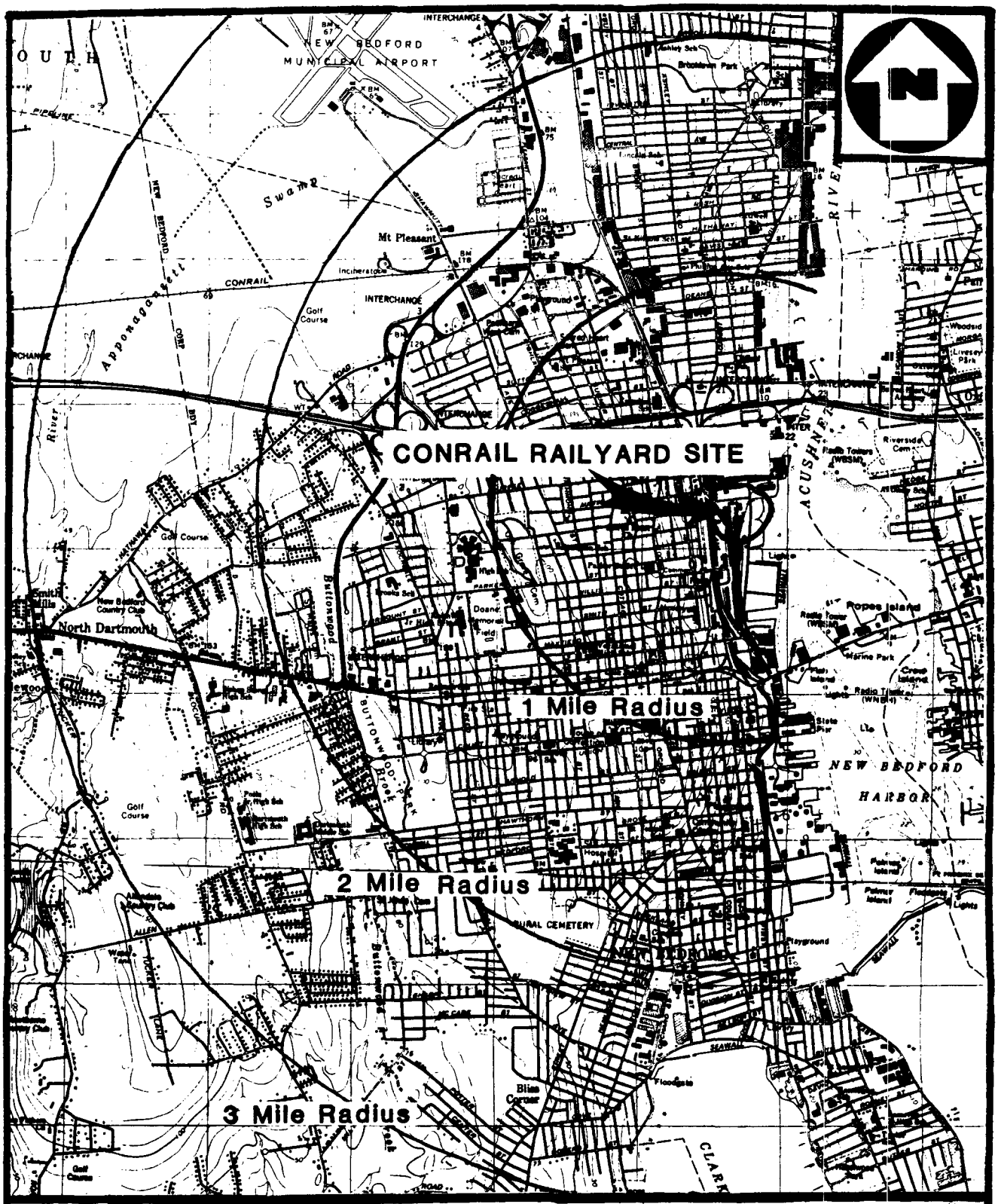
I. INTRODUCTION

The NUS Corporation Field Investigation Team (FIT) was tasked on March 19, 1985 by Region I U.S. Environmental Protection Agency (EPA) Superfund Branch to perform a Preliminary Assessment and Site Inspection of the Conrail Railyard in New Bedford, Massachusetts. The location within the railyard in which the inspection was to be conducted was determined by Region I EPA. The decision was based upon allegations made by former employees of Aerovox and Cornell Dubilier Electronics Inc.. According to the former employees, multiple spillages occurred in the railyard during the transfer of polychlorinated biphenyls (PCBs) from tank cars to fifty-five gallon drums and tank trucks. The site inspection tasks were performed under Technical Directive Document (TDD) Number F1-8503-12.

The documents prepared within comply with requirements set forth under EPA Superfund Legislation (CERCLA). However, they do not necessarily fulfill the requirements of other EPA regulations, such as RCRA. The site inspection is only intended to provide a preliminary screening of sites to facilitate site prioritization by EPA. It is not intended to supplant a more detailed investigation.

II. SITE DESCRIPTION

The Conrail Railyard Site is located on Route 18 in the City of New Bedford, Massachusetts (Figure 1,2). The site is situated on the west side of the Acushnet River and its associated estuaries north of Buzzard Bay. The Acushnet River flows into the New Bedford Harbor south of Route 6 (Figure 3) less than a mile south of the site. The Conrail Railyard Site is situated on city lot numbers 140 and 275, and comprises 14.7 acres. The site consists of compacted cobblestones and partially paved railyard, factory buildings, a transformer, an auxiliary sewer pump station, and metal debris piles. The site is not completely encircled by a fence, therefore, access is unrestricted. The site (lot numbers 140 and 275) is bordered on the west by a residential area, north of Wamsutta Street by industrial textile factory outlets, east of the Herman Melville Boulevard by lot number 248 (undeveloped land owned by the City of New Bedford), and south by the major portion of the railyard. Surface water runoff from the residential community to the west of the site is channeled through a culvert north of the railroad tracks which trends parallel to Wamsutta Street and discharges into the Acushnet River. The Acushnet River is located approximately 200 yards to the east of the site.



LOCUS PLAN

CONRAIL RAILYARD

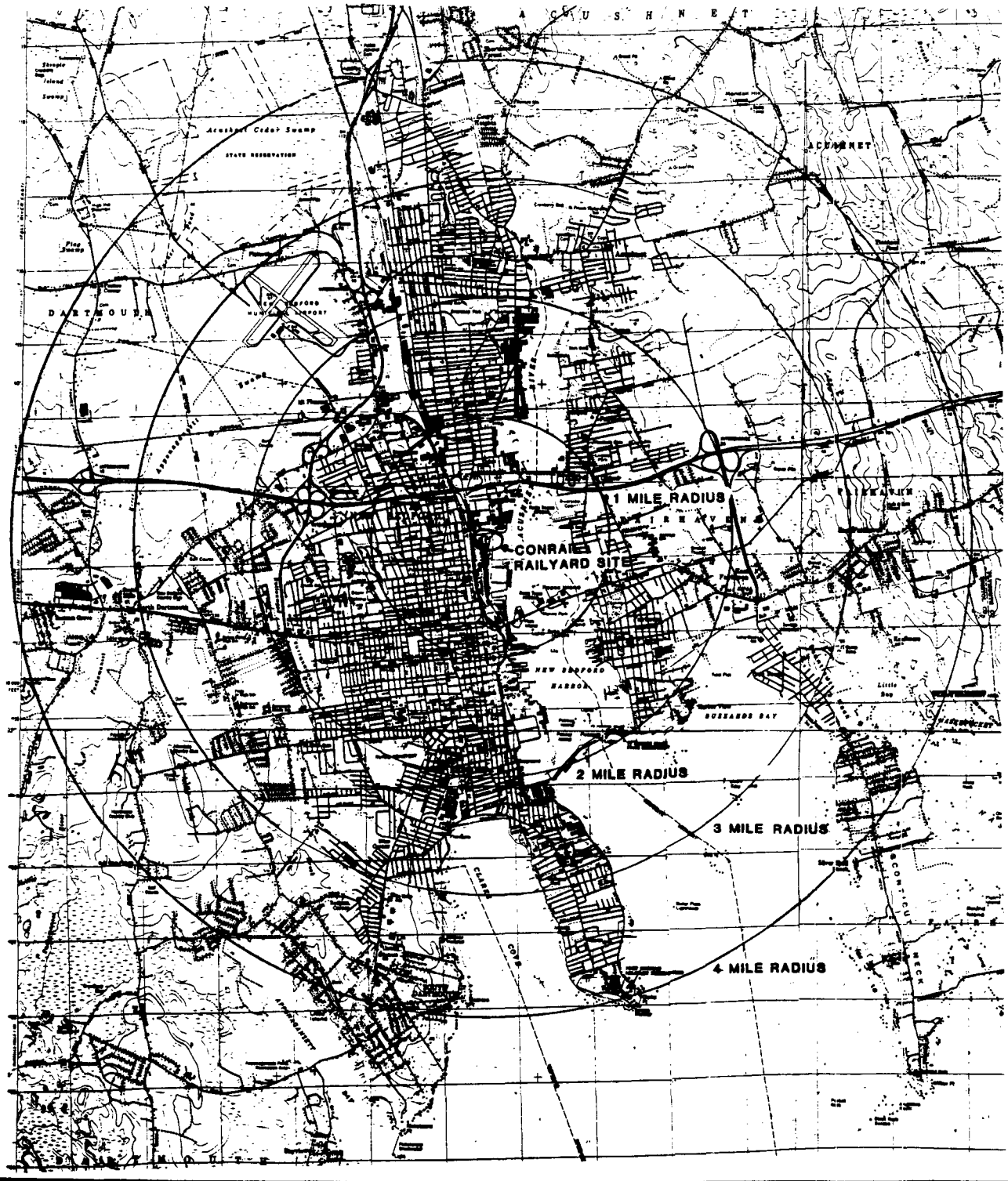
NEW BEDFORD, MASSACHUSETTS

SEPTEMBER 1985

NUS CORPORATION

A Halliburton Company

FIGURE 1



BASE MAP IS A PORTION OF THE U.S.G.S. NEW BEDFORD NORTH AND SOUTH , MARION AND SCONTICUT NECK QUADRANGLES 7.5' SERIES 1979, 1977, 1977, 1975, respectively

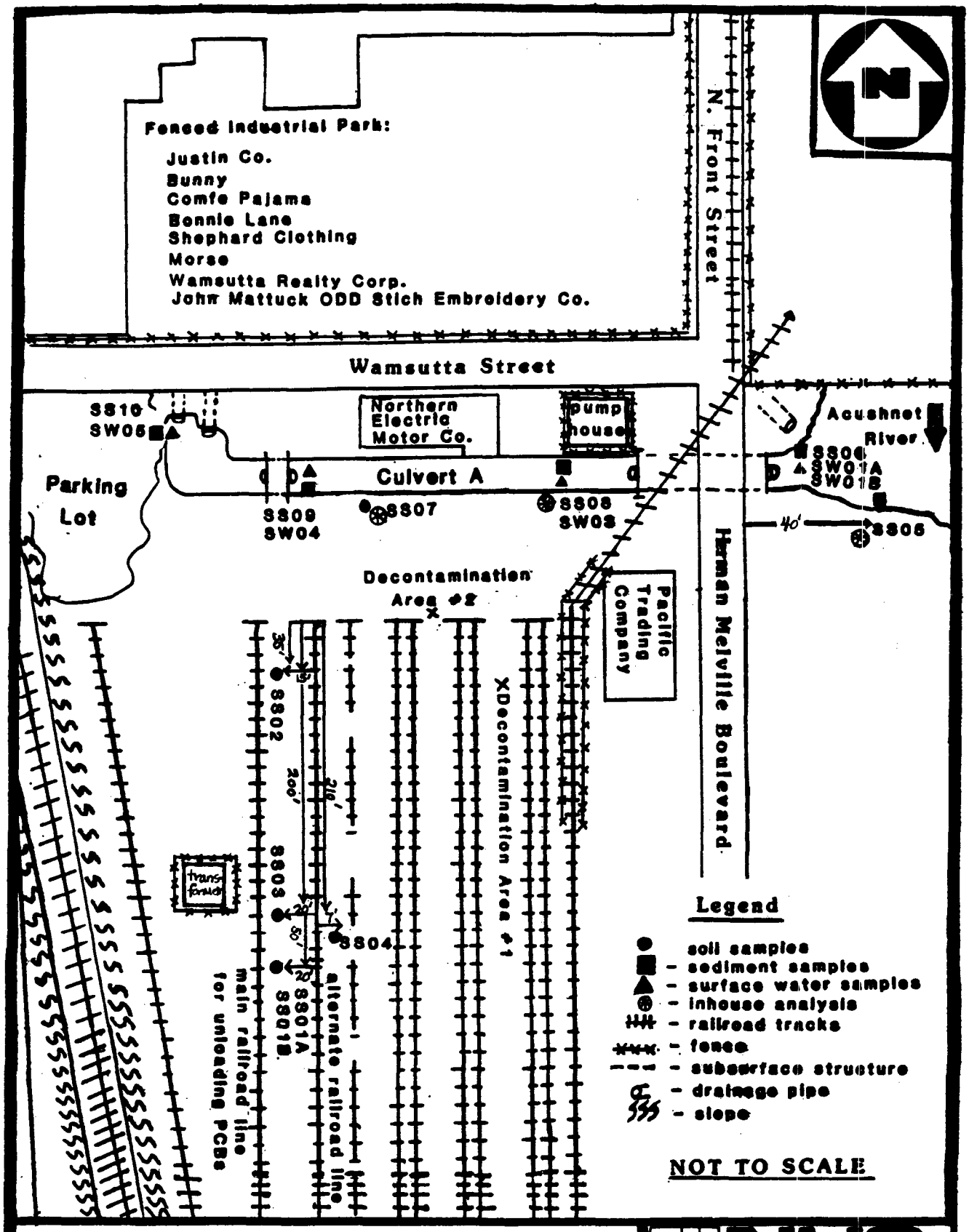
SCALE

NUS CORPORATION

4 MILE LOCUS PLAN
CONRAIL RAILYARD
NEW BEDFORD, MA

SEPT. 1985

FIGURE 1A



SAMPLE LOCATIONS

CONRAIL RAILYARD
NEW BEDFORD, MASSACHUSETTS
JUNE 1985

NUS CORPORATION
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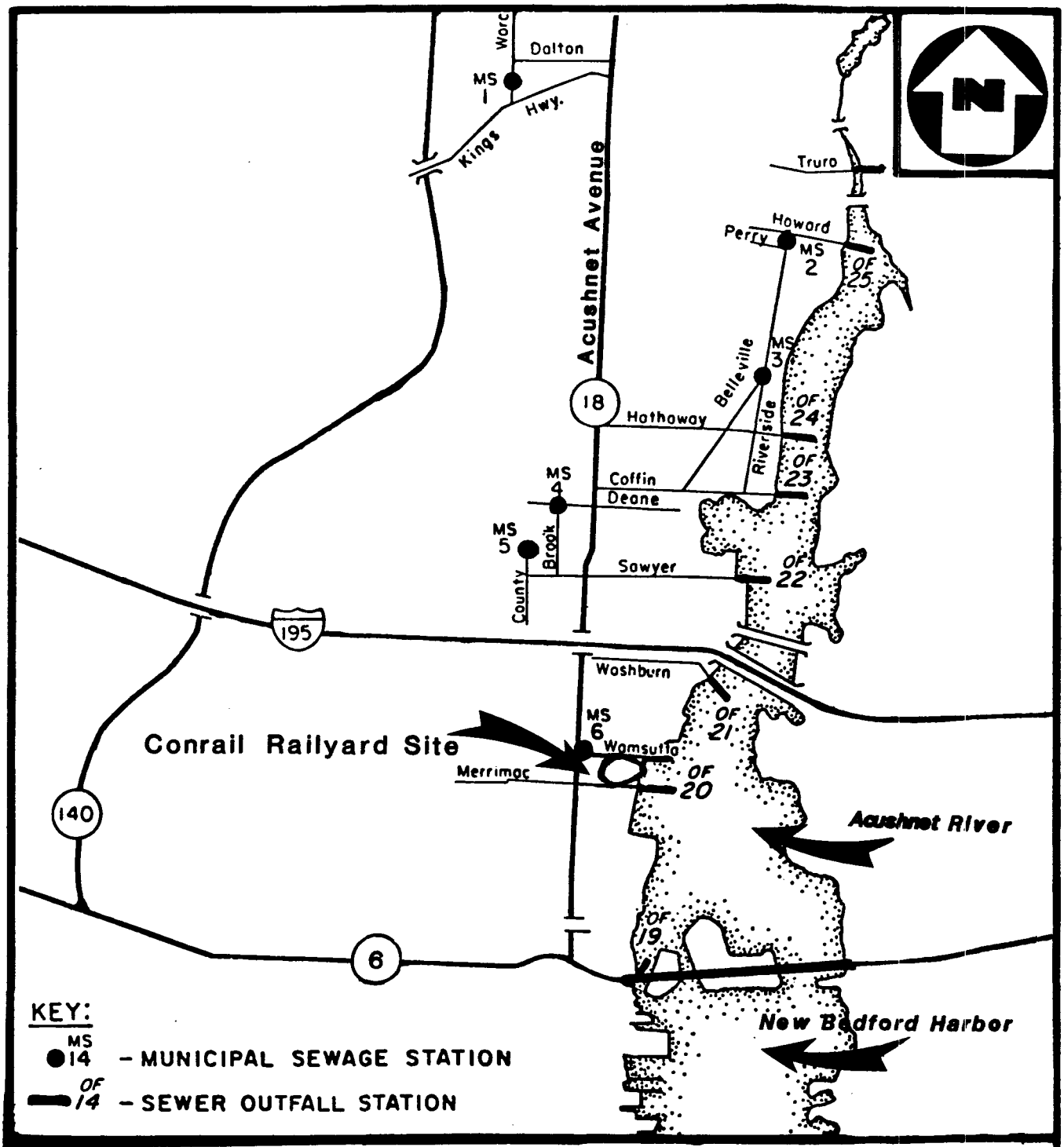
FIGURE 2



Adapted from "New Bedford Environmental Investigation -- Sampling And Analysis of Municipal Sewerage Lines And Bottom Sediments In The Vicinity of Sewerage Outfalls For PCBs.", Draft Final Report, Attachment A ,GCA Corporation,Bedford, MA. May 1983

LOCUS PLAN

New Bedford Municipal Sewerage Stations and Sewer Outfall Stations

NUS CORPORATION
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FIGURE 3

The Conrail Railyard Site is located in a glacial outwash plain and is less than ten feet above mean sea level (3). The elevation of the surrounding coastal area ranges from sea level to 210 feet above mean sea level within a five mile radius of the site. The slope of the site is less than 1%. In the northern area of the railyard, surface runoff discharges northeast towards the Acushnet River.

The railyard is located in a low lying coastal area which has been subjected to tidal flooding from hurricane surges. The mean tidal level during a surge is 2 feet above mean sea level, with the highest recorded tidal level being 12 to 14 feet (3). A seawall with a floodgate was constructed in the mid-1960's south of Palmer Island, preventing further flooding of the site.

The City of New Bedford has a total population of 98,500 (5). EPA generally requires that the population surrounding the site be calculated on a 1,2,3 and 4-mile radius. However, for discussion of the two major routes of migration: groundwater and surface water, only that population wit n the radius west of the Acushnet River is calculated. The Acushnet River acts a hydrogeologic discontinuity due to the river's size and its function as a discharge for all surface water and groundwater. A one mile radius around the site would therefore include approximately 8,150 residents. Approximately 90,000 people, 90% of the total population of the City of New Bedford, reside within two miles of the site. The population residing within three miles of the site is approximately 100,000 persons, which includes the town of North Dartmouth, located three miles of the site. For the air migration route, the population within four miles is approximately 140,000.

III. SITE HISTORY

From 1906 to 1980, the Conrail Railyard Site, located on the New Bedford tax assessor's map Number 72 as Lot Numbers 140 and 275, was owned and operated as a railyard by several railroad companies. The Penn Central Railroad Company, which purchased both lots in 1968, sold Lot Number 275 to the Housing Seventy Corporation, a subsidiary of the city of New Bedford, in 1980. The railyard on Lot Number 275 has been inactive since 1980 (6). Penn Central Railroad Company is the property owner of Lot Number 140, but the railyard is actively operated by the Consolidated Rail Corporation (Conrail) (7). The total area for both the active and inactive areas is 14.7 acres.

Polychlorinated biphenyls (PCBs) were shipped by Monsanto Corporation of St. Louis, Missouri, to the Conrail Railyard from 1941 to October 1977 (5). Cornell Dubilier Electronics, Incorporated, located at 1605 East Rodney French Boulevard, New Bedford, Massachusetts, and Aerovox Incorporated, located at 740 Belleville Avenue, New Bedford, Massachusetts were the primary clients of the Monsanto Corporation for the shipment of PCBs delivered to the Conrail Railyard. The PCBs were utilized by both companies as an impregnation fluid in the manufacture of capacitors. Cornell Dubilier Electronics Inc. produced capacitors impregnated with PCBs from 1941 until 1977 when they converted to dioctyl phthalate as the impregnating fluid (5). Aerovox Inc. received shipments of PCBs by way of the railroad tank cars from 1947 until 1977 when the Monsanto Corp. discontinued the production and sale of PCBs (5). Aerovox Inc. continued production of PCB impregnated capacitors until October 1978 using shipments by a foreign supplier of PCBs. Aroclor 1242 was used in the manufacturing process from 1941 to 1971 until Monsanto Corp. completely replaced Aroclor 1242 with Aroclor 1016 (5). From 1971 to 1977, Aroclors 1252, 1254 and 1260 were used in the production of capacitors (5). Between January 1973 and December 1975, more than four million pounds of PCBs were used by Aerovox Incorporated during the manufacturing process (5).

In the early 1950's, it was standard practice for the PCBs to be pumped from the Monsanto Corporation tank cars into 55 gallon drums at the railyard. After 1956, the Aroclors were pumped into tank trucks which transferred the PCBs to the manufacturing facilities, which were located within 3 miles of the railyard. The tank trucks were filled three to four times in order to completely transfer the shipment from each tank car (8). The companies which received the Monsanto Corporation shipments of PCBs did not have a designated site at the railyard in which to receive the tanker (8). However, deliveries were generally made in approximately the same area according to reports from former employees. The area was never covered nor were berms or sumps provided in the event of a spill (8). There have been allegations of multiple spillages occurring at the Conrail Railyard Site while the PCBs were being transferred from the Monsanto tank car to 55 gallon drums and tank trucks.

Since the mid-1970's, several studies have been conducted in the New Bedford Harbor documenting the extent of PCBs, heavy metals and organic contamination. The Massachusetts Department of Environmental Quality Engineering (DEQE) conducted a survey in June of 1982 evaluating the PCB contamination within the New Bedford sewage system (9). In the report, the DEQE concluded from the data that extensive PCB contamination existed at several locations within the sewage transfer lines. However, no PCBs were detected by the DEQE in the two composite water samples collected at location MS6(Figure 3), the manhole on Acushnet Street south of the intersection with Wamsutta Street adjacent west of the Conrail Railyard Site (9).

In May of 1983, the GCA/Technology Division Corporation was tasked by the Superfund Division of the U.S. Environmental Protection Agency to conduct a comprehensive investigation to further evaluate the New Bedford sewage system (9). The study reported the analysis of solid residues within the municipal sewer system and bottom sediments from points near sewage outfalls. On December 12, 1982, location MS6 was resampled for PCBs by GCA Corporation and found to contain 8 parts per million (ppm) and 14 ppm of Aroclors 1242 and 1254 respectively in the sediment (9). Two bottom sediment samples were collected on October 21, 1982 at the sewage outfall station OF 20 (Figure 3) located where Merrimac Street (extended) would intersect east of Herman Melville Boulevard at the Acushnet River (9). The first sample was collected within four centimeters of the surface and was found to contain 48 ppm of Aroclor 1242 and 1254. Between four to eight centimeters deep at location OF 20 a concentration of 47 ppm was detected of Aroclor 1242 and 1254 (9).

Presently, the Housing Seventy Corporation, a subsidiary of the City of New Bedford, is in the process of planning the development of lot number 275 into condominums (10,11). In May of 1985, during the NUS/FIT site visit, the railroad ties were in the process of being removed in the inactive yard. The development of the site has been temporarily delayed until the completion of EPA and NUS/FIT investigations.

NUS/FIT involvement with the Conrail Railyard Site was initiated in March, 1985 when by EPA requested that a Preliminary Assessment and Site Inspection be conducted of the site.

IV MIGRATION PATHWAYS

A) Groundwater Route

The Conrail Railyard Site is situated within the Buzzards Bay Watershed Basin and is characterized as a low lying granitic upland of schist and gneiss with glacial deposits consisting of sand, silts, and gravel lying immediately above the granite in most areas(3, 12). The topography of the basin area is generally low with gently rolling hills of elevations ranging from sea level at the coastline to slightly more than 200 feet above mean sea level within 5 miles inland of the bay (4). The Conrail Railyard Site is located in a glacial outwash plain with deposits consisting primarily of medium to coarse gravel and sand (3). The thickness of the overburden in the area of the site is estimated at 25 to 35 feet from local driller's logs (12). Hydrogeologic research conducted by the United States Geological Survey (U.S.G.S.) indicates that less than twenty-five feet of saturated stratified, unconsolidated deposits lie above the gneissic granite bedrock (3). Hydrogeologic and topographic information suggests that the groundwater level fluctuates within 10 feet of the surface (3, 12).

The slope of the site is less than 1 %. In the northern area of the railyard the runoff flows northeast towards the Acushnet River. The unconsolidated deposits of gravel and sand located at the site have a potentially high infilteration capacity. However, the compacted cobblestones covering the railyard's surface may act as an impediment to contamination migrating directly into the sediment. The surficial aquifer is capable of yielding approximately 50-100 gallons per minute (3). Large withdrawals of the groundwater in the area of the site are believed to induce movement of the fresh/salt water interface, increasing the sodium and chloride content of well water (3). The groundwater at the Conrail Railyard Site, being tidally influenced, is most likely to flow towards and in the same direction as the Acushnet River.

From local driller's logs, there is evidence that no impermeable layer of clay or dense till exists in the area of the Conrail Railyard Site which would prevent vertical migration of contaminants (12). From this information, it is possible to assume that the bedrock and surfical aquifer are hydrologically connected.

Approximately 140,000 people are served by the New Bedford municipal water system (13). The City of New Bedford, and towns of Acushnet, Fairhaven, Dartmouth, North Dartmouth, and East Freetown are supplied water by the Little Quitticas, Great Quitticas, and Pocksha Ponds (12). The water sources for the City of New Bedford are located approximately ten miles north of the Conrail Railyard Site in the towns of Rochester and East Freetown. According to the New Bedford Water Works Department, there are no more than five private wells existing in the City of New Bedford (13). One of the private wells is located at St. Luke's Hospital, while the remaining are residential wells located north near the town of Freetown (13). St. Luke's Hospital, located one and half miles southwest of the Conrail Railyard Site, utilizes the water from a private well to maintain their grounds (14). The monthly water analysis performed by the city of New Bedford has indicated the presence of iron in high concentrations (14). No other contaminants have been noted in well water to date.

The town of North Dartmouth, which is located three miles west of the site, is supplied water from four municipal wells, one of which is closed due to volatile organic contamination detected in the groundwater one hundred feet from the well. The closed municipal well to the site is located in Dartmouth more than six miles west of the site on Route 6 near Westport's town line. The North Dartmouth municipal wells are located more than four miles away from the Conrail Railyard. No PCB contamination has been detected in any of the Dartmouth municipal wells (15).

B) Surface Water Route

Two surface water bodies flow within the immediate vicinity of the Conrail Railyard Site (Figures 1,2). The Acushnet River flows year round in a southerly direction approximately 200 yards east of the site. The Acushnet River flows into the New Bedford Harbor, 4000 feet south of the site, directly beyond Route 6. Surface water runoff from the residential community to the west of the site is channeled through a culvert approximately 20 feet north of the railroad tracks which trends parallel to Wamsutta Street and discharges into the Acushnet River. The Acushnet River is the likely receptor of any surface migration of contaminants either directly or via the culvert.

The slope of the Conrail Railyard Site is less than 1% and in the northern area of the railyard, the surface runoff flows northeast towards the culvert which discharges into the Acushnet River. The railyard surface, primarily covered by compacted cobblestones, may act as an impediment to contamination migrating directly into the sediment. However, the degree to which this may occur is unknown.

The Conrail Railyard Site is located in a low lying coastal area which has been subjected to tidal flooding from hurricane surges. Diurnal fluctuations of the tide have potentially cross-contaminated the PCB contaminated Acushnet River and Culvert A (Figure 2), which is located north of the railroad tracks and less than ten feet above mean sea level. The mean tidal level during a surge is 2 feet above mean sea level, the highest recorded level is 12 to 14 feet (3). In the mid-1960's, a three mile huricane dike was built closing off the harbor from the ocean south of Palmer Island, preventing further surges (12).

The Acushnet River, which is located within 200 yards of the site, and the inner New Bedford Harbor have been classified by the Massachusetts Division of Water Pollution Control (DWPC) as SB coastal waters. The outer New Bedford Harbor, which lies within one and a half miles of the site, has been classified as a SA coastal water (4). Class SB coastal waters are considered suitable for bathing, recreation and fishing purposes. Coastal waters classified as SA are considered to be of the highest quality, and are suitable for swimming, recreation, shellfishing and fish and wildlife habitats. Both the Inner and Outer New Bedford Harbors have not been able to meet the classification goal due to the accumulated organic and toxic matter in the harbor sediment. In September 1979, the Massachusetts Department of Public Health closed the Inner New Bedford Harbor to the taking of all finfish, shellfish, and lobsters (5). The outer harbor was closed to the taking of lobsters and bottom feeding fish (5).

C) Air Route

No known air problems are associated with the site.

V. TECHNICAL APPROACH

On Thursday, May 23, 1985, NUS/FIT conducted a site visit and sampling round at the Conrail Railyard Site located in New Bedford, Massachusetts. Martha Meyers Lee (NUS project manager) and Larry Fitzgerald (NUS) arrived at the site at 10:10 a.m and were met by Steve Joyce (EPA project manager) and Mr. Martin Blake, a private investigator contracted by Region I EPA. The weather was clear with sunny skies and a temperature of 65-70°F. There was a moderate breeze from the south.

An initial reconnaissance was conducted with a HNu Systems PI 101 Photoionization Detector in order to determine sample locations and ambient air characteristics. The HNu was calibrated to background levels upwind of the site. Monitoring of the ambient air throughout the reconnaissance indicated readings at background levels. Sample locations in the railyard were determined after Marty Blake indicated the areas of alleged PCB spillage with the use of binoculars at the command post, and by walking upwind along the eastern perimeter of the 'alternate' amd 'main' railroad unloading lines (Figure 2).

Following the reconnaissance, NUS/FIT proceeded to conduct environmental sampling. All sampling was conducted in accordance with approved sampling plans. A total of eighteen samples were collected by NUS/FIT at this site. These included five sediment, seven soil and six surface water samples along with blanks and duplicates (Figure 2). Sample data is summarized in Table 1.

During the initial site reconnaissance Anchor Transportation trucks were unloading tank cars of flour on the railroad track east of the 'main' railroad line. Town surveyors were determining the location of the property line of lot number 275 of the New Bedford tax assessors map near the 'main' railroad tracks, and a railroad car on the 'alternate' railroad track was being repaired. Due to the amount of activity in the railyard upon arrival, the surface water and sediment samples (SW01A, SW01B, SS06, SW04, SS09, SW05, SS10) were collected prior to the soil samples, during high tide. Sampling along the culvert resumed in the afternoon during low tide after the collection of soil samples in the railyard at locations SS07, SW03, SS08 and SS05. Surface water and sediment samples collected at locations SW01, SS06, SW04, SS09, SW03, SS08, SS05, and SS07 were analyzed for metals, pesticides, and extractables to help determine the extent of migration of contaminants along the culvert to the Acushnet River.

TABLE I

SAMPLE SUMMARY FOR THE CONRAIL RAILYARD - MAY 23, 1985

Station Location	Sample Number	Time	Matrix	Depth	Organic Traffic No.	Location and Description
SS01A+●	12950	1610	soil	*	AB875	soil sample along main railroad tracks, general contaminants
SS01B+●	12951	1615	soil	*	AB876	duplicate of soil sample SS01
SS02+	12970	1515	soil	*	AB877	soil sample along main railroad tracks, general contaminants
SS03+●	12953	1600	soil	*	AB878	soil sample along main railroad tracks, general contaminants
SS04+●	12954	1620	soil	*	AB879	soil sample along alternate railroad tracks, general contaminants
SS05●	12955	1800	sediment	6"	-	sediment sample from shoreline
SS06+●	12958	1145	sediment	6"	AB880	sediment from drainage area at shoreline, migration of contaminants
SW01A+●	12956	1130	aqueous	-	AB870	surface water from drainage area in Acushnet River, migration of contaminants
SW01B+●	12957	1130	aqueous	-	AB871	duplicate of surface water sample SW01
SS07●	12960	1630	soil	10"	-	soil sample along culvert "A", migration of contaminants
SW03●	12961	1700	aqueous	-	-	surface water from culvert "A", migration of contaminants
SS08●	12962	1700	sediment	6"	-	sediment from same location as SW03.
SW04+●	12963	1215	aqueous	-	AB872	surface water from culvert "A", migration of contaminants
SS09+●	12964	1220	sediment	6"	AB881	sediment from same location as SW04
SW05+●	12965	1445	aqueous	-	AB873	background surface water sample
SS10+●	12966	1445	sediment	6"	AB882	background sediment sample
SS12+●	12968	930	soil	-	AB883	soil blank
SW06+●	12969	945	aqueous	-	AB874	EPA water blank

* Collected below cobblestones.
\+ Analyzed by a National Contract Laboratory
● Analyzed by NUS/FIT In-house Screening Laboratories

Background sediment and water samples SS10 and SW05 were collected upstream from all other sample locations in the culvert. Surface water samples were collected prior to sediment samples at each location. Surface water samples were collected in a "grab" fashion below the surface of the water directly into the sample containers with the exception of samples analyzed for volatile organic compounds. The volatile samples were collected with a 16 oz. glass jar and carefully transferred to 44 milliliter (ml) septumed VOA vials to minimize agitation of the sample. A new jar was utilized between sample locations to eliminate the possibility of cross-contamination. Prior to field work, all aqueous VOA vials were preserved with one hundred microliters of mercuric chloride solution ($HgCl_2$) to obtain a final concentration of approximately 16 ppm in the sample. The surface water samples to be analyzed for metals were preserved with nitric acid (HNO_3) to a pH less than two after sample collection.

Soil samples were collected from four locations (SS01-SS04) below a 5" layer of cobblestone in the railyard to determine if any on-site contamination existed. Location SS07 was sampled along the upper embankment of the culvert using a double-flighted hand auger at a depth of approximately ten inches. This location was selected in order to determine whether any migration of contamination via surface run-off in the railyard exists. All soil and sediment samples with the exception of location SS07 were collected with a stainless steel trowel. The soil and sediment samples were also collected in a grab fashion.

Duplicate and blank samples were collected for the three mediums sampled with the exception of a sediment blank. After all of the samples were collected, they were decontaminated with an alconox wash and water rinse, then placed into a cooler with ice. Equipment was decontaminated with a water, methanol, water rinse. Proper Chain of Custody was maintained throughout the sampling task and samples were recorded on Chain of Custody Record Number 02652 and 12653. The NUS/FIT in-house screening samples were recorded on Chain of Custody Numbers 02662 and 02663. The five Contract Laboratory Program (CLP) water samples were shipped to the National Contract Laboratory, Nanco Laboratory of Hopewell Junction, New York via Federal Express, Airbill Number 60310455, on May 24. The CLP water samples were recorded on Chain of Custody Number 02655. Nine CLP sediment/soil samples were shipped to Aquatec, Inc. of South Burlington, Vermont on May 24, 1985 via Federal Express, Airbill Number 603100466. The nine CLP soil/sediment samples were recorded on Chain of Custody Number 02654.

IV RESULTS

The eighteen samples collected during this Site Inspection were analyzed by both the NUS/FIT In-house Screening Laboratory and National Contract Laboratories. Samples collected during a Site Inspection are routinely analyzed by only the NUS/FIT in-house Screening Laboratory. Due to the sensitive nature of this project, Contract Laboratory Program (CLP) analyses were performed for confirmation of results. Table 2 summarizes the parameters performed on each sample analyzed by NUS/FIT In-house Screening Laboratory. Fourteen samples were shipped to National Contract Laboratories for Hazardous Substance List (HSL) analyses under the Contract Laboratory Program (Table 3).

Seventeen samples were analyzed for volatile organic compounds, metals, and pesticides (sediment and soil only) by the NUS/FIT Screening Laboratory. The results of the NUS/FIT analyses are summarized in Tables 4 to 6. The results garnered from the screening techniques are qualitative and indicate the presence of contaminant compounds. They should not be used as quantitative results. Therefore, all concentrations are given in ranges. In addition, compound identification for volatile organic and pesticide analyses is tentative in that compounds were identified by comparison of retention time of the sample compound to the retention times of various standards.

Nine sediment/soil samples were collected during this Site Inspection for Hazardous Substance List (HSL) analyses under the Contract Laboratory Program by Aquatec, Inc. of South Burlington, Vermont. The results of the HSL analyses are summarized in Tables 7 to 10. HSL analyses were also performed on five water samples obtained during the sampling of the culvert by Nanco Laboratory, a National Contract Laboratory, of Hopewell Junction, New York (Tables 11-14).

In reviewing the analytical data and names of compounds detected, the reader should note that the suffixes-ethylene and -ethene are synomymous.

During the collection of the soil samples in the railyard, NUS/FIT observed an electrical transformer to be located within thirty feet west of the 'main' unloading line. The transformer appeared to contain no rust and looked clean. The ground in the area of the transformer did not appear stained.

A) GROUNDWATER ROUTE

It is difficult to determine from the limited number of samples collected during this site inspection whether the contamination detected in the railyard has impacted the surficial aquifer at this site. Based upon the analytical, hydrogeologic, and topographic information, groundwater may to a limited degree be impacted from soil contamination at this site by percolation of precipitation through soils.

TABLE 2

PARAMETER SUMMARY FOR THE CONRAIL RAILYARD SAMPLES ANALYZED BY NUS/FIT IN-HOUSE SCREENING LABORATORY

Station Number	Sample Number	Matrix	Screening Parameters Volatile Organics	Metals	PCBs
SS01A	12950	soil	x	x	
SS01B	12951	soil	x	x	
SS03	12953	soil	x	x	
SS04	12954	soil	x	x	x
SS05	12955	sediment	x	x	x
SS06	12958	sediment	x	x	x
SW01A	12956	aqueous	x	x	
SW01B	12957	aqueous	x	x	
SS07	12960	soil		x	x
SS08	12962	sediment	x	x	x
SW04	12963	aqueous	x	x	
SS09	12964	sediment	x	x	x
SW05	12965	aqueous	x	x	
SS10	12966	sediment	x	x	x
SS12	12968	soil	x	x	x
SW06	12969	aqueous	x	x	
SW03	12961	aqueous	x		

TABLE 3

PARAMETER SUMMARY FOR THE CONRAIL RAILYARD SAMPLES ANALYZED BY NATIONAL CONTRACT LABORATORIES

Station Number	Sample Number	Organic Traffic No.	National Contract Laboratory 1,2	Parameters
SS01A	12950	AB875	Aquatec, Inc.	
SS01B	12951	AB876	Aquatec, Inc.	
SS02	12970	AB877	Aquatec, inc.	
SS03	12953	AB878	Aquatec, Inc.	
SS04	12954	AB879	Aquatec, Inc.	
SS06	12958	AB880	Aquatec, Inc.	All samples were
SW01A	12956	AB870	Nanco Laboratory	analyzed through the
SW01B	12957	AB871	Nanco Laboratory	Contract Laboratory
SW04	12963	AB872	Nanco Laboratory	Program for:
SS09	12964	AB881	Aquatec, Inc.	• Volatile organics
SW05	12965	AB873	Nanco Laboratory	• Semi-volatile organics
SS10	12966	AB882	Aquatec, Inc.	• Pesticides
SS12	12968	AB883	Aquatec, Inc	
SW06	12969	AB874	Nanco Laboratory	

1 Aquatec, Inc. of South Burlington, Vermont analyzed the soil and sediment samples through the Contract Laboratory Program.

2 Nanco Laboratory of Hopewell Junction, New York analyzed the aqueous samples through the Contract Laboratory Program.

TABLE 4
VOLATILE ORGANIC IN-HOUSE SCREENING[1] OF SURFACE WATER, SEDIMENT AND SOIL SAMPLES

Samples collected May 23, 1985

TENTATIVELY IDENTIFIED	detection limit (ppb)	Station Location:	SS01	SS01 Dup.	SS03	SS04	SS05	SW01	SW01 Dup.	SS06
		EPA Sample No.:	12950	12951	12953	12954	12955	12956	12957	12958
1,1-dichloroethylene										
trans-1,2-dichloroethylene										
1,1-dichloroethane										
methylene chloride	*		-	-	-	-	D	-	-	D
chloroform										
1,2-dichloroethane										
1,1,1-trichloroethane										
trichloroethylene	1		-	-	●	-	-	-	-	-
benzene	1		-	-	-	-	-	-	-	-
toluene	3		-	-	-	-	-	-	-	-
tetrachloroethylene	3		-	-	-	-	-	-	-	-
chlorobenzene	5		-	-	-	-	-	-	-	-
ethylbenzene	10		-	-	-	-	-	-	-	-
m-xylene	15		-	-	-	-	-	-	-	-
0-xylene	20		-	-	-	-	-	-	-	-
No. Unidentified Peaks			0	0	0	0	1	1	1	2

Key
D = detected, not quantitated
\- = not detected
● = detected in trace amounts
●● = detected in moderate amounts
●●● = detected in substantial amounts
Dup. = Duplicate Sample
BLK = Field Blank
SS = Soil Sample/Sediment Sample
SW = Surface Water Sample

* Compounds co-elute in two peaks and can be detected but not distinguished from each other.

1 All samples were screened in-house by NUS chemists utilizing a Photovac 10A10 GC for the presence of volatile organic compounds. It is stressed that the results garnered from this screening technique are qualitative and indicate the presence of contaminate compounds. They should not be used as quantitive results. Therefore, all concentrations are given in ranges. In addition, compound identification is tentative in that compounds were identified by comparison of retention time of sample compounds to the retention times of various standards.

TABLE 4
VOLATILE ORGANIC IN-HOUSE SCREENING[1] OF
SURFACE WATER, SEDIMENT AND SOIL SAMPLES
PAGE TWO

TENTATIVELY IDENTIFIED	Station Location:	SW03	SS08	SW04	SS09	SW05	SS10	SS12 BLK	SW06 BLK
	EPA Sample No.:	12961	12962	12963	12964	12965	12966	12968	12969
1,1-dichloroethylene									
trans-1,2-dichloroethylene									
1,1-dichloroethane									
methylene chloride		-	-	D	-	D	D	-	D
chloroform									
1,2-dichloroethane									
1,1,1-trichloroethane									
trichloroethylene		-	-	-	-	●	●	-	-
benzene		-	●	-	-	-	●	-	-
toluene		-	●	-	-	-	●	-	-
tetrachloroethylene		-	-	-	-	-	●	-	-
chlorobenzene		-	●	-	-	-	●●	-	-
ethylbenzene		-	●	-	-	-	●	-	-
m-xylene		-	-	-	-	-	●	-	-
0-xylene		-	-	-	-	-	●●●	-	-
No. Unidentified Peaks		2	8	2	0	2	16	0	0

Key
D = detected, not quantitated
\- = not detected
● = detected in trace amounts
●● = detected in moderate amounts
●●● = detected in substantial amounts
Dup. = Duplicate Sample
BLK = Field Blank
SS = Soil Sample/Sediment Sample
SW = Surface Water Sample

* Compounds co-elute in two peaks and can be detected but not distinguished from each other.

1 All samples were screened in-house by NUS chemists utilizing a Photovac 10A10 GC for the presence of volatile organic compounds. It is stressed that the results garnered from this screening technique are qualitative and indicate the presence of contaminate compounds. They should not be used as quantitive results. Therefore, all concentrations are given in ranges. In addition, compound identification is tentative in that compounds were identified by comparison of retention time of sample compounds to the retention times of various standards.

TABLE 5
METAL IN-HOUSE SCREENING[1] OF SURFACE WATER, SEDIMENT AND SOIL SAMPLES

Samples collected May 23, 1985

TENTATIVELY IDENTIFIED	Detection Limits Water (ppb)	Detection Limits Soil/Sed. (ppm)	Station Location:	SS01	SS01 Dup.	SS03	SS04	SS05	SW01	SW01 Dup.	SS06
			EPA Sample No.:	12950	12951	12953	12954	12955	12956	12957	12958
TASK 1											
Aluminum	N/A	N/A					Not Analyzed				
Chromium	600	50		-	-	-	●●	●●	-	-	●●
Barium	250	25		●●●	●●●	●●●	●●●	●●●	-	-	●●●
Beryllium	N/A	N/A					Not Analyzed				
Cobalt	600	40		-	-	-	-	-	-	-	-
Copper	200	30		●●	●●	●●●●	●●●	●●●●	-	-	●●●●
Iron	400	N/A		N/A	N/A	N/A	N/A	N/A	-	-	N/A
Nickel	200	40		-	-	●●	-	●●	-	-	●●
Manganese	600	50		●●●	●●●	●●●●	●●●	●●●	-	-	●●●●
Zinc	200	30		●●●	●●●	●●●●	**	●●●●	-	-	●●●●
Boron	N/A	N/A					Not Analyzed				
Vanadium	600	50		-	-	-	-	-	-	-	-
Silver	200	30		-	-	-	-	-	-	-	-
TASK 2											
Arsenic	200	50		-	-	●	-	-	-	-	-
Antimony	250	30		-	-	-	-	-	-	-	-
Selenium	150	20		-	-	-	-	-	-	-	-
Thallium	150	25		-	-	-	-	-	-	-	-
Mercury	100	25		-	-	-	-	-	-	-	-
Tin	250	30		-	-	-	-	●●	-	-	●●
Cadmium	250	30		-	-	-	-	-	-	-	-
Lead	100	25		●●	●●	●●●	●●	●●●	-	-	●●●
Bromine				-	-	-	-	●●	-	-	●

Key

NA	=	Not Analyzed
-	=	Not Detected/Below Detection Limits
●	=	trace - 50 ppm
●●	=	51 - 250 ppm
●●●	=	251- 500 ppm
●●●●	=	501 - 1000 ppm
**	=	> 1000 ppm
Dup.	=	Duplicate Sample
BLK	=	Field Blank
SS	=	Soil Sample/Sediment Sample
SW	=	Surface Water Sample

1 All samples were screened in-house by NUS Chemists utilizing a Kevex 7000 x-ray fluorescence instrument. The results are qualitative and indicate the presence of the above elements. All concentrations are given in ranges as the results must not be interpreted as being quantitative. All the reported ranges of concentration are relative to control standards run during the analysis.

TABLE 5
METAL IN-HOUSE SCREENING[1] OF SURFACE WATER, SEDIMENT AND SOIL SAMPLES
PAGE TWO

TENTATIVELY IDENTIFIED	Station Location:	SS07	SS08	SW04	SS09	SW05	SW10	SS12 BLK	SW06 BLK
	EPA Sample No.:	12960	12962	12963	12964	12965	12966	12968	12969
TASK 1									
Aluminum					Not Analyzed				
Chromium		-	●●	-	-	-	●●	●●	-
Barium		●●●	●●●	-	●●	-	●●●	●●●●	-
Beryllium					Not Analyzed				
Cobalt		-	-	-	-	-	-	-	-
Copper		●●●●	●●●●	-	●●●●	-	●●●●	●●	-
Iron		N/A	N/A	-	N/A	-	-	N/A	-
Nickel		-	●●	-	●●	-	●●	●●	-
Manganese		●●●●	●●●	-	●●●	-	**	●●●●	-
Zinc		●●●●	●●●●	-	●●●	-	**	●●●	-
Boron					Not Analyzed				
Vanadium		-	-	-	-	-	-	-	-
Silver		-	-	-	-	-	-	-	-
TASK 2									
Arsenic		-	-	-	-	-	-	-	-
Antimony		-	-	-	-	-	-	-	-
Selenium		-	-	-	-	-	-	-	-
Thallium		-	-	-	-	-	-	-	-
Mercury		-	-	-	-	-	-	-	-
Tin		-	●●	-	●●	-	●	-	-
Cadmium		-	-	-	-	-	●	-	-
Lead		●●●	●●●●	-	●●	-	**	●●	-
Bromine		●	●	-	-	-	-	-	-

Key

NA	=	Not Analyzed
-	=	Not Detected/Below Detection Limits
●	=	trace - 50 ppm
●●	=	51 - 250 ppm
●●●	=	251- 500 ppm
●●●●	=	501 - 1000 ppm
**	=	> 1000 ppm
Dup.	=	Duplicate Sample
BLK	=	Field Blank
SS	=	Soil Sample/Sediment Sample
SW	=	Surface Water Sample

1 All samples were screened in-house by NUS Chemists utilizing a Kevex 7000 x-ray fluorescence instrument. The results are qualitative and indicate the presence of the above elements. All concentrations are given in ranges as the results must not be interpreted as being quantitative. All the reported ranges of concentration are relative to control standards run during the analysis.

TABLE 5
METAL IN-HOUSE SCREENING[1] OF SURFACE WATER, SEDIMENT AND SOIL SAMPLES
PAGE TWO

TENTATIVELY IDENTIFIED	Station Location:	SS07	SS08	SW04	SS09	SW05	SW10	SS12 BLK	SW06 BLK
	EPA Sample No.:	12960	12962	12963	12964	12965	12966	12968	12969
TASK 1									
Aluminum					Not Analyzed				
Chromium		-	●●	-	-	-	●●	●●	-
Barium		●●●	●●●	-	●●	-	●●●	●●●●	-
Beryllium					Not Analyzed				
Cobalt		-	-	-	-	-	-	-	-
Copper		●●●●	●●●●	-	●●●●	-	●●●●	●●	-
Iron		N/A	N/A	-	N/A	-	-	N/A	-
Nickel		-	●●	-	●●	-	●●	●●	-
Manganese		●●●●	●●●	-	●●●	-	**	●●●●	-
Zinc		●●●●	●●●●	-	●●●	-	**	●●●	-
Boron					Not Analyzed				
Vanadium		-	-	-	-	-	-	-	-
Silver		-	-	-	-	-	-	-	-
TASK 2									
Arsenic		-	-	-	-	-	-	-	-
Antimony		-	-	-	-	-	-	-	-
Selenium		-	-	-	-	-	-	-	-
Thallium		-	-	-	-	-	-	-	-
Mercury		-	-	-	-	-	-	-	-
Tin		-	●●	-	●●	-	●	-	-
Cadmium		-	-	-	-	-	●	-	-
Lead		●●●	●●●●	-	●●	-	**	●●	-
Bromine		●	●	-	-	-	-	-	-

Key

NA	=	Not Analyzed
-	=	Not Detected/Below Detection Limits
●	=	trace - 50 ppm
●●	=	51 - 250 ppm
●●●	=	251- 500 ppm
●●●●	=	501 - 1000 ppm
**	=	> 1000 ppm
Dup.	=	Duplicate Sample
BLK	=	Field Blank
SS	=	Soil Sample/Sediment Sample
SW	=	Surface Water Sample

1 All samples were screened in-house by NUS Chemists utilizing a Kevex 7000 x-ray fluorescence instrument. The results are qualitative and indicate the presence of the above elements. All concentrations are given in ranges as the results must not be interpreted as being quantitative. All the reported ranges of concentration are relative to control standards run during the analysis.

TABLE 6
POLYCHLORINATED BIPHENYLS (PCB) IN-HOUSE SCREENING[1] OF SOIL AND SEDIMENT SAMPLES

TENTATIVELY IDENTIFIED		Station Location:	SS04	SS05	SS06	SS07	SS08	SS09	SS10	SS12
		EPA Sample No.:	12954	12955	12958	12960	12962	12964	12966	12968
PCB 1242	2		-	-	-	-	-	●	-	-
PCB 1248	2		●●●	-	-	-	-	-	-	-
PCB 1254	2		-	-	-	-	-	●	-	-
PCB 1260	2		-	-	-	-	-	-	-	-
unidentified compounds	-		-	D*	D*	D	D*	-	D*	-

Key
D = Detected, not quantitated
* = Similiar peak pattern
\- = not detected
● = trace - 25 ppm
●● = 25 - 50 ppm
●●● = 51 - 100 ppm
Dup. = Duplicate Samples
BLK = Field Blank
SS = Soil Sample/Sediment Sample

1 The above results are from NUS/FIT in-house screening using an AID 511-06 gas chromatograph. all results must be interpreted with the understanding that they represent the end product of a screening technique and that the reported values are only approximate. This technique is not meant to replace analysis using greater sophistication and analytical control. The in-house PCB screening results are based on wet weight.

TABLE 7
VOLATILE ORGANIC ANALYSIS (CLP) OF
CONRAIL RAILYARD SEDIMENT/SOIL SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

Sample Location	SS01	SS01 Dup	SS02	SS03	SS04	SS06	SS09	SS10	SS12 Blk
Traffic Report No.	AB875	AB876	AB877	AB878	AB879	AB880	AB881	AB882	AB883
EPA Sample No.	12950	12951	12970	12953	12954	12958	12964	12966	12968
HAZARDOUS SUBSTANCE LIST VOLATILES									
acrolein	-	-	-	-	-	-	-	-	-
acrylonitrile	-	-	-	-	-	-	-	-	-
benzene	-	-	-	-	-	-	-	-	-
carbon tetrachloride	-	-	-	-	-	-	-	-	-
1,2-dichloroethane	-	-	-	-	-	-	-	-	-
1,1,1-trichloroethane	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	-	-	-	-	-	-	-	-	-
i,1,2-trichloroethane	-	-	-	-	-	-	-	-	-
1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	-	-
chloroethane	-	-	-	-	-	-	-	-	-
2-chloroethylvinyl ether	-	-	-	-	-	-	-	-	-
chloroform	-	-	-	-	*	*	-	-	-
1,1-dichloroethane	-	-	-	-	-	-	-	-	-
trans-1,2-dichloroethene	-	-	-	-	-	-	-	-	-
1,2-dichloropropane	-	-	-	-	-	-	-	-	-
trans-1,3-dichloropropene	-	-	-	-	-	-	-	-	-
cis-1,3-dichloropropene	-	-	-	-	-	-	-	-	-
ethylbenzene	-	-	-	-	-	-	-	-	-
methylene chloride	*	*	*	*	*	*	*	*	*
chloromehtane	-	-	-	-	-	-	-	-	-
bromomethane	-	-	-	-	-	-	-	-	-
bromoform	-	-	-	-	-	-	-	-	-
bromodichloromethane	-	-	-	-	-	-	-	-	-
fluorotrichloromethane	-	-	-	-	-	-	-	-	-
dichlorodifluoromethane	-	-	-	-	-	-	-	-	-
chlorodibromomethane	-	-	-	-	-	-	-	-	-
tetrachloroethene	-	-	-	-	-	-	-	-	-
toluene	*	*	*	-	-	-	-	-	*
trichloroethene	-	-	*	*	-	-	-	-	-
vinyl chloride	-	-	-	-	-	-	-	-	-
NON-HAZARDOUS SUBSTANCE LIST VOLATILES									
acetone	*	*	*	*	*	*	*	*	*
2-butanone	*	*	*	-	*	-	*	*	-
carbondisulfide	-	-	-	-	-	-	-	-	-
2-hexane	-	-	-	-	-	-	-	-	-
4-methyl-2-pentanone	-	-	-	-	-	-	-	-	-
styrene	-	-	-	-	-	-	-	-	-
vinyl acetate	-	-	-	-	-	-	-	-	-
total-xylene	7	10	-	-	-	-	-	12	-

Key
- = Not Detected
J * = Approximate value due to Quality Control
* = Rejected value due to Quality Control
BLK = Field Blank
DUP = Duplicate sample
CLP = Contract Laboratory Program

TABLE 8
EXTRACTABLE ORGANIC ANALYSIS (CLP) OF
CONRAIL RAILYARD SEDIMENT/SOIL SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST
BASE/NEUTRAL COMPOUNDS

Sample Location Traffic Report No. EPA Sample No.	SS01 AB875 12950	SS01 Dup AB876 12951	SS02 AB877 12970	SS03 AB878 12953	SS04 AB879 12954	SS06 AB880 12958	SS09 AB881 12964	SS10 AB882 12966	SS12 BLK AB883 12968
acenaphthene	-	-	-	-	-	530	550	360	-
benzidine	-	-	-	-	-	-	-	-	-
1,2,4-trichlorobenzene	-	-	-	-	-	-	-	-	-
hexachlorobenzene	-	-	-	-	-	-	-	-	-
hexachlorethane	-	-	-	-	-	-	-	-	-
bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-	-
2-chloronaphthalene	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	-	-	-	-	-	-	-	-	-
3,3-dichlorobenzidine	-	-	-	-	-	-	-	-	-
2,4-dinitrotoluene	-	-	-	-	-	-	-	-	-
2.6-dinitrotoluene	-	-	-	-	-	-	-	-	-
fluoranthene	-	-	-	-	*	5,800	8,200	3,100	-
4-chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-
4-bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-
bis (2-chloroisopropyl) ether	-	-	-	-	-	-	-	-	-
bis (2-chloroethoxy) methane	-	-	-	-	-	-	-	-	-
hexachlorobutadiene	-	-	-	-	-	-	-	-	-
hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-
isophorone	-	-	-	-	-	-	-	-	-
naphthalene	-	-	-	-	-	*	440	*	-
nitrobenzene	-	-	-	-	-	-	-	-	-
N-nitrosodiphenylamine	-	-	-	-	-	-	-	3,900J	*
N-nitroso-di-n-propylamine	-	-	-	-	-	-	-	-	-
bis (2-ethylhexyl) phthalate	-	-	-	-	-	*	15,000J	44,000	*
benzyl butyl phthalate	-	-	-	-	-	-	-	-	-
di-n-butyl phthalate	-	-	-	-	-	-	-	-	-
di-n-octyl phthalate	-	-	-	-	-	-	-	-	-
diethyl phthalate	-	-	-	-	-	-	-	-	*
dimethyl phthalate	-	-	-	-	-	-	-	-	-
benzo(a)anthracene	-	-	-	-	-	3,600	5,900	2,100	-
benzo(a)pyrnen	-	-	-	-	-	2,200	4,300	1,300	-
benzo(b)fluoranthene	-	-	-	-	-	2,800	5,200	1,800	-
benzo(k)fluoranthene	-	-	-	-	-	1,900	2,000	1,100	-
chrysnen	-	-	-	-	-	2,500	4,000	1,400	-
acenaphthylene	-	-	-	-	-	*	790	*	-
anthracene	-	-	-	-	-	1,000	990	420	-
benzo(ghi)perylene	-	-	-	-	-	1,600	3,500	1,200	-
fuorene	-	-	-	-	-	810	680	390	-
phenanthrene	-	-	-	-	*	6,200	7,900	2,400	-
dibenzo(a,h)anthracene	-	-	-	-	-	970	1,500	450	-
indenol(1,23-cd)pyrene	-	-	-	-	-	1,300	2,800	950	-
pyrene	-	-	-	-	*	6,100	8,700	2,800	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
BLK = Field Blank
DUP = Duplicate sample
CLP = Contract Laboratory Sample

TABLE 8
EXTRACTABLE ORGANIC ANALYSIS (CLP) OF
CONRAIL RAILYARD SEDIMENT/SOIL SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST
BASE/NEUTRAL COMPOUNDS

Sample Location Traffic Report No. EPA Sample No.	SS01 AB875 12950	SS01 Dup AB876 12951	SS02 AB877 12970	SS03 AB878 12953	SS04 AB879 12954	SS06 AB880 12958	SS09 AB881 12964	SS10 AB882 12966	SS12 BLK AB883 12968
acenaphthene	-	-	-	-	-	530	550	360	-
benzidine	-	-	-	-	-	-	-	-	-
1,2,4-trichlorobenzene	-	-	-	-	-	-	-	-	-
hexachlorobenzene	-	-	-	-	-	-	-	-	-
hexachlorethane	-	-	-	-	-	-	-	-	-
bis(2-chloroethyl)ether	-	-	-	-	-	-	-	-	-
2-chloronaphthalene	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	-	-	-	-	-	-	-	-	-
3,3-dichlorobenzidine	-	-	-	-	-	-	-	-	-
2,4-dinitrotoluene	-	-	-	-	-	-	-	-	-
2.6-dinitrotoluene	-	-	-	-	-	-	-	-	-
fluoranthene	-	-	-	-	*	5,800	8,200	3,100	-
4-chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-
4-bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-
bis (2-chloroisopropyl) ether	-	-	-	-	-	-	-	-	-
bis (2-chloroethoxy) methane	-	-	-	-	-	-	-	-	-
hexachlorobutadiene	-	-	-	-	-	-	-	-	-
hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-
isophorone	-	-	-	-	-	-	-	-	-
naphthalene	-	-	-	-	-	*	440	*	-
nitrobenzene	-	-	-	-	-	-	-	-	-
N-nitrosodiphenylamine	-	-	-	-	-	-	-	3,900J	*
N-nitroso-di-n-propylamine	-	-	-	-	-	-	-	-	-
bis (2-ethylhexyl) phthalate	-	-	-	-	-	*	15,000J	44,000	*
benzyl butyl phthalate	-	-	-	-	-	-	-	-	-
di-n-butyl phthalate	-	-	-	-	-	-	-	-	-
di-n-octyl phthalate	-	-	-	-	-	-	-	-	-
diethyl phthalate	-	-	-	-	-	-	-	-	*
dimethyl phthalate	-	-	-	-	-	-	-	-	-
benzo(a)anthracene	-	-	-	-	-	3,600	5,900	2,100	-
benzo(a)pyrnen	-	-	-	-	-	2,200	4,300	1,300	-
benzo(b)fluoranthene	-	-	-	-	-	2,800	5,200	1,800	-
benzo(k)fluoranthene	-	-	-	-	-	1,900	2,000	1,100	-
chrysnen	-	-	-	-	-	2,500	4,000	1,400	-
acenaphthylene	-	-	-	-	-	*	790	*	-
anthracene	-	-	-	-	-	1,000	990	420	-
benzo(ghi)perylene	-	-	-	-	-	1,600	3,500	1,200	-
fuorene	-	-	-	-	-	810	680	390	-
phenanthrene	-	-	-	-	*	6,200	7,900	2,400	-
dibenzo(a,h)anthracene	-	-	-	-	-	970	1,500	450	-
indenol(1,23-cd)pyrene	-	-	-	-	-	1,300	2,800	950	-
pyrene	-	-	-	-	*	6,100	8,700	2,800	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
BLK = Field Blank
DUP = Duplicate sample
CLP = Contract Laboratory Sample

TABLE 9
EXTRACTABLE ORGANIC ANALYSIS (CLP) OF CONRAIL RAILYARD SEDIMENT/SOIL SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST
ACID COMPOUNDS

Sample Location Traffic Report No. EPA Sample No.	SS01 AB875 12950	SS01 Dup AB876 12951	SS02 AB877 12970	SS03 AB878 12953	SS04 AB879 12954	SS06 AB880 12958	SS09 AB881 12964	SS10 AB882 12966	SS12 BLK AB883 12968
N-Nitrosodimethylanine	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-
Aniline	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-	-	-	-	-
2-Methylphenol	-	-	-	-	-	-	-	-	-
4-Methylphenol	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-	-	-	-	-
Benzoic Acid	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-
4-Chloroanile	-	-	-	-	-	-	-	-	-
4-Chloro-3-Methylphenol	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-	*	380	340	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-
Dibenzofuran	-	-	-	-	-	420	500	-	-
4-Nitroaniline	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-Methylphenol	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
Dup = Duplicate sample
BLK = Field Blank
CLP = Contract Laboratory Program

TABLE 10
PESTICIDE ANALYSIS (CLP) OF CONRAIL RAILYARD SEDIMENT/SOIL SAMPLES

Samples collected May 23, 1985
Results in parts per million (ppm)

HAZARDOUS SUBSTANCE LIST

Sample Location Traffic Report No. EPA Sample No.	SS01 AB875 12950	SS01 Dup AB876 12951	SS02 AB877 12970	SS03 AB878 12953	SS04 AB879 12954	SS06 AB880 12958	SS09 AB881 12964	SS10 AB882 12966	SS12 BLK AB883 12968
Alpha-BHC	-	-	-	-	-	-	-	-	-
Beta-BHC	-	-	-	-	-	-	-	-	-
Delta-BHC	-	-	-	-	-	-	-	-	-
Gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-
Heptachlor	-	-	-	-	-	-	-	-	-
Aldrin	-	-	-	-	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-	-	-	-	-
Endosulfan I	-	-	-	-	-	-	-	-	-
Dieldrin	-	-	-	-	-	-	-	-	-
4,4'-DDE	-	-	-	-	-	-	-	-	-
Endvin	-	-	-	-	-	-	-	-	-
Endosulfan H	-	-	-	-	-	-	-	-	-
4,4'-DDD	-	-	-	-	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-	-	-	-	-
4,4'-DDT	-	-	-	-	-	-	-	-	-
Methoxychlor	-	-	-	-	-	-	-	-	-
Endrin Ketone	-	-	-	-	-	-	-	-	-
Chlordane	-	-	-	-	-	-	-	-	-
Toxaphene	-	-	-	-	-	-	-	-	-
Aroclor-1016	-	-	-	-	-	-	-	-	-
Aroclor-1221	-	-	-	-	-	-	-	-	-
Aroclor-1232	-	-	-	-	-	-	-	-	-
Aroclor-1242	22,000J	43,000J	17,000J	15,000J	-	3.40J	21.0J	53.J	-
Aroclor-1248	-	-	-	-	250J	-	-	-	-
Aroclor-1254	-	-	-	-	-	1.0J	6.20J	-	-
Aroclor-1260	-	-	-	-	-	-	-	-	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
Dup = Duplicate sample
BLK = Field Blank
CLP = Contract Laboratory Program

TABLE 11
VOLATILE ORGANIC ANALYSIS (CLP) OF CONRAIL RAILYARD SURFACE WATER SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

Sample Location	SW01	SW01Dup	SW04	SW05	SW06 BLK
Traffic Report No.	AB870	AB871	AB872	AB873	AB874
EPA Sample No.	12956	12957	12963	12965	12969
HAZARDOUS SUBSTANCE LIST VOLATILES					
acrolein	-	-	-	-	-
acrylonitrile	-	-	-	-	-
benzene	*	*	*	*	*
carbon tetrachloride	-	-	-	-	-
1,2-dichloroethane	-	-	-	-	-
1,1,1-trichloroethane	-	-	*	-	-
1,1-dichloroethane	-	-	-	-	-
1,1,2-trichloroethane	-	-	-	-	-
1,1,2,2-tetrachloroethane	-	-	-	-	-
chloroethane	-	-	-	-	-
2-chloroethylvinyl ether	-	-	-	-	-
chloroform	-	-	-	-	*
1,1-dichloroethane	-	-	-	-	-
trans-1,2-dichloroethene	-	-	-	-	-
1,2-dichloropropane	-	-	-	-	-
trans-1,3-dichloropropene	-	-	-	-	-
cis-1,3-dichloropropene	-	-	-	-	-
ethylbenzene	-	-	-	-	-
methylene chloride	*	*	*	*	*
chloromehtane	-	-	-	-	-
bromomethane	-	-	-	-	-
bromoform	-	-	-	-	-
bromodichloromethane	-	-	-	-	-
fluorotrichloromethane	-	-	-	-	-
dichlorodifluoromethane	-	-	-	-	-
chlorodibromomethane	-	-	-	-	-
tetrachloroethene	-	-	-	-	-
toluene	-	*	*	-	*
trichloroethene	-	-	-	*	-
vinyl chloride	-	-	-	-	-
NON-HAZARDOUS SUBSTANCE LIST VOLATILES					
acetone	*	-	*	*	*
2-butanone	*	-	*	*	-
carbondisulfide	-	-	-	-	-
2-hexane	-	-	-	-	-
4-methyl-2-pentanone	-	-	-	-	-
styrene	-	-	-	-	-
vinyl acetate	-	-	-	-	-
total-xylene	-	-	-	-	-

key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
BLK = Field Blank
CUP = Duplicate sample
CLP = Contract Laboratory Program

TABLE 12
EXTRACTABLE ORGANIC ANALYSIS (CLP) OF
CONRAIL RAILYARD SURFACE WATER SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST
BASE/NEUTRAL COMPOUNDS

Sample Location Traffic Report No. EPA Sample No.	SW01 AB870 12956	SW01 Dup AB871 12957	SW04 AB872 12963	SW05 AB873 12965	SW06 BLK AB874 12969
acenaphthene	-	-	-	-	-
benzidine	-	-	-	-	-
1,2,4-trichlorobenzene	-	-	-	-	-
hexachlorobenzene	-	-	-	-	-
hexachlorethane	-	-	-	-	-
bis(2-chloroethyl)ether	-	-	-	-	-
2-chloronaphthalene	-	-	-	-	-
1,2-dichlorobenzene	-	-	-	-	-
1,3-dichlorobenzene	-	-	-	-	-
1,4-dichlorobenzene	-	-	-	-	-
3,3-dichlorobenzidine	-	-	-	-	-
2,4-dinitrotoluene	-	-	-	-	-
2.6-dinitrotoluene	-	-	-	-	-
fluoranthene	-	-	-	-	-
4-chlorophenyl phenyl ether	-	-	-	-	-
4-bromophenyl phenyl ether	-	-	-	-	-
bis (2-chloroisopropyl) ether	-	-	-	-	-
bis (2-chloroethoxyl) methane	-	-	-	-	-
hexachlorobutadiene	-	-	-	-	-
hexachlorocyclopentadiene	-	-	-	-	-
isophorone	-	-	-	-	-
naphthalene	-	-	-	-	-
nitrobenzene	-	-	-	-	-
N-nitrosodiphenylamine	-	-	-	-	-
N-nitroso-di-n-propylamine	-	-	-	-	-
bis (2-ethylhexyl) phthalate	-	*	-	-	-
benzyl butyl phthalate	-	-	-	-	-
di-n-butyl phthalate	-	-	-	-	-
di-n-octyl phthalate	-	*	-	-	-
diethyl phthalate	-	-	-	-	-
dimethyl phthalate	-	-	-	-	-
benzo(a)anthracene	-	-	-	-	-
benzo(a)pyrnen	-	-	-	-	-
benzo(b)fluoranthene	-	-	-	-	-
benzo(k)fluoranthene	-	-	-	-	-
chrysnen	-	-	-	-	-
acenaphthylene	-	-	-	-	-
anthracene	-	-	-	-	-
benzo(ghi)perylene	-	-	-	-	-
fuorene	-	-	-	-	-
phenanthrene	-	-	-	-	-
dibenzo(a,h)anthracene	-	-	-	-	-
indenol(1,23-cd)pyrene	-	-	-	-	-
pyrene	-	-	-	-	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
BLK = Field Blank
DUP = Duplicate sample
CLP = Contract Laboratory Sample

TABLE 13
EXTRACTABLE ORGANIC ANALYSIS (CLP) OF CONRAIL RAILYARD SURFACE WATER SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST
ACID COMPOUNDS

Sample Location	SW01	SW01 Dup	SW04	SW05	SW06 BLK
Traffic Report No.	AB875	AB876	AB877	AB878	AB879
EPA Sample No.	12950	12951	12970	12953	12954
N-Nitrosodimethylanine	-	-	-	-	-
Phenol	-	-	-	-	-
Aniline	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
2-Methylphenol	-	-	-	-	-
4-Methylphenol	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
Benzoic Acid	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
4-Chloroanile	-	-	-	-	-
4-Chloro-3-Methylphenol	-	-	-	-	-
2-Methylnaphthalene	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Dibenzofuran	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-Methylphenol	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-

Key

- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
Dup = Duplicate sample
BLK = Field Blank
CLP = Contract Laboratory Program

TABLE 14
PESTICIDE ANALYSIS (CLP) OF
CONRAIL RAILYARD SURFACE WATER SAMPLES

Samples collected May 23, 1985
Results in parts per billion (ppb)

HAZARDOUS SUBSTANCE LIST

Sample Location	SW01	SW01 Dup	SW04	SW05	SW06 BLK
Traffic Report No.	AB870	AB871	AB872	AB873	AB874
EPA Sample No.	12956	12957	12963	12965	12969
Alpha-BHC	-	-	-	-	-
Beta-BHC	-	-	-	-	-
Delta-BHC	-	-	-	-	-
Gamma-BHC (Lindane)	-	-	-	-	-
Heptachlor	-	-	-	-	-
Aldrin	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Dieldrin	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
Endvin	-	-	-	-	-
Endosulfan II	-	-	-	-	-
4,4'-DDD	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Chlordane	-	-	-	-	-
Toxaphene	-	-	-	-	-
Aroclor-1016	-	-	-	-	-
Aroclor-1221	-	-	-	-	-
Aroclor-1232	-	-	-	-	-
Aroclor-1242	-	-	-	-	-
Aroclor-1248	-	-	-	-	-
Aroclor-1254	-	-	-	-	-
Aroclor-1260	-	-	-	-	-

Key
- = Not Detected
J = Approximate value due to Quality Control
* = Rejected value due to Quality Control
Dup = Duplicate sample
BLK = Field Blank
CLP = Contract Laboratory Program

Soil samples (SS01A, SS01B, SS02, SS03 and SS04) collected in the railyard were characterized as having a cohesive property. Upon collection of the samples, the soil held together firmly and appeared to contain an oily sheen. The results of CLP analyses for the four soil sample locations in the railyard are presented in Tables 7 to 10. Volatile organic contamination was detected at sample location SS01. A concentration of 7 to 10 J ppb of xylene was found at location SS01 (Note "J" indicates that quantitation is approximate). The presence of xylene in sample SS01 was not confirmed by NUS in-house analytical techniques because CLP detection limits were below NUS in-house instrument detection limits for this aromatic compound. Trace levels of trichloroethylene were detected in soil sample SS03 by NUS in-house analytical techniques (Table 4).

Semivolatile hazardous organic compounds were not detected in the railyard soil samples during this Site Inspection (Tables 8-9). However, the high analytical detection limits should be noted. Due to the high concentration of PCBs detected in the soil samples in the railyard, it was necessary for a medium level protocol, concentration greater than 20,000 ppb, to be performed by the CLP laboratory. Therefore, the potential exists that the semivolatile compounds were diluted out of the sample prior to analysis.

Table 10 presents the results of pesticide CLP analysis for the four soil sample locations in the railyard. Substantially high concentrations of Aroclor 1242 were detected at locations SS01 to SS03 in the areas of alleged PCB spillage. The concentration of Aroclor 1242 detected in the railyard was 15,000 J ppm at location SS03, 17,000 J ppm at location SS02, and 22,000 J to 43,000 J ppm at location SS01. At location SS04, approximately 30 feet east of location SS03 along the 'alternate' railroad line, an elevated concentration of 250 J ppm of Aroclor 1248 was detected.

The presence of Aroclor 1248 was also confirmed by NUS in-house analytical techniques and is presented in Table 6. Aroclor 1242 was not detected by neither CLP nor NUS in-house analysis at this sample location.

The results of in-house metal screening of the four soil sample locations in the railyard are presented in Table 5. Based upon the data presented by Shacklette and Boerngen in "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States", the concentration of metals detected in the railyard soil samples are within the typical ranges of background metals for soil in the coastal New England area with the following exceptions (16):

Element	Concentration Range of Background Metals for Soils (13)	Concentration Range detected in Railyard Soil Samples/Location
Chromium	20-50 ppm	51-250 ppm at SS04
Copper	10-30 ppm	51-1000 ppm at SS01 to SS04
Nickel	5-15 ppm	51-250 ppm at SS03
Manganese	150-700 ppm	500-1000 ppm at SS03 and SS04
Zinc	17-45 ppm	251->1000 ppm at SS01 to SS04
Lead	10-15 ppm	51-500 ppm at SS01 to SS04

The concentration of these metals in comparison with the naturally occurring metal concentrations in soil appears to be elevated above background levels.

B) Surface Water Route

The compacted cobblestones covering the railyard's surface could act as an impediment to contamination migrating directly into the sediment. It is impossible to determine at this time, based upon the number of limited samples collected, if the contamination within the culvert has migrated from the railyard. However, contaminants detected in the sediment and surface water in the culvert would certainly impact the Acushnet River, into which the culvert discharges.

During the collection of sediment samples in the culvert and along the shoreline, a layer of black sediment with an oily, metallic sheen was observed approximately one to two inches below the sediment surface at groundwater level. When the black, oily sediment was disturbed, an oily film was released on top of the water.

The results of CLP analyses for the sediment and water samples collected in the culvert and along the Acushnet River are presented in Tables 7 to 14. Volatile organic contamination was not detected by CLP analysis in any of the surface water samples collected in the culvert and along the shoreline (Table 11). Volatile organic contamination was detected in background sediment sample SS10 (Table 7). The sample, collected at the farthest point upstream in the culvert next to the unpaved parking lot (Figure 2), contains 12 J ppb of xylenes. The presence of xylenes in samples SS10 was confirmed by NUS in-house analytical screening techniques as noted below.

The results of the NUS in-house analysis for sediment and water samples collected in the culvert and along the Acushnet River's shoreline are presented in Table 4. Numerous aromatic and chlorinated hydrocarbons (benzene, chlorobenzene, ethylbenzene, tetrachloroethylene, toluene, trichloroethylene, xylene) were detected in sediment samples SS08 and SS10, and surface water sample SW05. The highest concentrations were detected in the sediment at location SS10 where moderate levels of xylenes and chlororbenzene were detected along with trace levels of other aromatic and chlorinated hydrocarbons. The CLP results of sediment sample SS08 and SS10, and surface water sample SW05 did not indicate the presence of any of the aromatic and chlorinated hydrocarbons with the exception of xylene; however, NUS/FIT's detection limits were below CLP detection limits for these compounds.

Tables 8, 9, 12 and 13 present the results of CLP semivolatile organic analysis for sediment and surface water samples. Semivolatile organic contaminants were not detected in any of the surface water samples (Tables 12,13). Numerous polynuclear aromatic hydrocarbons (PAHs) were detected in sediment samples SS06, SS09 and SS10. The concentration of PAHs detected ranges from 0.39 ppm of fluorene in sample SS10 to 8.7 ppm of pyrene in sample SS09. Beside numerous PAH, sample SS10 contains 3.9 J ppm of N-nitrosodiphenylamine and 44 ppm of bis (2-ethylhexyl) phthalate. The phthalate acid ester, bis(2-ethylhexyl) phthalate, was also detected in sample SS09 at a concentration of 15 J ppm, and is a widely used phthalate plasticizer.

The results of CLP pesticide analysis for the sediment and water samples are presented in Tables 10 and 14. There were no pesticide contaminants detected in any water samples collected in the culvert which discharged into the Acushnet River. The sediment samples collected in the culvert were found to contain both Aroclor 1242 and 1254. The highest concentration of pesticide contamination within the culvert exists at location SS10 where 53 J ppm of Aroclor 1242 was detected. Aroclor 1242 and 1254 were detected at both sample locations SS06 and SS09. The contamination detected ranges from 3.4 J ppm to 21.0 J ppm of Aroclor 1242 and 1.0 J ppm to 6.2 J ppm of Aroclor 1254 at sample locations SS06 and SS09 respectively. NUS in-house PCB analysis, presented in Table 6, has confirmed the presence of Aroclors 1242 and 1254 at location SS09.

Table 5 presents the results of NUS in-house metal screening for the sediment and water samples collected in the culvert and along the Acushnet River shoreline. Based upon the data presented by Shacklette and Boerngen in "Element concentrations in Soils and Other Surficial Materials of the Conterminous United States", the concentration of metals detected in the culvert sediment samples are within the typical ranges of background metals for sediments in the coastal New England area with the following exceptions:

Element	Concentration Range of Background Metals for Soils (13)	Concentration Range detected in Culvert Sediment Samples/Location (Table 5)
Chromium	20-50 ppm	51-250 ppm at SS05,SS06,SS08,SS10
Copper	10-30 ppm	501-1000 ppm at SS05 to SS09
Nickel	5-15 ppm	51-250 ppm at SS05
Manganese	150-700 ppm	500-1000 ppm at SS06, SS07,SS10
Zinc	17-45 ppm	251->1000 ppm at SS05 to SS10
Tin	1.5-10 ppm	51-250 ppm at SS05,SS06,SS08,SS09
Lead	10-15 ppm	51->1000 ppm at SS05 to SS10
Cadmium	no range indicated	trace-50 ppm at SS10

The concentration of these metals in the culvert sediment samples in comparison with the naturally occuring metal concentrations in the sediment appears to be elevated above background levels. The results of the water samples collected in the culvert indicate metal concentrations to be either below detection limits or not detected.

C) Air Route

No ambient air readings were detected on site with the HNu during the sampling exercise except when the sediment was disturbed at location SS10. The HNu detected 0.25 ppm total organic compounds within 2 inches of the sediment collected into a 16 oz. glass jar.

CONCLUSIONS AND RECOMMENDATIONS

Several extensive studies have been conducted in the New Bedford Harbor area (Buzzard Bay Basin) since the mid-1970's, documenting the extent of polychlorinated biphenyls (PCBs), heavy metals and organic contamination. The sediments underlying 985 acres of the Acushnet River in the New Bedford/Fairhaven area contain elevated levels of PCBs ranging in concentration from a few parts per million (ppm) to over 100,000 ppm (5). PCBs in the parts per billion range were detected in the New Bedford Harbor water column (5). The polychlorinated biphenyls (PCBs), were produced by the Monsanto Corporation and were shipped to the Conrail Railyard from 1941 until 1977 (5). From 1973 to 1975, Aerovox Incorporated and Cornell Dubilier Electronics Incorporated received approximately 2 million pounds of PCBs per year from the Monsanto Corporation for the use in the production of electronic capacitors (5). Former employees of Aerovox Incorporated and Cornell Dubilier Electronics Incorporated have made allegations indicating multiple spillages have occurred at the Conrail Railyard Site while the PCBs were being transferred from the Monsanto tank car to 55 gallon drums and tank trucks (8).

Results generated by this site investigation indicate the presence of PCB contaminants in the soil at the railyard, and semivolatile organic and PCB contamination of sediments in the culvert located approximately 20 feet north of the railroad tracks. Semivolatile contaminants were not detected in the soil collected in the railyard during CLP analysis. It should be noted that due to the high concentration of PCBs detected in the soil samples during the CLP screening process, it was necessary for the National Contract Laboratory to perform a medium level protocol, concentrations greater than 20,000 ppb, on soil samples SS01 to SS04 instead of the low protocol performed on all of the samples. The potential exists for the semivolatile compounds to have been lost during the dilution of the samples prior to the semivolatile and pesticide CLP analysis. Volatile organic and metal compounds detected in the samples were at concentrations not substantially, ten order of magnitudes, greater than background levels.

The contaminants identified in the railyard during this inspection are consistent with those used by the electronic capacitor industry. The highest PCB concentration exists at location SS01 where 22,000 J to 43,000 J ppm of Aroclor 1242 was detected below a 5 inch layer of cobblestones (Figure 2). The concentration of PCBs detected at location SS01 as well as the concentrations existing at locations SS02 to SS04 are well in excess of EPA's guidelines Code of the Federal Register 47 part 761.60 (17). All contaminated soil with a PCB content in excess of 50 ppm (dry weight) must be disposed in an Annex I incinerator or chemical waste landfill (5). This limit is now in effect on a temporary basis while EPA revises the standard by order of the U.S. Court of Appeals for the District of Columbia (5).

It is impossible to determine the source and extent of PCB contamination in the railyard at present, due to the limited number of samples collected during the Site Inspection. There are two potential sources which may have contributed to the PCB contamination existing in the Conrail Railyard:

- Before the three-mile long hurricane dike was built in the mid-1960's, the Acushnet River reportedly flooded the railyard during hurricane surges. The hurricanes of 1954 and 1960, which occurred in the New Bedford area, may have washed contaminated sediment from the Acushnet River on to the railyard.

- The most likely source of contamination is due to the transportation of PCBs through the Conrail Railyard. Former employees of the Aerovox and Cornell Dubilier Electronics Incorporations have made allegations indicating multiple spillages occurring in the railyard while unloading the PCBs from the tank cars to 55 gallon drums and tank trucks (8).

The possibility exists that PCBs detected in the soil at the railyard may have migrated via surface water and groundwater routes. The unconsolidated deposits of gravel and sand at the site have a potentially high filtration capacity for percolation. In addition, the compacted cobblestones covering the railyards surface may have acted as a partial impediment to contamination migrating directly into the sediment, promoting contaminant migration via surface water runoff. It is impossible to determine if the PCB contamination in the railyard has migrated from the site based upon the limited number of samples collected during the sampling exercise.

The residents of New Bedford are supplied with municipal water from an area north and upgradient of the site. The main receptor of a migration of contaminants will be the Acushnet River and New Bedford Harbor approximately two hundred yards east of the Conrail Railyard Site.

On the basis of this information NUS/FIT offers the following recommendations:

- This site has high priority for further investigative work under CERCLA due to elevated above background levels of PCBs detected in the railyard soil, combined with the active use of the railyard and unrestricted access. The Conrail Railyard Site should be immediately resampled for extractables and PCBs in order to more fully determine the extent and source of contamination and potential need for remedial action.

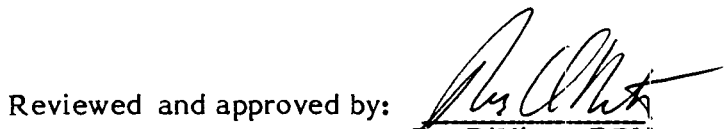
- The potential threat to public health posed by the elevated levels of PCBs in the soil to local workers and community residents should be evaluated and steps should immediately be taken to limit potential exposure. Serious adverse health effects from a single, short-term exposure to PCBs are unlikely, however, there is growing concern about the effects caused by long-term, low level exposure to these compounds. PCBs have a low solubility, are not easily volatilized, and are extremely stable compounds.

- Perform an air monitoring survey for on-site air characterization and the determination of airborne contaminant migration off-site due to the presence of elevated levels of PCBs and extractable compounds at the site, present removal of the railroad tracks during the development of the City of New Bedford's property, and on-going activity in the railyard.

- Future development of the Conrail Railyard Site or in close proximity of site could affect both the levels of contaminant substances and the migration path of these substances. This potential impact would need to be evaluated prior to any new development in this area. The potential impact of the current site development should be immediately evaluated in terms of potential exposure to workers, and potential long term exposure to residents.

Although NUS/FIT recommends that the above measures be incorporated into any further studies, these recommendations are not a commitment by EPA or NUS/FIT to conduct any further activities at this site. Furthermore, these recommendations do not advocate which party or parties (EPA, NUS/FIT, State, Principle Responsible Party, etc.) should be responsible for conducting any further activities at the site.

MML/keb

Reviewed and approved by: 
R. DiNitto, RPM
Date: 3-14-86

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1. U.S. Geological Survey Topographic Map, New Bedford North, Mass., N4137.7-W705.5/7.5, 1979.

2. U.S. Geological Survey Topographic Map, New Bedford South, Mass., N4130-W7052.5/7.5, 1977.

3. Williams, John R. and Tasker, Gary D., Water Resources of the Coastal Drainage Basins of Southeastern Massachusetts, Northwest Shore of Buzzards Bay, 1:48,000, Atlas HA-560 U.S. Geological Survey, 1978.

4. Buzzard's Bay Basin, 1976, Water Quality Managment Plan, Massachusetts Division of Water Pollution Control, Westborough, Massachusetts, January 1977.

5. PCB Pollution in the New Bedford, Massachusetts Area: A Status Report, Massachusetts Coastal Zone Managament, June 1982, Revised January 1983.

6. Telecon, 5/9/85, between Richard Pline (Housing Seventy Corporation) and Martha Meyers Lee (NUS/FIT).

7. Telecon, 5/22/85, between Charlie Bering (ORC/EPA) and Martha Meyers Lee (NUS/FIT).

8. U.S. Environmental Protection Agency, Region I, files.

9. New Bedford Environmental Investigation-Sampling and Analysis of Municipal Sewerage Lines and Bottom Sediments in the Vicinity of Sewerage Outfalls for Polychlorinated Biphenyls, Vol. 3, GCA Corporation, Bedford, MA., May 1983.

10. Telecon, 8/5/85, between S. Joyce (Region I EPA, RSPO) and Martha Meyers Lee (NUS/FIT).

11. Telecon, 9/11/85, between S. Joyce (Region I EPA, RSPO) and Martha Meyers Lee (NUS/FIT).

12. Hydrologic Data of the Coastal Drainage Basins of Southeastern Massachusetts, Northwest Shore of Buzzards Bay, Massachusetts Hydrologic Data-Report No. 20, U.S. Geological Survey, 1980.

13. Telecon, 9/19/85, between Leo Strahoska (New Bedford Department of Waterworks, Engineer) and Martha Meyers Lee (NUS/FIT).

14. Telecon, 9/20/85, between Buck Buchanin (Maintenance Department of St. Luke's Hospital) and Martha Meyers Lee (NUS/FIT).

DRAFT

NOV 1 1984

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT AND HRS EVALUATION Part 1 - Site Information	Identification U.S. EPA FINDS # MAD931063985

1.1 SITE NAME AND LOCATION

Site Name (Legal, common, or descriptive name of site)	Street, Route # or specific location identifier			
Conrail Railyard	Route 18			
City	**State**	**Zip Code**	**County**	
New Bedford	MA	02741	Bristol	

Coordinates		Topographic Map and Edition	Location on Map (e.g., sector)
Latitude	Longitude		
70°55'45"	41°38'42"	USGS, New Bedford North Quadrangle, 7.5 Series 1979	UTM:339,588 meters E 12,314 meters N (based on ~~1000 meters~~)

1.2 OWNERSHIP - CURRENT

Name (Leasee)	Name (AT TIME OF LAST DEPOSIT OF WASTE)
Consolidated Rail Corporation	Penn Central Corporation
Street Address (PO Box, RFD #, etc.)	**Street Address (PO Box, RFD #, etc.)**
15 North 32nd Street	3102 I.V.B. Bldg., 1700 Market Street
City / State / Zip Code	**City / State / Zip Code**
Philadelphia / PA / 19104	Philadelphia / PA / 19103

History of Ownership: indicate order by 1 = most recent				Years of Deposition of Waste
Federal	County	Private 1	Other	Beginning Year 1941
State	Municipal	GOCO	Unknown	Ending Year 1977

1.3 CHECKLIST FOR PERMITTED RELEASES (FEDERAL OR STATE COOPERATIVE AGREEMENT)

	NPDES	AIR	RCRA INTERIM STATUS	RCRA PERMIT	OTHER
Status of Most Recent Permit	No	No	No	No	
Record of Violations?	No	No	No	No	

What aspects of the site are not covered by these permits?

1.4 TYPES OF SAMPLES TAKEN

GW	Sediment X	Soil X	Leachate
SW X	Air	Waste	Biological

1.5 DATES OF ACTIONS TAKEN AT THIS SITE OR REFERENCE NUMBER FOR SUMMARIES

	Removal	Remedial	Legal
Federal			
State			
Other			

1.6 DOCUMENTATION HISTORY (ENTER DATES OF REPORTS ON FILE)

ERIS Entry	Prelim. Assessment	Field Inspection Reports (also reference # if referenced)
MAD931063985	NUS/FIT Region June 4, 1985	

DRAFT

NOV 1 1984

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT AND HRS EVALUATION
Part 1 - Site Information

Identification
U.S. EPA FINDS #
MAD931063985

1.1 SITE NAME AND LOCATION

Site Name (Legal, common, or descriptive name of site)		Street, Route # or specific location identifier		
Conrail Railyard		Route 18		
City: New Bedford	State: MA	Zip Code: 02741	County: Bristol	

Coordinates: Latitude	Coordinates: Longitude	Topographic Map and Edition	Location on Map (e.g., sector)
70°55' 45"	41°38'42"	USGS, New Bedford North Quadrangle, 7.5 Series 1979	UTM:339,588 meters E 12,314 meters N(based on 1000 meters)

1.2 OWNERSHIP - CURRENT

Name	Street Address (PO Box, RFD #, etc.)	City	State	Zip Code
Housing Seventy Corporation	City Hall,Rm 215, 313 William St.	New Bedford	MA	02740

AT TIME OF LAST DEPOSIT OF WASTE

Name	Street Address (PO Box, RFD #, etc.)	City	State	Zip Code
Penn Central Corporation	3102 I.V.B. BLdg, 1700 Market Street	Philadelphia	PA	19103

History of Ownership: indicate order by 1 = most recent

				Years of Deposition of Waste
Federal	County	Private 2	Other	Beginning Year 1941
State	Municipal 1	COCO	Unknown	Ending Year 1977

1.3 CHECKLIST FOR PERMITTED RELEASES (FEDERAL OR STATE COOPERATIVE AGREEMENT)

	NPDES	AIR	RCRA INTERIM STATUS	RCRA PERMIT	OTHER
Status of Most Recent Permit	No	No	No	No	
Record of Violations?	No	No	No	No	

What aspects of the site are not covered by these permits?

1.4 TYPES OF SAMPLES TAKEN

GW	Sediment X	Soil X	Leachate
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	Removal	Remedial	Legal
Federal			
State			
Other			

1.6 DOCUMENTATION HISTORY (ENTER DATES OF REPORTS ON FILE)

CERCLIS Entry	Prelim. Assessment	Field Inspection Reports (also reference # if referenced)
MAD981063985	NUS/FIT Region I June 4, 1985	

NUS CORPORATION
SUPERFUND DIVISION

INTERNAL CORRESPONDENCE

C-583-3-6-33

MARCH 14, 1986

TO: **DON SMITH/EPA**

FROM: **MARTHA MEYERS LEE** MPL

DATE: **FILE**

COPIES:

SUBJECT: **CONRAIL RAILYARD FINAL SITE INSPECTION REPORT**
TDD No. FI-8503-12
Reference No. $300MA35-SI

Please find enclosed three (3) copies of the Final Site Inspection (SI) package for the Conrail Railyard Site located on Route 18 in New Bedford, Massachusetts, CERCLIS No. MAD981063985. The SI package consists of a letter report and the EPA Site Inspection Form.

This package was prepared in response to Technical Directive Document FI-8503-12 and constitutes completion of the Site Inspection of the subject facility.

ML/rlr

cc: T. Centi/ZPMO (w/enclosures)
J. Prince/EPA (w/enclosures)
S. Joyce/EPA (w/enclosures)
R. Smith/REMPO (w/enclosures)
R. DiNitto (w/o enclosures)
J. Morin (w/o enclosures)
T. Plant (w/o enclosures)
N. Demorest (w/o enclosures)