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Preliminary Site Assessment Report Derecktor Shipyard

Middletown, RI

Northern Division
Naval Facilities Engineering Command

Contract No. N62472-90-D-1298

Contract Task Order 0100

May 1993

Halliburton NUS
CORPORATION

5060-033-300

PRELIMINARY SITE ASSESSMENT REPORT DERECKTOR SHIPYARD MIDDLETOWN, RHODE ISLAND

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Northern Division
Environmental Branch, Code 18
Naval Facilities Engineering Command
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May 1993

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LIST OF ACRONYMS/ABBREVIATIONS

ACM	Asbestos-containing material
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, Liability and Response Act
EP	extraction procedure
MEK	methyl ethyl ketone
NETC	Naval Education and Training Center
NUSC	Naval Underwater System Center
OSHA	Occupational Safety and Health Administration
RIDEM	Rhode Island Department of Environmental Management
RIPAEDC	Rhode Island Port Authority and Economic Development Corporation
SER	Shore Establishment Realignment
TSCA	Toxic Substance Control Act
UST	underground storage tanks

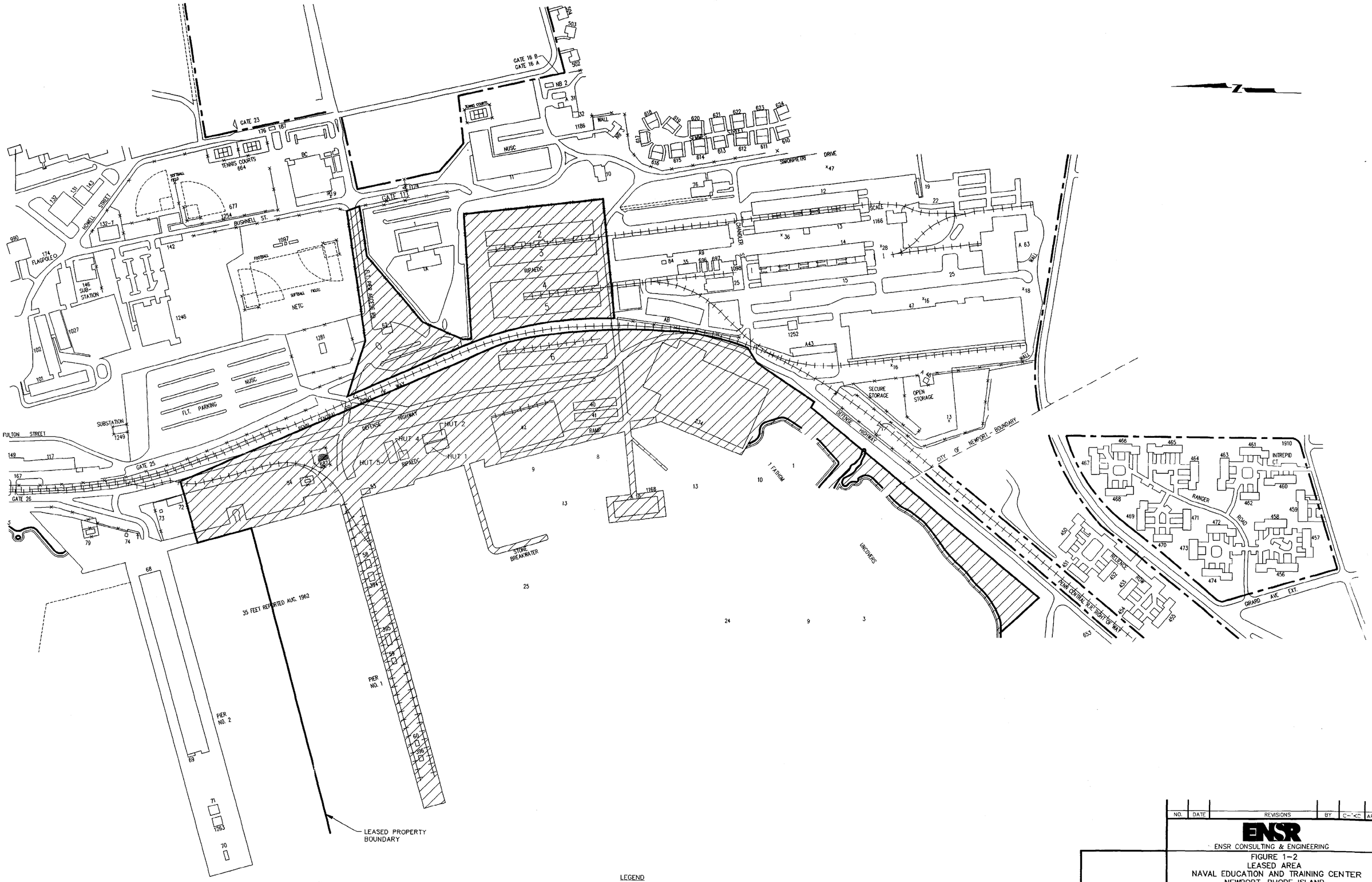

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FIGURE 1-2
LEASED AREA
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

DESIGN: A.J.F.	DATE: 5/93	DRAWING NUMBER 1	
DRAWN: J.E.B.	SCALE: 1"=200'		
CHECKED: C.A.	APPROVED:	SHEET NUMBER 1	REV. NO. 0

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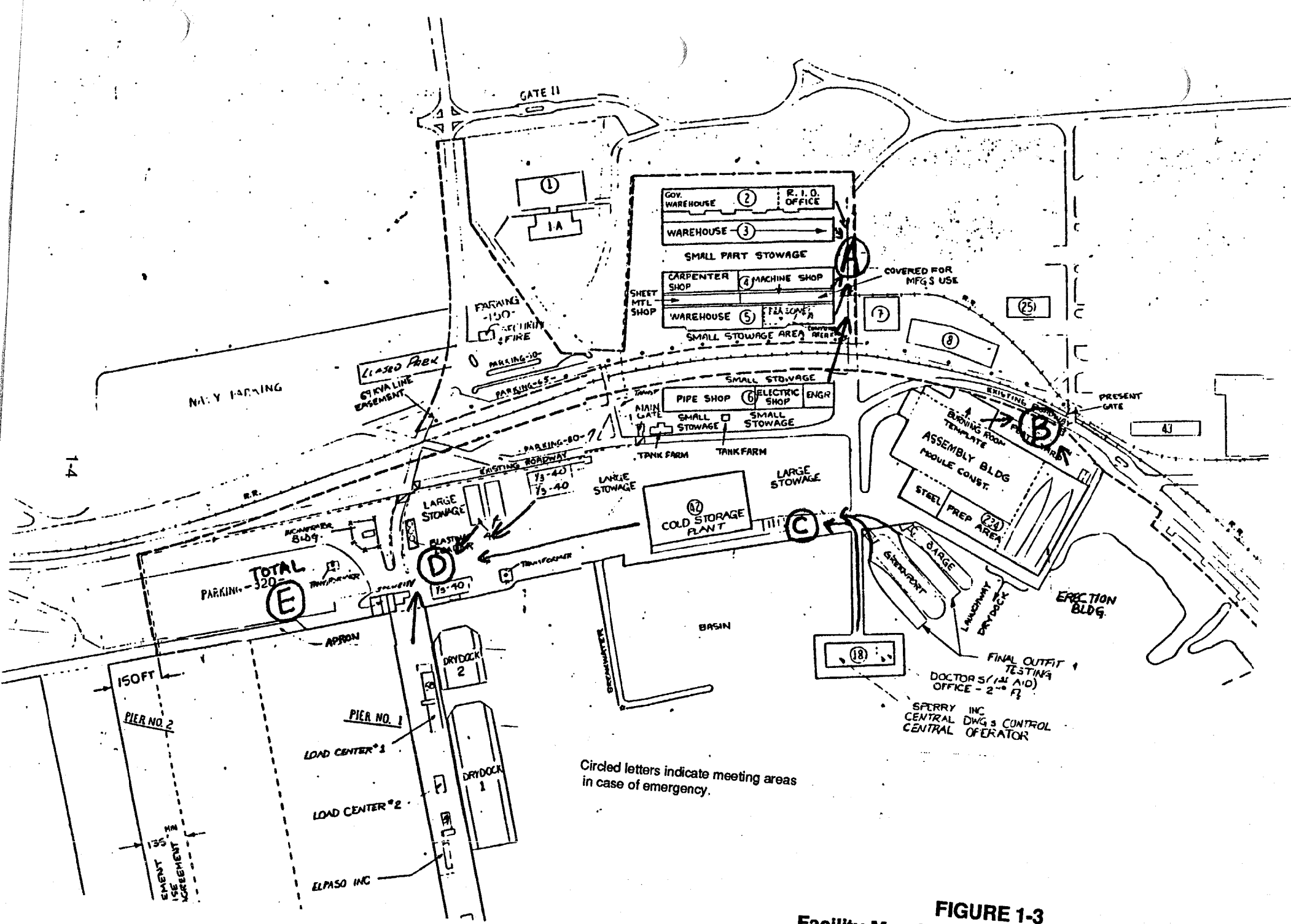

Circled letters indicate meeting areas in case of emergency.

FIGURE 1-3
Facility Map Showing Building Locations
Derecktor Shipyard, RI

Construction of new ships was conducted by Derecktor under contract to the U.S. Coast Guard and the U.S. Army. The ships constructed under these contracts were steel structured ships, such as cutters and tugboats which were built from the keel up and outfitted for initial sea trials. The construction operations included the cutting and welding of steel, sand blasting, priming and painting of the structure and direct assembly of the ship. The ship assembly operations were primarily conducted in Building 234. Hazardous materials utilized for these operations include various oils and other lubricants, solvents, compressed gases, and paints.

Supporting the ship maintenance and construction operations were an engineering department, a machine shop, an electrical shop, a pipe shop and an Activity wide vehicle maintenance shop. Because of the variety of chemicals used in these operations, and the wastes generated, Derecktor was classified as a hazardous waste generator (Identification Number 095971768)

1.3 ACTIVITY HISTORY

The history of government involvement with lands in the Newport, Rhode Island area dates back to the mid-1600s when property was first purchased from the Aquidneck Indians. Throughout the 1700 and 1800's, the presence of the U.S. Navy grew in the Newport area with the development of naval training facilities and the establishment of the Naval War College. Military activity increased sharply at the outbreak of World War I and again at the start of World War II.

Coddington Cove was acquired in 1940 for use as a Supply Station. Prior to this time, the Coddington Cove area was farm land with only scattered buildings. During World War II the Coddington Cove area saw major development including barracks, warehouse space and hundreds of quonset huts. Although Naval activity diminished following the end of World War II some construction at Coddington Cove did continue. In 1955, Pier I was completed to replace pier space lost in 1954 to Hurricane Carol. The adjacent Pier 2 was added in 1957.

In 1962, Newport became headquarters of the Commander Cruiser-Destroyer Force Atlantic. Dozens of naval warships and auxiliary support ships were home ported at Newport. A 1962 aerial photograph of the Coddington Cove area shows 18 naval warships moored at Pier I.

This use of the Coddington Cove area continued until the April 17, 1973 announcement of the Navy's Shore Establishment Realignment (SER) Program. The SER resulted in a reorganization of naval forces at Newport and the transfer of ships and activities to other Naval stations. The SER also directed the transfer or excessing of non-essential land and facilities. Included in this excessing was the 41 areas of land leased to RIPAEDC and subleased to Derecktor Shipyard. The Derecktor Shipyard operated from 1979 until January 1992 when Derecktor filed for Chapter 11 bankruptcy.

1.4 SURROUNDING LAND USE

The Derecktor Shipyard area is surrounded entirely by U.S. Navy facilities. These facilities include the Naval Education and Training Center (NETC) and the Naval Underseas Warfare Center (NUWC). NETC and NUWC facilities are generally situated at a higher relative elevation than the Derecktor Shipyard. The majority of the NETC and NUWC buildings surrounding the site are used for administration, training or

naval research. Abutting the site to the south is a NETC Public Works garage vehicle maintenance building and an oil-fired heating plant. The public works transportation shop and heating plant directly abut the Derecktor property and are immediately south of Buildings 3 and 5, respectively. In May, 1992, during construction activity to repair a broken water main, soil contamination was discovered in the vicinity of the heating plant. Investigation of soil contamination at the water main break reportedly identified JP-4 at that location. The Navy is currently investigating potential sources of contamination in this area. Six (6) 20,000-gallon fuel oil underground storage tanks (UST), an emergency generator UST, and a gasoline station associated with the Public Works Transportation Shop are located nearby. Reportedly, ten (10) UST's have been removed from the gasoline station; three (3) new UST's remain active at the station. Navy personnel report that kerosene and white gas were found in two of the old gasoline station tanks.

1.5 GEOLOGY/HYDROGEOLOGY

The regional geology/hydrogeology for the site is presented below. Much of this information was extracted from a March, 1993 Remedial Investigation/Feasibility Study (RI/FS) Workplan conducted by TRC Environmental Corporation. The TRC RI/FS Workplan references a 1983 Initial Assessment Study (IAS) conducted by Envirodyne Engineers, Inc. for most of this information.

NETC is located at the southeastern end of the Narragansett Basin. This basin is a complex synclinal mass of Pennsylvanian aged sedimentary rocks and is the most prominent geologic feature in eastern Rhode Island and adjacent Massachusetts. Narragansett Basin is an ancient north to south trending structural basin originating near Hanover, Massachusetts. The basin has a length of approximately 55 miles and varies from 15 to 25 miles wide. The western margin of the basin is in the western portion of Providence, Rhode Island, and the eastern margin runs through Fall River, Massachusetts. Exposures of older rocks on Conanicut Island and in the vicinity of Newport suggest that the southern extent of the basin is near the mouth of Narragansett Bay.

The rocks of the Narragansett Basin are non-marine sedimentary rocks of Pennsylvanian age. The rocks are chiefly conglomerates, sandstone, shales, and anthracite. Total thickness of the strata in the Narragansett Basin has been estimated at 12,000 feet. Both vertical and lateral irregularities in the lithologic character of the rock are present within the basin. Many folds and some faults occur throughout the basin, but the character and amount of the folding and faulting are not clearly known. The sedimentary rocks of the basin are believed to have been deposited in a lowland are which was surrounded by an upland area of considerable relief. The presence of coal beds within the basin also indicates that there were fairly extensive swampy areas.

The bedrock of the Narragansett Basin has been divided into the following five units: the Rhode Island Formation, Dighton Conglomerate, Wansulta Formation, Pondville Conglomerate, and Felsite at Diamond Hill. At NETC and most of the surrounding area, the bedrock is entirely of the Rhode Island Formation, and thus, only this unit will be examined in detail.

The Rhode Island Formation is the most extensive and thickest of the Pennsylvania formations in Rhode Island. The vast majority of the Narragansett Basin is underlain by this formation. Included within the Rhode Island Formation are fine to coarse conglomerate, sandstone, lithic graywacke, graywacke, arkose, shale and a small amount of meta-anthracite and anthracite. Most of the rock is gray, dark gray, and

greenish, but the shale and anthracite are often black. Crossbedding and irregular, discontinuous bedding is characteristic of the formation. Rocks of the Rhode Island Formation, which are in the northern portions of the basin, are strong and indurated but are not metamorphosed. However, those rocks in the southern portion of the basin, such as the NETC, are metamorphosed, and these rocks contain quartz-mica schist, feldspathic quartzite, garnet-stacrolite schist, and some quartz-mica-sillimanite schist. The beds of meta-anthracite and anthracite are mostly thin, but many areas within basin have been mined. Vein quartz, fibrous quartz, and pyrite are commonly associated with these coal layers, and the ash content is high.

Within the Rhode Island Formation, there are a few areas of thick conglomerates. These conglomerate layers are gray to greenish in color and are mostly very coarse. These conglomerates consist of pebbles, cobbles, and boulders (up to several feet long), interbeded with sandstone and graywacke. The stones are predominantly quartzite and have been elongated as a result of tectonic forces in the southern portion of the basin. These thick conglomerate layers are more resistant to erosion than are the surrounding rocks and thus, are topographically higher. Coasters Harbor Island is mostly covered with this conglomerate material.

Throughout the Narragansett Basin, the Pennsylvanian rocks are underlain by pre-Pennsylvanian igneous and metamorphic rocks such as Bulgarmarch granite, Metacom granite gneiss, porphyritic granite and slate and quartzite. For the most part, these basement rocks are deeply buried beneath the Pennsylvanian rocks. However, these older rocks occur north of NETC in the Bristol area and south of NETC in the Fort Adams and Newport Neck areas and on the southern tip of Conanicut Island. Rose Island and Goat Island also have older metamorphic rocks of slate and quartzite.

Overlying the Pennsylvania rocks of the Narragansett Basin are surficial deposits of Pleistocene sediments. These Pleistocene sediments owe their origin to the Wiconsit glaciation which covered the area with ice several thousand feet thick. As the glaciers receded some 10,000 to 12,000 years ago, they deposited unconsolidated glacial materials of variable thicknesses throughout the Narragansett Basin area. The unconsolidated glacial material ranges from 1 to 150 feet thick, being thicker in the valleys and thinner in the uplands. The glacial material consists of till, sand, gravel, and silt. These glacial deposits were derived from shale, sandstone, conglomerate, and in a few places, coal.

Many areas on Aquidneck Island, on which NETC is located, obtain their water supply from wells. Areas relying on ground water are mostly north of the Middletown area, but there are wells throughout the entire island. Most ground water is used for domestic needs, although some is used by small industries and businesses.

Ground water on Aquidneck Island is obtained from the unconsolidated glacial deposits of till and outwash and from the underlying Pennsylvanian bedrock. Throughout the area, depth to ground water ranges from less than one foot to about 30 feet, depending upon the topographic location, time of year, and character of subsurface deposits. The average depth to the ground water is around 14 feet on Aquidneck Island and moves from areas of high elevations to Narragansett Bay or the Sakonnet River.

Seasonal water level fluctuations are common in the area. These fluctuations range from less than 5 feet to as much as 20 feet on the hills. In the valleys and lowland areas, the fluctuations are generally less than

5 feet. During the late spring and summer, the water table usually declines as a result of evaporation and the uptake of water by the plants, and rises during autumn and following winter thaws.

The unconsolidated glacial deposits range in thickness from less than one foot near the rock exposures to about 50 feet throughout Aquidneck Island. Most of the glacial deposits are till, but isolated outwash areas occur. In the NETC area, the glacial deposits are till with a thickness of less than 20 feet. Wells completed in the till are usually dug and range in depth from less than 10 feet to as much as 75 feet. The average depth for these wells is about 20 feet. These dug wells are usually 2 to 3 feet in diameter and are usually dug down to the top of the bedrock.

The yield of till wells varies considerably depending upon the type and thickness of the water-bearing deposits penetrated. Yields range from less than one to as much as 120-gallons per minute. Under normal weather conditions, till wells yield a few hundred gallons of water per day and are adequate for domestic supplies. The large diameter of dug wells also provides substantial water storage area between periods of use. Each foot of water in a 3-foot diameter well represents storage of 53-gallons. However, these wells are subject to going dry during seasonal or unusual droughts.

Bedrock wells in the area range from 14 to 1,300 feet in depth. The average depth for these bedrock wells is 135 feet. Yields from bedrock wells range from less than one to as much as 55-gallons per minute. Most wells yield less than 10 gallons per minute. The yields vary considerably in the bedrock over short distances because the joints and fractures which transmit water to the wells occur intermittently. Joints and fractures are most numerous and widest near the top of the bedrock and become fewer and narrower with depth. Bedrock wells seldom go dry, but yields can be extremely low if not enough fractures and joints occur in the area of the well.

The chemical characteristics of the ground water are similar throughout the area, and the water is generally satisfactory for most ordinary uses. Most ground water in the area is soft or only moderately hard, with ground water from till generally containing less mineral matter and being softer than ground water from bedrock. Areas where the ground water has high iron content are scattered throughout the area, being most numerous around Newport and Middletown and the northern part of Portsmouth. Wells which have a high iron content usually penetrate only rocks of Pennsylvanian age.

In scattered locations near the shoreline, over-pumping has led to salt water intrusion in some wells. Bedrock wells are not as easily contaminated with salt water as are till wells, but the chance of contamination increases as the depth of the well below sea level increases.

No wells were identified within the boundaries of NETC other than on Gould Island. There are other wells in close proximity; however, these wells are upgradient of NETC.

The ground water at NETC is very shallow, being less than 10 feet below the surface in most areas. This shallow depth makes ground water contamination at NETC very possible. Those pollutants which do find their way into ground water would migrate to the west and discharge into Narragansett Bay. NETC extends along the western shoreline of Aquidneck Island, and the ground water only has to migrate a short distance before discharging into Narragansett Bay.

The soils occurring at NETC have permeabilities which are moderate to moderately rapid, and they do not restrict the vertical movement of water. The glacial till, from which these soils were derived, is generally less permeable than the overlying soils but does not represent a barrier to the vertical migration of water. Therefore, it is possible that any contaminant transported in this water could contaminate the ground water. There are also isolated areas where the bedrock occurs at the surface. Contamination is possible in these areas through the cracks and fissures which commonly occur in the bedrock.

2.0 FINDINGS OF PRELIMINARY SITE ASSESSMENT

2.1 GENERAL FINDINGS

At the time this Preliminary Site Assessment was conducted, regular operations at the Derecktor Shipyard had been terminated for several months. The information provided in this report pertaining to activities that occurred during Derecktor's operations are based on review of files at Derecktor Shipyard, RIDEM, NETC and from EPA Region 1, interviews with Wray Lessard, Derecktor Shipyard Quality Assurance Manager, Rachel Marino and Roger Poisson of NETC and Jeffrey Crawford of RIDEM, a former Shipyard employee. Mr. Crawford worked at Derecktor from January 1983 through April 1987. He served in various capacities including responsibility for hazardous materials handling. Mr. Crawford is now employed by RIDEM.

Observations made by the HALLIBURTON NUS Team during the detailed site visit on January 12-15, 1993 supplemented the information gathered from files and interviews. At the time of the inspection, the site was being prepared by a handful of Derecktor employees for a January 1993 liquidation auction as part of the bankruptcy proceedings. Consequently, many items and materials had been moved from their original location of use for the preparation of the auction. In addition, activities were being conducted related to consolidation, clean-up, and removal of hazardous materials. Observations made during the inspection will likely vary with future conditions due to these activities.

Photographs taken during the site inspection are included in the following descriptions to support the observations reported. Figure 2-1 shows the approximate locations where the photographs were taken.

2.1.1 Hazardous Materials/Waste

Derecktor's operations involved significant use of hazardous materials. These hazardous materials included various oils, solvents, paints, metal pieces, compressed gases and various maintenance and janitorial products. As a result of the use of a large amount of hazardous materials, large quantities of hazardous wastes were generated (Appendix A). According to facility records, waste oil and oily water were the largest category of waste generated with over 74,000-gallons shipped off-site in 1985, 60,000-gallons in 1987 and 107,000-gallons in 1989. Waste paint liquids and solids were the second largest class of hazardous waste generated. In 1985, 6,500-gallons and 26,500 pounds of paint-related material were generated. According to Jeffrey Crawford, this quantity was reduced in subsequent years through use of a solvent recovery unit and better management practices. In 1988, 34,650 pounds of paint solids were generated but only 880-gallons of paint-related liquids.

Other wastes generated were as follows:

- Pipe shop - sodium hydroxide (Penesolve 814), muriatic acid and acid rinse water.
- Shipboard pipe flushing - citric acid solution and sodium nitrite solution
- Office operations - ammonia from blueprint machine, x-ray developer, fixer and rinse water

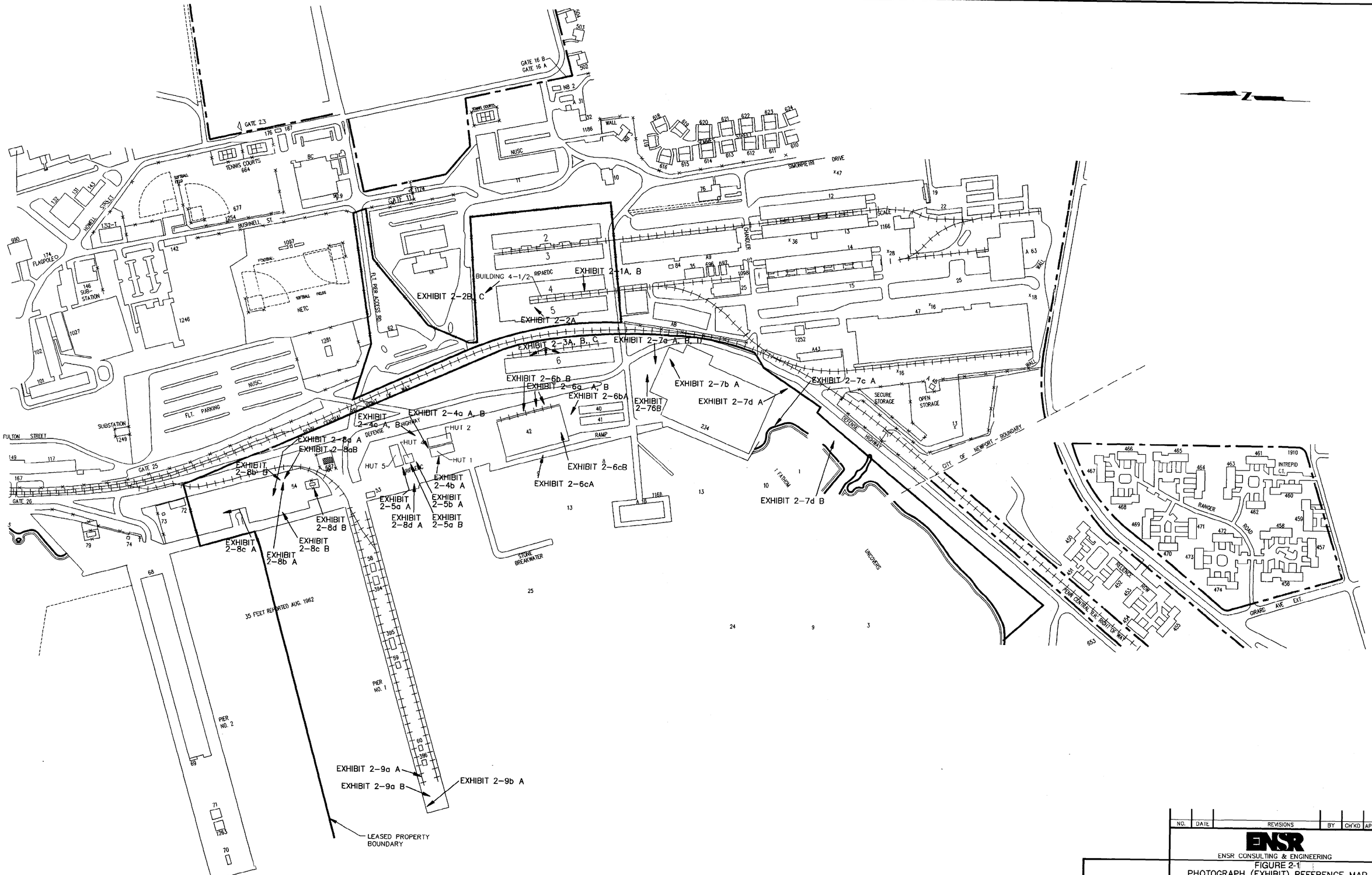

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FIGURE 2-1
PHOTOGRAPH (EXHIBIT) REFERENCE MAP
DERECKTOR SHIPYARD
MIDDLETOWN, RHODE ISLAND

DESIGN: S.R.	DATE: 5/93	DRAWING NUMBER 1	
DRAWN: J.E.B.	SCALE: 1"=200'		
CHECKED: C.A.	APPROVED:	SHEET NUMBER 1	REV. NO. 0

5060220

- Machine ships & mechanics shop - solvent from parts washer (mineral spirits)
- Mechanics shop - used batteries

One of the most notable general observations regarding the entire facility was the large quantity of refuse, debris and abandoned materials scattered inside and outside of buildings. These abandoned materials along with evidence of spillage are indicative of poor housekeeping practices. This raises questions as to the overall management and disposal practices relating to hazardous materials and waste.

The files reviewed contained references to facility inspections by Federal, State and local regulatory agencies. These agencies included EPA Region I, RIDEM, Occupational Safety and Health Administration (OSHA) and the Middletown Fire Department. Many of the inspections identified poor management practices or administrative violations such as improper labelling of drums or non-compliance with reporting requirements. A major Resource Conservation and Recovery Act (RCRA) inspection of the facility was conducted on February 3 and 8 1984 by EPA Region I. This inspection focused on the "north and south" hazardous waste storage areas. This inspection is described in more detail later. As a result of these inspections, an Administrative Complaint was filed against Derecktor in May, 1984. A Consent Agreement and Order resolving the violations identified was signed in November, 1985.

A criminal investigation of the Shipyard by the Federal Justice Department, EPA Region I and the RIDEM began in 1985. The Derecktor Shipyard and Robert E. Derecktor were ultimately found guilty in 1986 of criminal violations of the Clean Water Act (CWA), the Clean Air Act (CAA), the Comprehensive Environmental Response Compensation, Liability and Response Act (CERCLA) and the Toxic Substances Control Act (TSCA).

2.2 BUILDING 2

2.2.1 Building History and Use

Building 2 is located in the easternmost portion of the site. The building is 30,591 square feet in size and is of concrete masonry construction. According to records reviewed, Building 2 was built in 1942 and utilized by the Navy as warehouse space. Records indicate it had been used by Derecktor as warehouse and office space. One third of the building was designated by Derecktor as office space and two thirds as warehouse space. In addition, Building 2 was also used by the Coast Guard for similar purposes during the duration of the Coast Guard Cutter construction contract.

2.2.2 Description of Current Conditions, Contaminants Found

At the time of the site inspection, the interior of Building 2 was primarily empty. Several small oil stains on the concrete floor and minor piles of trash were observed. Asbestos containing material (ACM) is suspected to be present in the bathroom floor tiles and pipe insulation in the warehouse and boiler room.

The area surrounding the building exterior is paved. A rubble/debris pile was located in the southeast corner along with two 55-gallon cardboard drums. Steam line access points are located in the north and southeast areas of the building. A light oil sheen was observed on most of the paved area to the south of Building 2. A storm drain outlet is located on top of a hill situated outside the northeast corner of the

building. Along the east side of the building was a rusted, unmarked 55-gallon drum. On the north side of the building was another unmarked 55-gallon drum.

2.2.3 Description of Potential Impacts

Building 2 appears to have a low potential for impact to the environment. The interior of the building was relatively empty, and the oil staining was minor. The presence of suspected ACM floor tile and insulation should be confirmed through testing. The oil stains and sheen on the exterior pavement are consistent with the operation of motor vehicles in that area. The abandoned drums and refuse in the area should be collected and removed from the site.

2.3 BUILDING 3

2.3.1 Building History and Use

Building 3 is located to the west of Building 2. Similar to Building 2, it was built in 1942 and is identical in size (30,591-square feet) and construction (concrete). The interior of Building 3 was primarily empty. According to records reviewed, Building 3 was used by the Navy and Derecktor Shipyard as warehouse space.

2.3.2 Description of Current Conditions, Contaminants Found

The interior of Building 3 was relatively clean except for some small piles of general trash (wood, paper, debris, etc.). Some minor oil stains on the floor were observed. Suspected ACM-insulation was observed on overhead pipes. In addition, a 55-gallon oil drum was present inside the building.

Building 3 exterior grounds are paved. A rusted, unmarked 55-gallon drum and a storm drain were observed at the north end of the building. On the west side of the building was a large dumpster. On the pavement next to the dumpster oil sheen was observed. The paved area to the south of the building also exhibited an oil sheen.

2.3.3 Description of Potential Impacts

Similar to Building 2, Building 3 has a low potential for impact. The inside of the building was cleaned out except for minor oil stains. The suspected ACM-insulation should be tested to confirm the presence of asbestos. The oil drum inside and the unmarked drum outside should be removed. The oil sheens on the pavement are similar to those found outside of Building 2, and are probably caused by the operation of motor vehicles in the area.

2.4 BUILDINGS 4 AND 4 1/2

According to records reviewed, Building 4 was constructed in 1942 by the Navy for use as warehouse and shipping space. The structural material aspects of the building are similar to Buildings 2 and 3. It is 500 feet long, 60 feet wide and contains approximately 30,000 square feet of floor space. According to records reviewed, during the lease to Derecktor, the northern half of the building was used as a carpenter

shop/storage space and the southern half was used as a machine shop with a tool crib and parts storage area. Located between the carpenter shop and the machine shop was a walk-in paint spray booth. A small office and engineering room is also located in the southern half of the building.

Building 4½ is not a separate building to Building 4 but was constructed by Derecktor during their lease of the property. Building 4½ was constructed by enclosing the open area between Buildings 4 and 5 with a roof and a southern wall. Previous to Derecktor, this open area was used by the Navy as a railroad spur. The enclosed area was apparently used by Derecktor as a machine shop.

2.4.1 Description of Current Conditions, Contaminants Found

Inspection of the interior of Building 4 revealed the northern half (carpenter shop) to be relatively clean with only minimum staining on the concrete floor. Five 1-gallon pails of pourable urethane foam and five 1-gallon pails of adhesive were observed. The paint spray booth was empty at the time of the inspection. The floor and walls of the spray booth were covered with dried green paint. A portion of the walls of the spray booth were constructed of a mesh filter which contained dry paint. Next to the spray booth was a storage area with some small (quart and half-gallon) containers of paint and solvents. In the southern half of the building (machine shop) the machines were still in place. Minor oil staining was observed on the concrete floor around some machines. No floor drains or sinks were observed.

The machine shop storage room and tool crib contained various machine parts, tools and quantities of hazardous materials with parts. The tool crib floor was heavily oil stained. Numerous small containers (one half-gallon or less) of oil, cutting fluids and other similar products were observed. Larger quantities of products were also observed and these included; one 10-gallon can of methyl ethyl ketone (MEK); one 55-gallon drum of MEK; five 10-gallon containers of WD-40; five 10-gallon containers of thinner (one with an open top); one 55-gallon drum of synthetic coolant with a stain on the floor under it; a 20-gallon container of electro-cleaning solution and 15 one-gallon plastic jugs of nickel acid (See Exhibit 2-1). Table 2-1, taken from the "Hazardous Material Handling Crew Training Guide, 1988-1989" (Appendix B) shows a listing of hazardous substances historically used in the machine shop.

Since the machine shop was not in operation at the time of the inspection and personnel interviewed were not directly familiar with its operations, a complete understanding of the machine shop operation and the hazardous substances used is not possible. Based on the conditions observed and professional experience with similar operations, the machine shop was likely used for the drilling, cutting, grinding and turning of metal parts. Most of the machines observed in Building 4 were small, however, in Building 4½ two large lathe capable of turning metal stock up to 12 feet long were observed. The hazardous substances used were most likely used in limited quantities (judging by the containers observed) to either prepare parts for machining (solvents, cleaners), provide lubrication, or for the machining process itself (grinding abrasives).

Throughout Building 4, heating pipes were observed wrapped with insulation. In certain areas, repair to the insulation allowed the interior of the insulation could to be observed. The pipe insulation appeared to be ACM. This observation requires sampling for confirmation.

Inspection of the interior of Building 4½ revealed some oil staining on the concrete floor around the various machines. Ten 55-gallon drums of oil were observed. A homemade parts washer was observed.

Building 4 - Locker in Tool Crib Containing Nickel Acid

A

Building 4 - Tool Crib Interior

B

EXHIBIT 2-1

TABLE 2-1

LISTING OF HAZARDOUS SUBSTANCES FORMERLY USED IN BUILDING 4 - MACHINE SHOP*

Chemical Name	Trade Name
Acetone	Pryoacetic Ether Lockweld Adhesives 100/110
Aliphatics (Lactolspirits)	Lockweld Adhesives
Aluminum	Bonded aluminum abrasive wheels - detailed bonding
Butadiene	
Carbon Dioxide	Airco Bottled Gas
Chromium Carbide	Tungsten Carbide Grades
Chromium Oxide	Tungsten Carbide Grades
Cobalt	Tungsten Carbide Grades
Copper	Techalloy Products
Cumene Hydroperoxide	#10 Gasket Eliminator
Dowanol	Superagitene
Hydrogen Peroxide	Cadox M-50 Red
Iron (Oxide)	Techalloy Products
Lead (Dust Fumes)	QHA 027
Lubricating Oil	Drew Marine Oil
Magnesite	Techalloy Products
Methyl Ethyl Ketone Peroxide	Cadox M-50
Nickel	Techalloy Products
Parrifin	Superagitene Cleaner
Polyglycol Dimeth Acrylates	#510 Gasket Eliminator
Silicon Dioxide	#510 Gasket Eliminator
Trichloroethane	Cleaning Solvent
Trichloroethylene	Cleaning Solvent

*Table is copied exactly as was presented in the "Hazardous Material Handling Crew Training Guide 1988-1989."

According to the label on the washer, mineral spirits was used as the cleaning agent. No items of potentially ACM were observed in Building 4½.

The Building 4 exterior area, described in this section, is the east side of Building 4. (The remainder of the Building 4 exterior is described under Section 2.5, Building 5). Based on Figure 1-3, the eastern area of Building 4 was used for small parts storage. During the site inspection, wooden and metal materials were observed stockpiled in this area. In addition, outlines of several 55-gallon drums were observed on the pavement.

The exterior of Building 4 grounds are paved with asphalt. At least three catch basins were observed along the east side of building. More catch basins may have been present but this could not be confirmed because the area was covered with silt or leaf litter. Small quantities of oil-stained surface water was observed flowing into one catch basin. At another catch basin, paint stains on the pavement probably from spray painting suggest that paint spray may have washed into the catch basin.

At the time of the inspection, the exterior grounds were littered with assorted steel and wooden objects. Four unlabelled 55-gallon drums were observed. Two 30-gallon plastic drums marked, "phosphoric acid", were observed on the loading dock located at the northeast corner of the building.

Situated on the loading dock was a small wooden structure (approximately 8 ft x 8 ft) which enclosed an air compressor. The interior of this wooden structure was heavily stained with oil.

Building 4½ is completely enclosed by Buildings 4 and 5.

2.4.2 Description of Potential Impacts

Based on the conditions observed during this investigation and the records reviewed, the potential environmental impacts from Buildings 4 and 4½ appear low. The building interiors are generally clean with the exception of the tool crib in Building 4. The greatest concern with the building interior is the proper collection and disposal of the various oil, solvents and other products abandoned in the building. If the pipe insulation is determined to contain asbestos materials, this would present a concern during rehabilitation or demolition of the building.

The area around the building exterior requires removal of the debris abandoned by Derecktor and proper disposal of materials in the drums. The paint and oil staining observed on the pavement suggests that hazardous materials were released to the environment in this area. There was no evidence provided in the files reviewed or personal interviews however that suggests these quantities were large or that spills or incidents occurred in this area.

2.5 BUILDING 5

2.5.1 Building History and Use

Building 5 is connected to Building 4 via Building 4½. Building 5 is located on the west side of Building 4½. Located along the west side of Building 5 are railroad tracks. According to records reviewed, Building 5 was built in 1942 and the building is constructed of masonry blocks. Similar to the other buildings, Building 5 is 500 feet long, 60 feet wide and has about 30,000 square feet of interior space and was originally used by the Navy as a warehouse.

According to records reviewed, Derecktor utilized Building 5 for a variety of purposes. The southern quarter of the building served as the Shipyard's main offices and administration area. The remainder of the building served as a warehouse area. According to Jeffrey Crawford expensive items for outfitting ships were stored here. In the far northeast corner of the building was an operation that appeared to be designed for fiberglass molding and curing. A locked walk-in tool crib was also located in this area.

2.5.2 Description of Current Conditions, Contaminants Found

The interior of Building 5 was relatively clean with only minor oil staining observed on the concrete floor. The area was cleaned and used for primarily for the display of auction items. Boxes of Derecktor records were stored in the warehouse area. In the locked tool crib small consumer size cans of paints, oils, and cleaners were observed. Because the area was locked, a complete evaluation of this area could not be completed.

The exterior area of Building 5 (the north and west sides) was littered with various scrap metal and wooden objects. Included with this large debris, were numerous small cans of paints and strippers. Along the northern end of the building some of the debris was covering a storm drain manhole. Stored against the northern side of the building were eleven containers of asphalt roof coating and a 55-gallon drum marked epoxy resin.

The west side of Building 5 has a covered platform and loading dock that extends along approximately two-thirds of the building length. The loading dock contained numerous scrap items and various 55-gallon drums of materials, (See Exhibit 2-2). Among the items observed were 2 blue unlabelled polyethylene drums, 1 drum labelled phosphoric acid, 2 drums labelled "Tex-Trim", numerous Halon fire extinguishes and various wood and metal scrap pieces. At the time of the inspection the loading dock appeared to be being used extensively by Derecktor personnel in preparation for the liquidation auction. Consequently, materials were being stored and moved off the loading dock throughout the inspection period.

A 10,000-gallon steel UST is located off the southwest corner of the building. The tank was used for the storage of No. 2 fuel oil to fire the boiler in the building. The tank has been registered with the RIDEM. It is not known if the tank was still being used by Derecktor. No information regarding the age of the tank or its condition was found. At the time of the site inspection, a tanker trailer of fuel oil was parked on the south side of Building 5.

The presence of ACM is suspected within the building in insulation on the heating pipes and floor tiles.

Building 5 - Looking North, Loading Dock and Platform on West Side

A

Building 5 - Looking Northwest, Northeast Corner

B

EXHIBIT 2-2a

00214GB4Y

Building 5 - Looking North, Northeast Corner

A

EXHIBIT 2-2b

2.5.3 Description of Potential Impacts

Based upon records reviewed and the site inspection, the potential for environmental impact from Building 5 appears low. Clean up of exterior debris and removal and proper disposal of drums and other containers is recommended. The building interior is generally clean although the debris and abandoned containerized material should be disposed of. The presence of ACM in pipe insulation and floor tiles needs to be confirmed through testing.

2.6 BUILDING 6

2.6.1 Building History and Use

Building 6 is located in the approximate center of the site, west of the railroad tracks and Building 5. According to facility records, the building was constructed by the Navy in 1942. The Navy used the building as a warehouse and storage space. The building covers 30,591 square feet and is constructed of concrete block. According to records reviewed, Derecktor utilized the building as a pipe shop, warehouse, electric shop and engineering area with records storage on a second floor, constructed above the engineering area. The majority of the warehouse space was relatively clean.

2.6.2 Description of Current Conditions, Contaminants Found

Inspection of the interior of Building 6 revealed that the northwest corner of the building was used as a pipe storage area. This area was generally clean with only general debris and refuse noted. The northeast portion of the building was the pipe shop cleaning room. According to an "Environment Audit Report, Derecktor Shipyard, Middletown, Rhode Island" prepared by AET (consultant to Derecktor) in 1985 (Appendix C) large dip tanks of acids and other cleaning solutions were used by Derecktor to clean piping prior to ship installation. Figure 2-2 provides a sketch of the pipe shop cleaning room at the time of this investigation.

Bath 1, located in the northeast corner of the area was 28 feet long, 3.5 feet wide and 4 feet high and was labelled "Penesolve 814". At the time of the inspection, there was approximately three feet of liquid (2,200 gallons) in the tank. Located directly south of bath 1 was a slightly smaller tank labelled "muriatic acid". This tank, bath 2 was 19 feet long, 5 feet wide and 4 feet high. This tank also contained about three feet of liquid (2,000 gallons). Located on the wall directly over bath 2 was a venting system that exhausted on the east side of Building 6. At the end of this row was a third tank, bath 3. Bath 3 was the same approximate size as bath 2. This tank was not labelled and was empty at the time of the inspection.

A second row of tanks were located on the west wall of the area. The northern most tank, bath 4, was 30 feet long, 3.5 feet wide and 4 feet high. This tank was labelled "rinse water" and was empty and dry at the time of the inspection. Located south of this rinse tank was a tank labelled "Cleaner No. 6". This tank, bath 5 was 25 feet long, 3 feet wide and 4 feet high. At the time of the inspection it was also empty and dry. South of bath 5 was a long wooden table that had been used for painting. Heavy green paint stains were observed on table, wall and floor area of the table.

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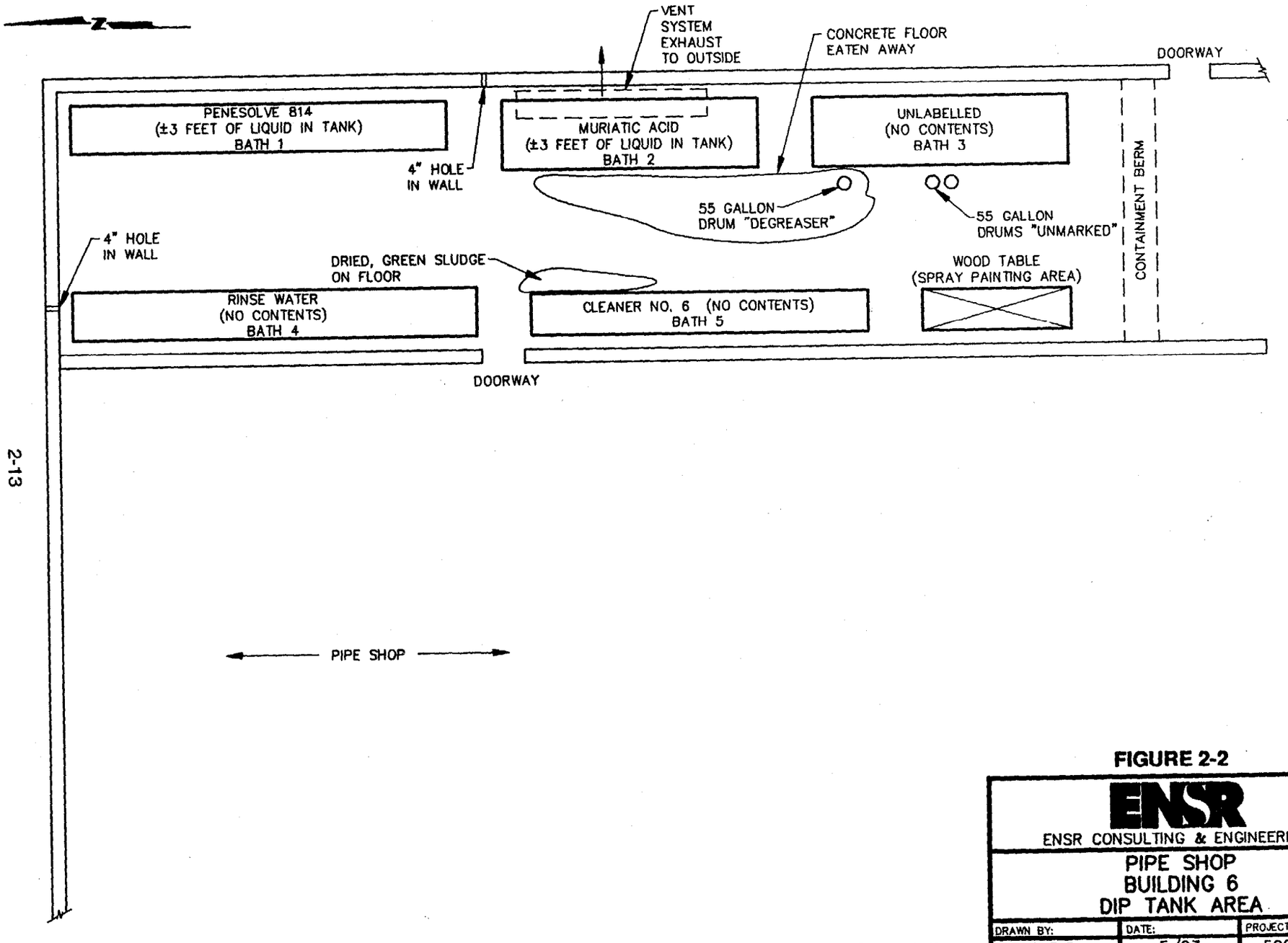


NOT TO SCALE

FIGURE 2-2

ENSR CONSULTING & ENGINEERING

PIPE SHOP
BUILDING 6
DIP TANK AREA

DRAWN BY:	DATE:	PROJECT NO.
K.P.B.	5/93	5060-033

The concrete floor in the pipe cleaning room was noticeably etched by the chemicals used in this area. A dry sludge was observed caked on the floor around bath 5. In addition to the dip tanks, three 55-gallon drums were observed in the area adjacent to bath 3. One drum was marked degreaser, the other two contained unknown solids.

Table 2-2, taken from the "Hazardous Material Handling Crew Training Guide" lists the hazardous substances that were historically used in the Pipe Shop.

At the time of the inspection, the mid-section of Building 6 was being utilized as a display area for auction items such as, hand tools, welding equipment and other small machinery items.

At the southern end of the warehouse space was a tool crib. Within the tool crib were several cylinders of freon and other smaller consumer size containers of hazardous materials. Minor oil staining was observed on the floor in the area.

The southern most portion of Building 6 was an engineering and/or office space. At the time of the inspection, this area was vacant. A second floor had been created by Derecktor above this area. The second floor appeared to have been used mostly for records storage and was littered with computer printouts.

The presence of ACM is suspected in the floor tiles in the office space areas and the pipe insulation throughout the building.

The immediate area surrounding the outside of Building 6 is asphalt paved. Adjacent to the west side of the building is an 80' x 40' fenced in area containing a large propane gas tank. Adjacent to the fenced area is a gas cylinder storage area which contained eight 4-foot propane cylinders, two 5-gallon propane cylinders, two 1-gallon old, rusted unmarked cylinders, and one 55-gallon drum of used sand blast grit (black beauty). In addition, two separate storage areas were also observed along the west wall of Building 6 containing cylinders of various sizes and contents, such as anhydrous ammonia, propane and oxygen. This area was apparently used by Derecktor as a tank storage area for welding gasses. These gasses were also piped underground to Building 234.

On the north side of Building 6, piles of debris, such as wood and scrap metal pieces were observed. A reddish brown scale was observed on the asphalt pavement. According to Mr. Crawford, solutions from the tanks in the Pipe Shop have been dumped in this area. The staining observed may be due to such disposal.

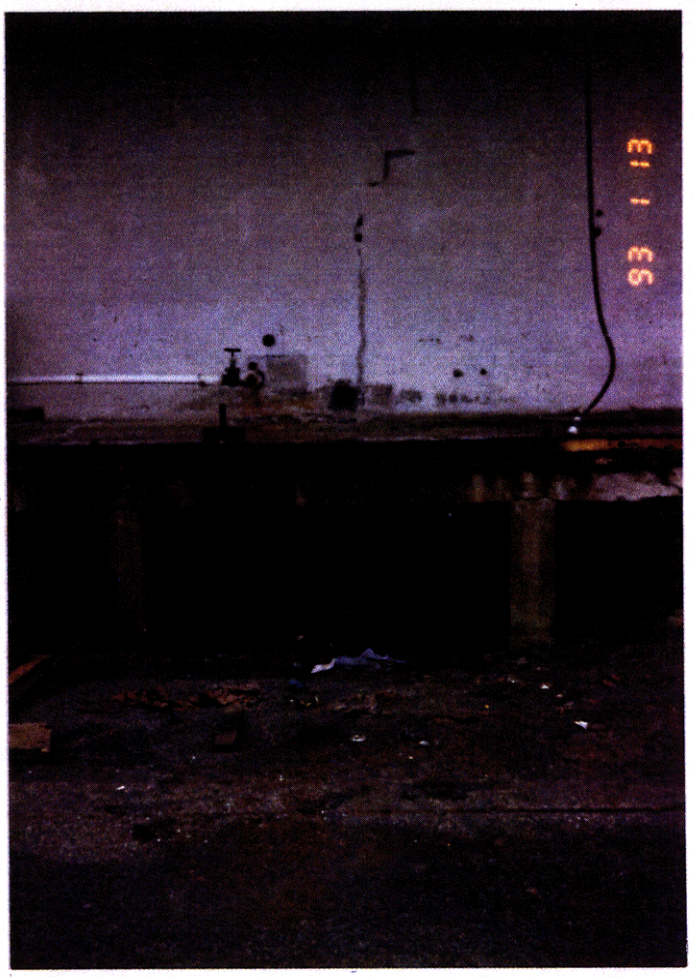
On the east side of the building is a loading dock that runs along almost the entire length of the building. At the northern end of this loading dock (adjacent to the pipe shop area) four 55-gallon drums labelled "flushing oil", hydraulic oil" and "stripper" were observed. Also, in this area was a hole in the concrete wall of the building and a three-inch PVC pipe with a valve that exited the building. The loading dock and the ground in this area was heavily stained and the concrete of the loading dock appeared deteriorated (See Exhibit 2-3). Jeffrey Crawford reported that one of the allegations in the criminal investigation by EPA was that waste liquids from the pipe shop were released to the ground in this area. No information regarding the Pipe Shop area was discovered in either the RIDEM or EPA files reviewed.

TABLE 2-2

LISTING OF HAZARDOUS SUBSTANCES FORMERLY USED IN BUILDING 6 - PIPE SHOP*

Chemical Name	Trade Name
Antimony Oxide	Copper Nickle Pipe
Argon	Bulk/Bottled Gas - Airco
Beryllium	Copper Nickle Pipe
Butyl-Cellosolve	Alumiprep 33
Cellosolve	GTA 415, Brawn, Interplate
Cellosolve Acetate	EXA 471 - 473
Cobalt	Detached Bonding
Copper	Detached Bonding
Cyclohexanone	PVC/Cement Cleaner
Hydrocloric Acid	Muriatic Acid
Iron (Oxide)	Detaclad Bonding
Lead (Dust Fumes)	Detaclad Bonding
Magnesite	Detaclad Bonding
Methyl Alcohol	Detaclad Bonding
Methyl Alcohol	GTA 078, Brawn
Nickel	Detaclad Bonding
Niobium	Copper Nickel Pipe
Phosphate Derivatives	#6 Pipe Cleaner
Phosphoric Acid	Alumiprep #33
Phosphorous	Silvaloy 15, Brawn
Sodium Hydroxide	Pennesolve 814
Zinc (Dust)	NQA 219 Zinc

*Table is copied exactly as was presented in the "Hazardous Material Handling Crew Training Guide 1988-1989."

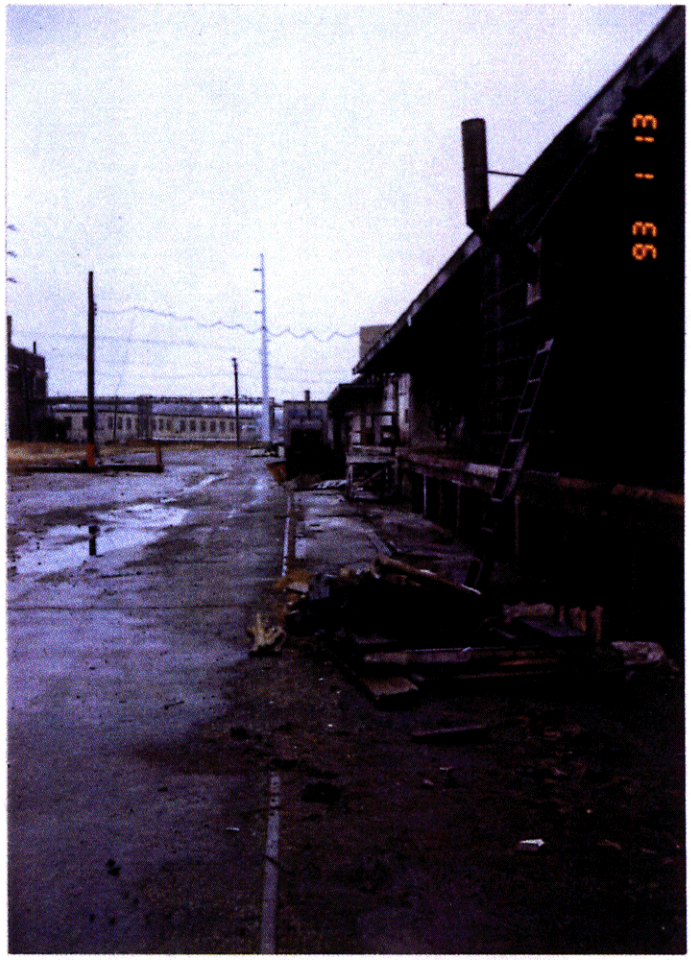


Building 6 - Looking West, Loading Dock on East Side, Pipe and Hole in Wall are from Pipe Shop. Note Staining on Loading Dock and Pavement

A

EXHIBIT 2-3a

00214 GB.5Y



Building 6 - Looking South, East of Side of Building

A

Building 6 - Looking West, East Side of Building. Note Spray Painting on Side Walls

B

EXHIBIT 2-3b

Mr. Crawford also reported that PCB transformers that were removed from the dry dock were initially stored on this loading dock until final removal from the Shipyard. He believed that the transformers may have leaked during the storage period.

On the east side of Building 6, spray painting on the building exterior walls and asphalt paving was observed. Oil staining on the pavement was also evident.

At the southeastern corner of the building was a truck trailer set on the ground. Based on the heavy oil staining on the floor of the trailer, it was apparently used for machinery repair or some process utilizing petroleum products. This trailer was tagged to be sold in the auction.

2.6.3 Description of Potential Impacts

Based on observations indicated above, there appears a potential for moderate to significant impacts associated with Building 6. This is in large part due to the processes and waste management practices that took place within the pipe shop and along the building exterior area. There is a evidence of spillage occurring within the pipe shop based on the etched and eaten away concrete underneath the baths and the dry sludge observed around bath 5. Hazardous substances abandoned in the building need to be cleaned up and removed from the site.

2.7 BUILDING 40

2.7.1 Building History and Use

Building 40 is a Quonset hut metal building originally constructed by the Navy in 1951. Records indicate that it was originally 375 feet long and 40 feet wide, and located on the waterfront immediately south of Building 42. No records were found pertaining to the use of Building 40 by the Navy. The "Candidate Environmental Impact Statement for the Out-Leasing of Approximately 44 Acres of Land and Facilities Thereon at the U.S. Naval Base, Newport, RI" states that prior to the lease to RIPAEDC, Building 40 was occupied by Coddington Yachts, Inc., a small family-owned yacht building business. Portions of this document are provided in Appendix D.

It was reported that at some point during Derecktor Shipyard operations, Building 40 was disassembled. The pieces of Building 40 were reconstructed into three sections and relocated at various areas of the site. Two sections were placed side by side and located parallel to the waterfront just north and east of Building 42. The third section was placed just south of entrance to Pier 1. No records were found indicating the exact dates of Building 40's disassembly and reconstruction into these section.

For the purpose of this report, the western-most section of the two sections placed north of Building 42 will be called Hut 1 and the eastern-most section will be called Hut 2. Both Hut 1 and 2 were used by Derecktor as vehicle maintenance garages. Hut 1 and Hut 2 are connected by a doorway. A sign indicating Hut 2 as "Storage Area for U.S.S. Cannole" was observed during this investigation.

The third section (Hut 3) is located at the entrance to Pier 1. Hut 3 was believed to have been used as an employee locker room. Hut 3 was locked at the time of the inspection and its current use and condition with respect to potential environmental issues could not be determined.

2.7.2 Description of Current Conditions, Contaminants Found

Hut 1 has a concrete floor that was observed to be stained with oil and grease apparently from motor vehicle maintenance and repair operations. Oil staining was observed over most of the center working area of the Hut. A manhole covered by a thick steel plate was observed in the center of the floor space. Heavy oil stains and sheens were observed in and approximately five feet around the manhole. The discharge point from this manhole could not be determined. Within the hut were numerous containers of oils and lubricants including two 250-gallon tanks that contained waste motor oil and a dispensing unit. The dispensing unit was surrounded by a steel containment pan.

Hut 2 also had a concrete floor which was observed to have minor oil stains. The interior was empty except for general debris and items labeled "for sale". Five 5-gallon pails of oil and lubricant were observed. No floor drains were observed in Hut 2.

The exterior of Huts 1 and 2 are paved except for the south side which contains a combination of dirt and deteriorated asphalt pavement. During this investigation, shipyard equipment was steam cleaned in this area. Various vehicle maintenance and repair equipment and materials were either stored or stockpiled in areas surrounding Huts 1 & 2 (See Exhibits 2-4a and 2-4b). Various sized trucks and a homemade trailer containing four 250-gallon tanks of gasoline and a dispensing unit were parked along the western side of Hut 1. Assorted metal and wooden objects & debris were scattered elsewhere around the exterior of both huts. This debris included four 5-gallon pails of paint, two 55-gallon drums of oil, an abandoned refrigerator and various vehicle parts. On the southern side of the huts was a two-foot square manhole covered with a 2/4" thick steel plate. This manhole contained water but no discharge pipe was observed.

Situated just north and east of Hut 2 is a 20,000-gallon above-ground storage tank, (See Exhibit 2-4c). According to site records, the tank was used for the storage of Number 2 fuel oil that was used for heating purposes and is constructed of steel. The tank was surrounded by 2.5 foot high steel sheeting which acted as secondary containment. The tank was reportedly filled by tank trucks operated by independent fuel oil dealers. According to the "Environmental Audit Report" AET (1985), secondary containment was not initially provided for the tank. In addition the audit report indicated "a considerable amount of leakage or spillage was noted about the piping at the base of the tank." Stained soils were observed during the inspection within a three foot radius around the fill pipe to the tank on the southern end.

Derecktor's 1987 "Spill Prevention Control and Countermeasure Plan", Appendix E, noted that a welded steel secondary containment structure had been provided for the 20,000-gallon tank. This secondary containment structure was in place at the time of the inspection. The secondary containment is only capable of holding 10,000-gallons. At the time of the inspection, the secondary containment structure contained 30 inches of water.

Building 40 - West Side of Hut 1, Looking Southeast, Vehicle Maintenance Shop (Hut 1) in Foreground and Storage Shed/Maintenance Shop (Hut 2) in Background **A**

Building 40 - North Side of Hut 2, Looking East, Debris Outside Hut 2, Note Paint Cans **B**

EXHIBIT 2-4a

00214GB6Y

Building 40 - West Side of Hut 1, Looking Southeast, Trailer with Gasoline Tanks Parked on West Side of Hut 1

A

EXHIBIT 2-4b

Building 40 - North Side of Hut 2, Looking North,
20,000 Gallon No. 2 Fuel Oil Tank and Secondary Containment **A**

Building 40 - West Side of Hut 1, Looking East, 20,000 Gallon No. 2 Fuel Oil Tank Located North of Hut 2 **B**

EXHIBIT 2-4c

2.7.3 Description of Potential Impacts

Potential impacts to the environment from conditions observed in and around Building 40 appear significant. Petroleum products such as gasoline, fuel oil, and motor oil were widely used and stored in this area. Significant oil staining was observed on the floor of Hut 1 and around the 10,000-gallon storage tank. These observations indicated that petroleum products had been released to the ground surface and potentially could migrate to Narragansett Bay which is within 100 feet of Hut 1. The two manholes that were observed are of particular concern since the discharge points were not found and both contained heavy oil stains and sheens which indicated a release of petroleum product. Since the manhole within Hut 1 was located directly in a maintenance bay it is possible that large quantities of petroleum products could have been released to the manhole.

2.8 BUILDING 41

2.8.1 Building History and Use

Building 41 was a metal Quonset hut constructed by the Navy in 1951. At the time of erection, it was 40 feet wide and 375 feet long and was located on the waterfront immediately south of Building 42. According to the Candidate EIS. Building 41 was used by the Navy as a storehouse and was vacant at the beginning of Derecktor's lease.

It was reported that at some point during Derecktor Shipyard operations at the site, Building 41 was disassembled into two sections. The pieces of Building 41 were reconstructed. The two sections are now located north of Huts 1 and 2 and are situated perpendicular to the waterfront. No records were found indicating the exact dates of Building 41's disassembly and reconstruction into two sections.

The section of Building 41 closest to Huts 1 and 2 (Hut 4) was empty at the time of the inspection. It was uninsulated and a deteriorated asphalt pavement floor was observed. Hut 4 appeared to have been used for some type of storage but the exact use could not be determined.

The second portion of Building 41 (Hut 5) lies immediately adjacent to and north of Hut 4. Hut 5 was also uninsulated with a concrete floor. Large spools of cable, ropes and other rigging equipment for ships were stored within Hut 5 at the time of the investigation.

2.8.2 Description of Current Conditions, Contaminants Found

The interior of Hut 4 was generally empty except for some small items of refuse. There were two automotive batteries, one drum marked epoxy resin and various pieces of wood. The floor was stained with oil and a dried, greenish sludge that could not be identified. Hut 5 contained quantities of rigging equipment that was tagged for the auction. Minor oil staining was observed on the floor. One 55-gallon drum marked Cuprinol was observed in the rear portion of the building.

The area surrounding Huts 4 and 5 is paved with asphalt. Oil staining was present on the pavement. Numerous items were stored outside in areas directly and surrounding these huts, (See Exhibits 2-5a and

2-5b). These items included metal parts, fork lift trucks in various states of repair, piles of chain, tires, and wire and cable. Six 55-gallon drums were located on the south side of Hut 4.

2.8.3 Description of Potential Impacts

Based on the records reviewed, and the conditions observed, Huts 4 and 5 appear to present low potential for environmental impact. However, the unidentified staining in the interior of Hut 4 is of some concern because the exact use of this building is not known. While the items observed around the exterior of Huts 4 and 5 do not appear to present a high risk of potential environmental impact, the general use of the waterfront for motor vehicle storage and maintenance creates a risk of possible environmental impact to the Bay.

2.9 BUILDING 42

2.9.1 Building History and Use

Building 42 is a one-story brick and masonry block building located approximately 30 feet from the waterfront on the west side of the site. According to facility records, Building 42 was constructed in 1954 and was utilized as a cold storage warehouse. The building has an ammonia-brine refrigeration plant and dimensions of 313-feet long by 170-feet wide. The building interior is divided into various refrigerated storage areas which occupy 80 percent of the building interior. According to the Candidate EIS, Building 42 was not connected to the municipal sanitary sewer system at the time of the lease to Derecktor and sanitary wastes were reportedly discharged to the Bay. It is not known if the building was ever connected to the sanitary sewer system. At the start of Derecktor's lease, the building was reportedly vacant.

At some point during Derecktor's lease, a fish processing operation conducted by The Newport Seafood Group was operated in Building 42. This operation was referenced in the facility files but no other details of the fish processing operation were found.

It was reported that following the fish processing operation, Building 42 was utilized to support the shipyard operations. Three cold storage rooms (Rooms A, B and C, Figure 2-3) along the southern end of the building were used by Derecktor for hazardous waste storage, paint mixing and dispensing and solvent recovery from painting operations. The northern portion of the Building 42 was used for storage of electric wire and cable. According to Jeffrey Crawford, much of the cable was used for degaussing (prevention of magnetic attraction) on ships. The large central area of Building 42 was reported by Mr. Crawford to be used for the pre-fabrication of duct work for ships and the storage of shipboard insulation.

2.9.2 Description of Current Conditions, Contaminants Found

At the time of this inspection, hazardous waste removal operations were being conducted at Building 42 by an independent contractor. Drums and other containers of waste had been removed from Rooms A, B and C and were being staged either in the building hallways or on the east side of the building. Room A was empty, however the concrete floor showed considerable oil staining. Room B appeared to have been converted into a flammable material storage area based on the posted warning signs present, the explosion-proof lighting and the floor-level venting system. Room B was flooded with water at the time of

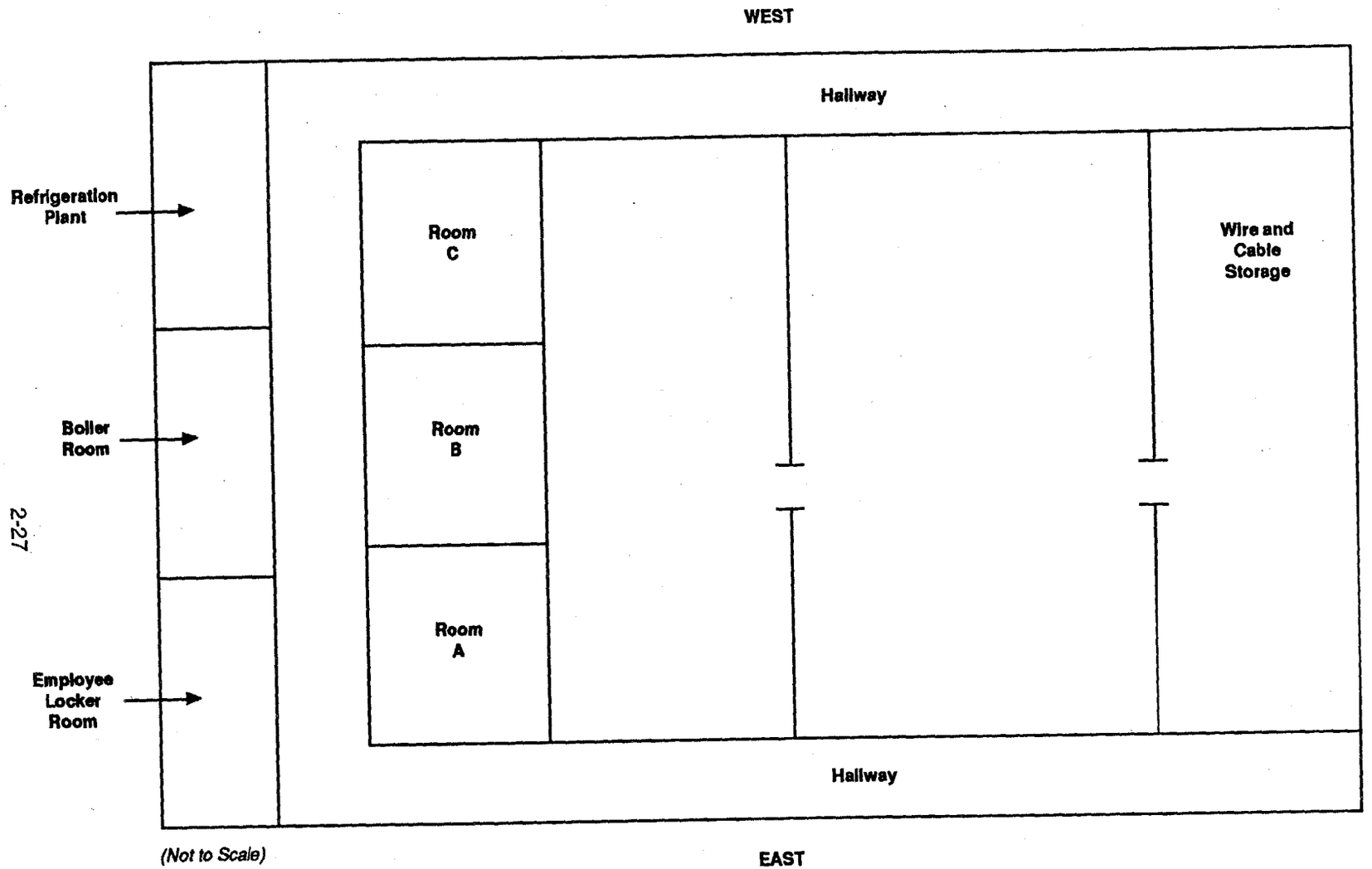


FIGURE 2-3
SKETCH OF BUILDING 42
INTERIOR

this inspection. A paint mixing machine was present in the room. Two pallets containing various containers of paints, oils and other hazardous materials were also located in the room. Room C was empty and the floor was also flooded with water. Considerable paint staining could be observed on the concrete floor.

The eastern hallway was being used as a staging area for hazardous waste removal operations and as a storage area for general debris and waste materials. The following materials were observed during the site inspection:

- Approximately one hundred 55-gallon drums of adhesives, strippers, oils, paints, sand blast grit and acids.
- A 12'x 4' x 2' high pile of sand blast grit (black beauty).
- A pallet with approximately 40 fire extinguishes of both the carbon dioxide and water variety
- A pallet of approximately twenty 5-gallon containers of paints and oils
- A stockpile of scrap machinery and parts
- Stains of asphalt cement and oil on the concrete floor

The south hallway was also being used as a staging area. During the site inspection there were at least fifty 55-gallon drums of various hazardous wastes including acids, anti-freeze, oils and strippers. The concrete floor was heavily stained with oil.

The west hallway also contained numerous drums and piles of scrap material. At least seventy 55-gallon drums were observed. The drums were labelled as acid, oil, tallow (fish oil), and antifreeze similar to drums observed elsewhere in the building. The floor was heavily stained with oil.

The central portion of Building 42 was generally clean at the time of the inspection. This area was being used as a display area for the auction and most floor space was occupied by furniture and other objects for sale. Some small consumer-size containers of hazardous materials were observed among the auction items, however they appeared to have been unopened.

No hazardous materials were observed in the wire and cable storage area. Numerous large spools of wire were still present in the room. A floor drain was observed in the room surrounded by minor oil staining.

The locker room, boiler room and refrigeration room were in very poor condition. These areas appeared to have been vandalized as debris and waste were scattered over the floors. Large quantities of paint were peeling off the equipment in the boiler and refrigeration room and the floor was covered with paint chips. It is not known if this paint is lead-based paint.

Based on the age of the building and observations, the presence of ACM is suspected in pipe insulation throughout the building. The refrigerated room insulation could not be observed due to the wall coverings. Along the western hallway, the wall covering had been damaged, revealing a cork-like insulation underneath.

Along the eastern exterior side of Building 42 a drum staging and scrap storage area were observed (See Exhibits 2-6a and 2-6b). At least eighty 55-gallon drums were in this area. An apparently permanent storage area for scrap metal and metal racks was observed in the area south of Building 42 (see Exhibit 2-6b). The western exterior side of the building consisted of an unpaved roadway and was generally clean. The roadway is approximately 50 feet wide and separates Building 42 from the Bay (see Exhibit 2-6c). The north side of the building exterior was used for storage of scrap metal.

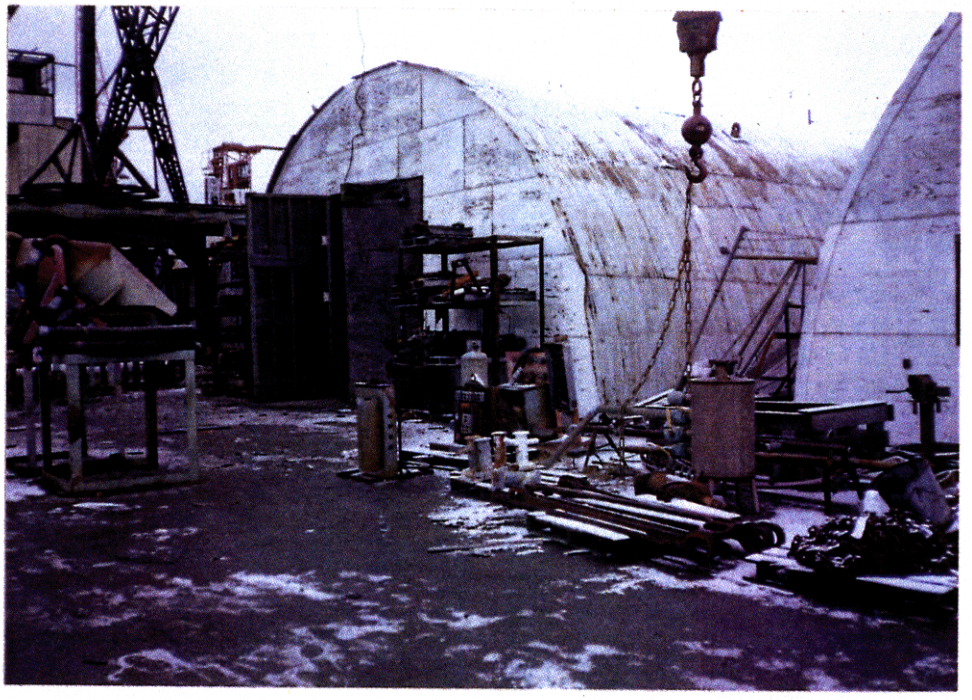
According to facility records, used sand blast grit (black beauty) was placed by Derecktor as fill material in the eastern and northern exterior sides of Building 42. The exact amount of sand blast grit placed here is unknown but is estimated to be between 4,000 and 6,000 cubic yards. This estimate is based on the area observed during the site inspection believed to be filled with sand blast grit and an assumed average depth of four feet. The average four-foot depth is used based on the fact that the east side of Building 42 was originally a loading dock and the grade was such that tractor trailers could line up with unloading doors. The current grade is flush with the base of the unloading doors and iron ladders adjacent to the doors are three quarters buried.

On the south side of Building 42, the exterior brick wall was observed to contain stains. The stains were prevalent especially along the foundation. A six- inch plastic pipe was observed exiting through this wall and was not connected to any drain line. The interior source of this pipe could not be determined. A two-foot square catch basin was observed approximately 30 feet from the south exterior wall of Building 42. The elevation of the catch basin was at least four inches above the surrounding ground surface. Under these conditions the catch basin appears unable to collect surface water. The interior of the catch basin was filled with water and had a sludge-like material at its base. The discharge point of the catch basin could not be determined.

In addition to the conditions observed, information was gathered during the site inspection that describes other waste disposal activities in the area around Building 42. A 1983 letter to Robert Derecktor from Thomas Epstein of the RIDEM (Appendix F) described an inspection of the facility conducted on May 2, 1983. During that inspection "two large pits filled with liquid were found at the northeast corner of Building 42." The liquid consisted of "rust flakes, a tar-like preservative and water". Sampling of this material was recommended but it is not known if the sampling was ever performed. Use of this area for the disposal of liquids from the dry dock tanks was confirmed by Mr. Crawford. He stated that oily water was dumped in this area and that oily sludge was also present in the area.

2.9.3 Description of Potential Impacts

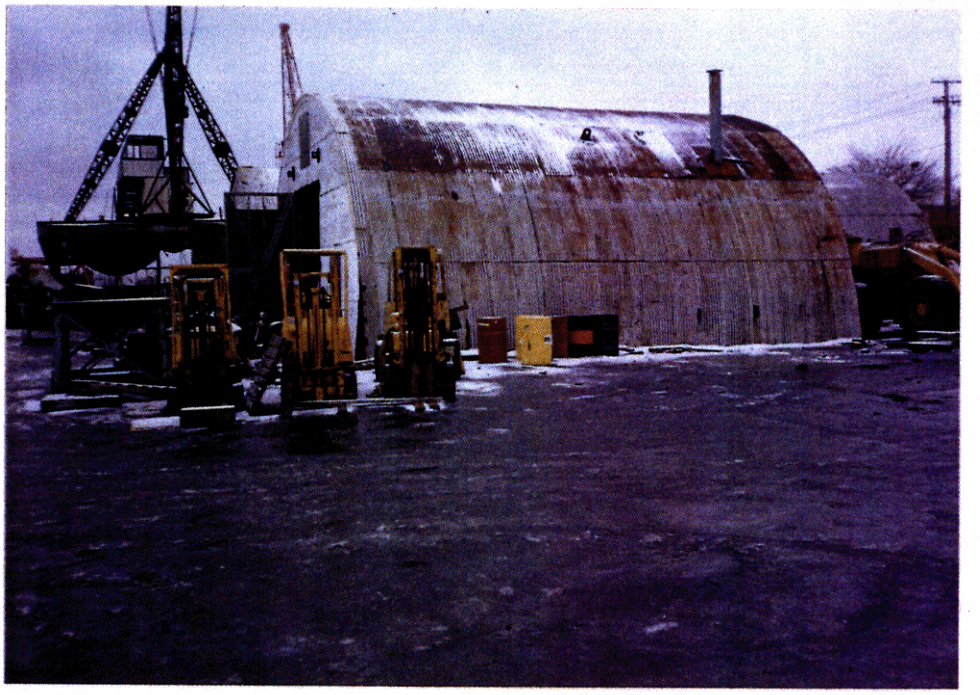
Building 42 and the surrounding area appear to represent a significant potential impact to the environment. The used sand blast grit deposited around the building exterior could be a source of heavy metals. The grit would contain heavy metals from the paints removed during the sand blasting operation. An analysis of this grit performed by Derecktor was found in the file review (Appendix G) and showed the material to be non-hazardous based upon extraction procedure (EP) toxicity testing. Elevated levels of lead were found in the analysis; however, the composition of the used grit would be expected to vary based upon the coatings being sand blasted. Further testing of the deposited grit appears warranted.



Building 41 - West Side of Hut 4, Looking Northeast, Cable and Rope Storage Area (Hut 5) **A**

Building 41 - West Side of Hut 4, Looking East, Front of Hut 4 **B**

EXHIBIT 2-5a



Building 41 - South of Hut 4, Looking North, South Side of Hut 4 **A**

EXHIBIT 2-5b

Building 42 - East Side, Looking South, Note Scrap and Drums Stockpiled for Removal **A**

Building 42 - East Side, Looking North, Note Drums Stockpiled for Removal **B**

EXHIBIT 2-6a

Building 42 - South Side, Looking Southwest, Note Storage Racks of Metal **A**

Building 42 - East Side, Looking North, Note Fill Material in Front of Building is Used Sand Blast Grit **B**

EXHIBIT 2-6b

Building 42 - West Side Looking South

A

Building 42 - Interior Boiler Room

B

EXHIBIT 2-6c

Migration of liquids disposed in the area northeast of Building 42 to the Bay is a major cause of concern. Oils and oily sludges were reportedly deposited in the area and other materials, such as solvents from dry dock painting operations, may also have been deposited.

The large quantities of hazardous materials handled and stored inside Building 42 raises concerns as to impacts on the building interior. The heavy staining on the concrete floor suggests spillage and poor handling and housekeeping practices. The building interior also has large quantities of refuse and debris that need to be removed. The suspected presence of ACM and lead paint need to be confirmed.

2.10 BUILDING 234

2.10.1 Building History and Use

Building 234, otherwise known as the Transit Shed, was originally constructed by the Navy in 1956. According to an engineering drawing, dated 6 April 1954, obtained from the NETC Public Works Office, the land beneath Building 234 was fill material behind a bulkhead placed for this building. The original Transit Shed was 300-feet long and 100-feet wide. The exact use of this building by the Navy is not known but according to Roger Poisson of NETC, supplies and materials were assembled and stockpiled in the building prior to being loaded on ships. At the time of the lease to Derecktor, the building was being used by the Newport Shipyard, Inc.

Upon the lease of the site to Derecktor, Building 234 was significantly enlarged by Derecktor. The existing building roof was removed and the existing building was completely enclosed by a new Building 234. Construction of the new Building 234 began in 1979. Upon completion, the new Building 234 provided over 160,000 square feet of interior space for ship fabrication and assembly.

Building 234 was used by Derecktor as the primary area for new steel-hulled ship construction. Steel plates were cut, bent and welded into modules that were then assembled into the finished ships. Two 50-ton overhead cranes were used to move modules into position. Completed ships were launched out large doors along the western side of the building.

Located off the southeast corner of Building 234 was the area identified as the "south hazardous waste storage area" in the inspections conducted by EPA in 1984. The area was reportedly used by Derecktor for the storage of hazardous materials starting in November 1983. According to the "Contaminated Soil Excavation Containerization and Proposal Plan" prepared in July 1984 by Dolce, Spirito & Associates (Appendix H), the south storage area was approximately 90 feet x 50 feet in size. The inspection of this area by EPA in February 1984 found 55 four-gallon cans of used paint, and paint thinner, 27 unmarked barrels and evidence of spills. Some of the containers were open. A soil and groundwater sampling program was required by EPA and conducted by Dolce, Spirito in September 1984. The results of the soil sampling were reported by Dolce, Spirito in November, 1984 (Appendix I). Their sampling showed methyl isobutyl ketone (MIBK) at a concentration of 1.3 parts per million (ppm) as the only volatile organic compound detected. Cadmium, at a concentration of 0.084 ppm was the only Extraction Procedure (EP) Toxicity metal detected at an elevated concentration. No results of any groundwater sampling were found in the files reviewed. Based on these results, EPA agreed with Derecktor that no soil excavation was necessary from this area.

2.10.2 Description of Current Conditions, Contaminants Found

The northern section of the Building 234 consisted of a boiler room, a machine shop and parts storage room and in the northeast corner of the building the "burning room." At the time of the inspection, there was no interior lighting in this section of the building which limited observations.

The machine shop and parts storage room still contained large quantities of small machine repair parts. Numerous small containers of oils and cutting fluids were observed. Nine 10-gallon pails and two 55-gallon drums of oil were present. There were numerous oil stains on the floor and one large puddle of oil that covered an area of approximately 40-square feet. There was a trough in the floor approximately one-foot wide and six-inches deep covered with a metal grate. This trough ran through the middle of the room but a discharge point could not be found.

The "burning room" was described by Jeffrey Crawford as the location for a computer-controlled plasma cutting arc machine. This machine was used for precision cutting of large steel plates. The exact operation of this machine is not known. During the site inspection, the floor of the room was observed to be heavily stained with oil. Two 55-gallon drums of oil along with other smaller containers (10-gallon) of oil were observed in the room, (See Exhibit 2-7a). A small floor drain with oil staining surrounding it was observed in this room approximately 10 feet from the western wall of the room.

At the time of this inspection, the main large assembly area of Building 234 was being used as a display area for auction items. Along the interior walls of the building, however, was general debris and refuse such as wooden blocks and assorted metal pieces. In the southeast corner of the assembly area was a sand blasting unit. Adjacent to the unit were thirteen 55-gallon drums of material labelled "Rotoblast." The components of rotoblast were listed as carbon silicon, manganese and iron. The concrete floor around the sand blast unit was covered with this rotoblast material. It is estimated that an area 75-feet by 30-feet and up to three inches deep was covered.

In the far southeast corner of Building 234 were four wooden structures apparently used for offices and spray painting storage areas. The southeast corner was littered with trash, scrap metal, plastic pipe and rotoblast material.

At the southern end of the building was the erection area. Under the large overhead cranes, large pieces of heavy equipment were being stored or repaired. This equipment included a crane on tracks, forklift trucks, a tanker truck and a pickup truck.

The original Building 234 comprises a major portion of the western part of the current Building 234. This area was used as a machine shop, electrical shop and pipe shop. A large parts storage area was located along the eastern side of the original Building 234. This parts storage area was still completely stocked at the time of the inspection with everything from nuts and bolts to sealants, lubricants, and welding flux. All of these materials were clearly labelled and most were commercial sizes.

On the northern exterior of Building 234, sand blasting operations were apparently conducted by Derecktor (See Exhibit 2-7a-d). These operations utilized a sand blasting grit material called "black beauty" to remove paint from various surfaces. After black beauty is used to sand blast a surface, the used black beauty

Building 234 - North Side, Looking East, Drums of Used Sand Blast Grit **A**

Building 234 - North Side, Looking East, Note Spray Paint Booths Removed 1/93 **B**

EXHIBIT 2-7a

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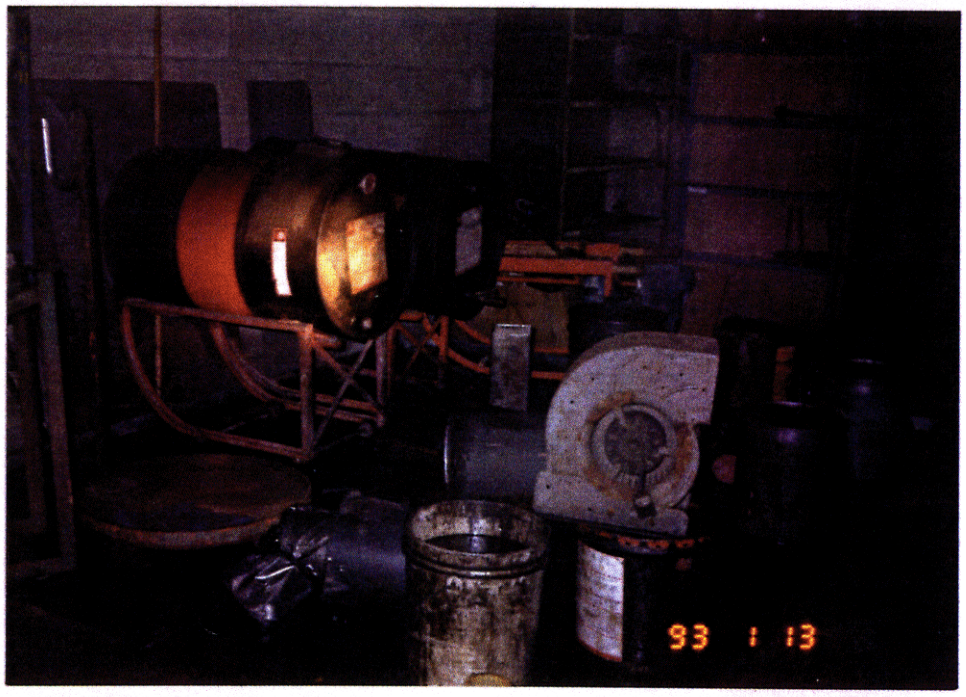

Building 234 - Northeast Corner, Drums and Containers of Oil Inside "Burning Room" **A**

Building 234 - North Side, Looking Easter, Trailers and Other Structure used for Spray Painting.
Black Material in Foreground is Sand Blast Grit (10/92) **B**

EXHIBIT 2-7b

Building 234 - Southeast Corner, Looking West, Note Reddish Staining on Rocks

A

EXHIBIT 2-7c

Building 234 - Southeast Corner, Looking South, Drums and Piles of Slag Like Material **A**

Southern Shoreline - Looking North, Toward South End of Building 234 **B**

EXHIBIT 2-7d

contains chips of the removed material. Although the exact coatings sand blasted by Derecktor are not known, typical marine points would contain heavy metals such as lead and cadmium. Numerous 55-gallon drums of used sand blast grit were stockpiled in this area. The ground surface was also covered with large quantities sand blast grit. It would not be determined if this grit had been used in sand blasting operations or was virgin product. The grit was observed in and around a catch basin in the area.

The northern exterior area was also used by Derecktor for painting operations. Box trailers from tractor trailer trucks were set up in this area for use as paint spray booths. These trailers were observed by HALLIBURTON NUS Team members during a visit to the site in November 1992, but these trailers had been removed at the time of the detailed site inspection.

It is believed that two 10,000-gallon underground storage tanks (UST) storing No. 2 fuel oil are located on the north side of Building 234. Engineering drawings reviewed for Building 234 show one 10,000-gallon UST located adjacent to the boiler room but according to Jeffrey Crawford and the 1987 site SPCC Plan, two 10,000-gallon UST's exist in this area. According to the SPCC Plan, both tanks are steel tanks and were installed in 1987 by Donatelli Construction Co. The SPCC plan also indicated that a 2,500-gallon UST for No. 2 fuel is located in the area of Building 234; however this tank could not be located. The SPCC Plan is provided in Appendix E.

According to the Certificate of Registration (Registration number 820) filed by Derecktor in 1985 with RIDEM, only two 10,000-gallon USTs were registered and the age of each tank would indicate installation in 1981 or 1982. Since the two 10,000-gallon USTs believed to be located north of Building 234 were reportedly installed in 1987, it is believed these tanks were never registered. In addition, the 2,500-gallon UST is not indicated on the Certificate of Registration. The Certificate of Registration may be found in Appendix I.

According to spill incident reports reviewed at RIDEM, a spill occurred on October 31, 1987 on the north side of Building 234. According to the report (Appendix J), the 10,000-gallon UST was overfilled by a Derecktor employee and fuel oil entered an adjacent storm drain and then discharged to Coddington Cove. Spill response measures were taken by Derecktor and the spill was cleaned up. It was estimated that approximately 100 gallons or less of fuel oil was released.

Along the exterior southeast corner of the Building 234, Derecktor operated a steel plate storage yard. At the time of the inspection, numerous pieces of steel plate were still present in this area. Other assorted pieces of wood and other general refuse were observed in this area. Three catch basins were located in the area. Around each catch basin the presence of reddish brown solids was observed. Several 55-gallon drums of hard slag-like material were observed. This slag-like material was also piled on the ground (See Exhibit 2-7).

Two trailers were parked alongside the exterior of building. Each trailer was apparently used to house air compressor units. A smaller box trailer was also parked in the area and contained scrap electrical fixtures, wires, circuit plates and ductwork.

The south exterior side of Building 234 is situated directly on the shore of Coddington Cove. There is not a retaining wall in this area, just a grassed slope with large stone riprap along the waterline. Reddish

brown rotoblast grit was observed covering much of the ground surface and rocks in this area (see Exhibit 2-7b). Parked directly along side the building was a box trailer that contained an oil fired boiler unit. In addition to the boiler were two 250-gallon oil tanks and one 100-gallon oil tank. It could not be determined if these tanks contained product. An outfall from a 36-inch storm drain system empties into the Bay in this area.

The open shoreline south of Building 234 was included in the property leased to Derecktor. Along the eastern boundary of this leased land and the Navy property, piles of fill material and concrete rubble were observed. This material was reportedly from excavations conducted as part of the expansion of Building 234 by Derecktor. Along the shoreline, trash and debris including plastic containers, tires, pieces of wood and some large pieces of concrete, were observed.

The west side of Building 234 was generally clean at the time of the inspection. This area is a concrete paved platform supported by a steel bulkhead. The southernmost end of the platform was a launching area for ships assembled in Building 234. During the site inspection, some pieces of wood and steel were stored along the platform and adjacent to the building.

2.10.3 Description of Potential Impacts

Based on records reviewed, interviews with former Derecktor personnel and observations, Building 234 and the surrounding area represent significant potential impact on the environment. Petroleum products were widely used within the building and large areas of staining was observed particularly in the machine shop and the burning room. Some of these products may have been released to floor drains in the building. Abandoned hazardous materials within the building need to be removed along with general refuse. The rotoblast material within the building needs to be removed. A hazardous waste determination of the rotoblast material should be conducted to assess the potential for contamination.

General clean-up of the building exterior is necessary to remove general trash and refuse. Included with this refuse may be hazardous materials. The sand blast grit along the north side of the building also needs to be assessed. A hazardous waste determination should be conducted on the sand blast grit. If the grit is used sand blast grit, it potentially could contain heavy metals associated with paints and coatings such as lead and cadmium. This material has most likely migrated into Coddington Cove either through surface water flow or through the storm drain system. The presence of the rotoblast grit on the ground outside the south and east sides of the building raises concern due to the proximity of this material to the Bay. This material may also contain metals if the rotoblast was used to sandblast painting surfaces.

The two 10,000-gallon USTs believed to be located along the north side of the building are of concern given their construction and proximity to the Bay. It is not known if these tanks were ever leak tested or if they still contain fuel oil. The exact age of the tanks could not be determined from either Derecktor, Navy, or RIDEM files.

2.11 BUILDING 18

2.11.1 Building History and Use

Building 18, also known as Building 18A, is located on the pier next to the Yard Patrol Berthing area. The pier extends approximately 300-feet out into Coddington Cove. The building was not part of the original lease to Derecktor but was acquired later in 1979 in exchange for the Navy's use of the south side of Pier II.

The building has a wooded exterior and covers an area of 12,000 square feet (200'x 60'). The area surrounding the building is asphalt paved. The building contains a lobby, two penthouse type offices, and small workshop areas. According the facility records Building 18 was built in 1943 and the Navy used the building as a coal barge off-loading facility. Derecktor used the building as a doctor's office, Central Drawing's Control/Central Operator area, office space, and various workshops.

2.11.2 Description of Current Conditions, Contaminants Found

Located within the lobby of Building 18 are 12-inch square floor tiles which are suspected to contain asbestos. The Testing Room has several medium-sized oily stains on the floor and the Blueprint Room has one 55-gallon drum of hazardous developing material. Within the Photo Developing Room there are stains of unknown material on the floor and five empty ammonia cylinders. Downstairs are miscellaneous workshops and rooms with some miscellaneous staining on the floors. Bags of welding flux were observed adjacent to the side stairs. Located on the west side of the building were two drums of Oakite (phosphoric acid) and two 250-gallon heating oil tanks. It could not be determined if the tanks contained product.

2.11.3 Description of Potential Impacts

Building 18 has a low to moderate potential for environmental impact. Its location in the Cove raises the question of whether the waste facilities, including bathroom and sink drains, are connected to the municipal sewer system or whether they discharged elsewhere. The storage of hazardous materials is of concern because of the building's proximity to the water.

2.12 BUILDING 62

2.12.1 Building History and Use

Building 62 is located on the eastern portion of the site south of the Fleet Pier Access Road, north of Buildings 2, 3, 4, 5 and 6. It was built in 1957 and constructed of concrete block. Its floor space area is approximately 1,296 square feet. The building is an old gasoline/service station and was used by Derecktor Shipyard as a security office and fire station. It has a garage with a two bays, rear office space and a lobby.

2.12.2 Description of Current Conditions, Contaminants Found

The concrete floor inside the garage area was heavily stained with oil. The left bay in the garage area has a 3' x 3' sump which was filled with oil and water. In the right bay, there were approximately forty fire extinguishes piled in a heap. This bay also had a hydraulic lift with a reservoir of oil probably under the floor. The rear office contained 25 to 35 fire extinguishes, twelve 1-gallon paint cans, two 6-foot compressed gas cylinders, and two 1-foot compressed gas cylinders. Floor tile in the lobby is suspected to contain asbestos. Lead paint may also be present throughout the building.

The area in front of the building (west side) is paved with asphalt. Concrete slabs for the gasoline pumps were still present, but the pumps have been removed. While the remaining area surrounding Building 62 is unpaved, distressed vegetation was observed surrounding the building especially on the south side of the building. On the east side next to the building is an above-ground 250-gallon fuel oil tank.

There are some discrepancies concerning the existence and closure of underground storage tanks at Building 62. Records reviewed (Appendix K) shows a Coddington Cove Maintenance Work Order authorized by the Navy for the removal of two 6,000-gallon tanks, two 3,000-gallon tanks, and one 550-gallon waste oil tank. The Certificate of Closure for Underground Storage Facilities issued by RIDEM dated June 11, 1987 indicates that two 6,000-gallon tanks, two 4,000-gallon tanks, two 250-gallon tanks, and one 500-gallon tank were removed. The records do not indicate where the additional two 250-gallon tanks were located or the discrepancies in the size of some of the tanks. It is also not clear if additional tanks were present at Building 62 other than the seven that were removed in 1987.

2.12.3 Description of Potential Impacts

The potential for environmental impacts from Building 62 is considered as moderate. This is due to the fact that the records concerning the closure of the underground storage tanks are unclear and, therefore, a more definitive potential impacts assessment cannot be made. For example, leakage or spillage during removal or affected soil existence and removal was not recorded in the closure certificates. Upon removal, the only description concerning the condition of the tanks was that they were thirty-year-old steel fuel tanks.

2.13 WATERFRONT AREA

2.13.1 Area History and Use

The waterfront area of the Site, stretches from Building 234 to Pier II and has been actively used by both the Navy and Derecktor. Prior to the lease to Derecktor Shipyard, yard patrol boats were moored at the pier adjacent to Building 18. The paved platform east of Pier I, from Building 42 to Pier II, was used by the Navy as a parking lot. This is clearly shown in aerial photographs of the site taken in 1965 (Appendix L). No buildings or other structures can be seen along the waterfront at this time except for Buildings 42, 18, 234 and 40 and 41 in their original location.

During the lease to Derecktor, the waterfront area was utilized to support the shipyard operations. A former auto ferry, the Greenport, was moored at the Yard Patrol Pier. Other ships and barges were also moored in this area based upon shipyard needs. The platform near Pier I was used for storage of equipment and

materials. South of the Fleet Pier Access Road were relocated Buildings 40 and 41 (described earlier) along with outdoor storage of cranes, storage tanks, forklifts and shipyard trucks and heavy equipment. A sand blast grit (black beauty) loading area was established adjacent to the southern slope of the access road.

The main hazardous waste storage area was established on the waterfront north of the Fleet Pier Access Road. This storage area was surrounded by a 7 foot high chain link fence. The drums were completely exposed to the elements and containment berms were not observed. Two 5,500-gallon tanks for bilge water were located immediately south of the hazardous waste storage area. The north platform was also used as a storage area for general shipyard materials such as empty 55-gallon drums, wooden dock pilings and general debris.

Located immediately south of the present hazardous waste storage area was the area identified in the 1984 EPA inspections as the "north hazardous waste storage area."

The EPA inspection of February 3, 1984 revealed that in this area there were 142 umarked 55-gallon drums of which approximately 40 were opened. The inspection report also noted that there was evidence of spills and damaged and corroded drums. Three drums were reported to be leaking Mobil Lube oil. Similar to the South Storage area, EPA required that a soil and groundwater sampling program be conducted in this area. This was done by Dolce and Spirito in September 1984 once reported in November 1984 (Appendix I). The soil sampling results showed that at none of the location's sampling in the north storage area did either the volatile organic concentrations or the EPA toxicity metals exceed the specified limits. Based on these results, no soil excavation was performed in this area. No results of groundwater sampling could be found in the files reviewed.

2.13.2 Description of Current Conditions, Contaminants Found

At the time of the inspection, the waterfront area was being used as a staging area for equipment and materials offered for the auction. Floating structures moored adjacent to the waterfront such as the Greenport Ferry and work barges were not inspected, although files and records related to the Ferry were reviewed. According to Mr. Crawford, the Greenport Ferry was used for sand blasting operations and for machining and welding of metal pieces as part of the final outfitting of ships. Sanitary facilities were on board but it is not known if they were connected to the sanitary sewer system. According to the SPCC Plan, there was a 10,000-gallon steel tank on board which held No. 2 fuel oil.

West of the Building 42 six storm drain outfalls were observed discharging to the Bay. Located near the breakwater just north of Building 42 were the remains of the original roof of Building 234. This roof material and debris had been placed in the area following the construction of the new Building 234. According to Roger Poisson the steel girders of the roof were salvaged and contained asbestos fibers. Asphalt roofing materials and a fiber-like panel material were observed on the shoreline and in the bay.

At the time of this inspection, drums of hazardous waste had been removed from the north platform hazardous waste storage area (See Exhibit 2-8a). Several drums remained in this area, but none were labeled as hazardous waste. Some drums and open containers of oil were observed. The two bilge water tanks had been removed. There was considerable staining on the asphalt around the bilge tanks and the

Waterfront Area - Northwest of Hazardous Waste Storage Area Looking West,
Pile of Debris Along North Platform

A

Waterfront Area - Looking East, West Side of Hazardous Waste Storage Area, North Platform 1/13/93

B

EXHIBIT 2-8a

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hazardous waste storage area. A large pile of general refuse, pallets, cardboard and brush was observed on the north platform. It is estimated that the pile was 150-feet long, 30-feet wide and averaged 10-feet high. A large pile of long, treated wooden pilings was also observed (See Exhibit 2-8b and 2-8c).

Located on the north platform adjacent to the Fleet Pier Access Road is Building 687. This small (approximately 800-square feet) concrete block building was reportedly used historically by the Navy as an incinerator building. According to files reviewed, the incinerator was used for the destruction of confidential materials. From the site inspection it appeared that the incinerator had not been used for some time. According to Jeffrey Crawford, Derecktor utilized Building 687 for the storage of paint. Evidence of spray painting was observed on the pavement around the building.

Also, located on the north platform was a fenced area identified by the Navy as a 5,000-kilo volt substation (See Exhibit 2-8d). This area was enclosed by a 7 foot high chain link fence. At the time of the inspection, concrete pads were observed within the fenced area but no transformers or other electrical equipment were present. Correspondence in the NETC files referenced three pole mounted transformers at the "old NETC electrical substation." Reportedly, these transformers were the property of Derecktor. No further correspondence regarding the disposition of these transformers was found.

A small wooden building and an electrical transformer were observed located south of Pier I along the waterfront (See Exhibit 2-8d). This transformer was not labelled to indicate the existence of PCB containing materials. No mention of this transformer was found in the files reviewed.

A metal bulkhead runs along the western edge of the north platform and forms the boundary with the Bay. In some areas, portions of the paved platform and bulkhead had eroded away. These eroded areas had been filled in with debris and sand blast grit. The exact nature of the fill was difficult to determine because of snow covering the ground.

2.13.3 Description of Potential Impacts

Based upon the activities conducted by Derecktor and the conditions observed during this site inspection, petroleum products and possibly hazardous materials were are believed to have been released to the ground surface along the waterfront. It is also likely that some of these materials migrated into the Bay through overland flow or storm drain outfalls. These storm drain outfalls are further described in Section 3.0 of this report. These activities along the waterfront represent a moderate to significant potential impact to the environment. The cessation of Shipyard operations and removal of hazardous wastes from the north platform has reduced the potential for environmental impact but more clean-up is required in this area. Although much of the waterfront area is paved, the possibility of contamination of subsurface soils exists due to the existence of areas of deteriorated pavement around the hazardous waste storage area. Shipyard operations aboard the Greenport Ferry as well as vessels under construction or repair also present potential impacts to the water and sediments of Coddington Cove.

Waterfront Area - West of Hazardous Waste Storage Area Looking East,
Bilge Tanks on North Platform, (11/92)

A

Waterfront Area - West of Hazardous Waste Storage Area Looking Northeast,
Hazardous Waste Storage Area, North Platform (11/92)

B

EXHIBIT 2-8b

00214 G B10Y

Waterfront Area - Approximately 350 Feet North of Pier 1, Looking Northeast
Pile of Treated Wooden Pilings on North Platform

A

Waterfront Area - Approximately 150 Feet North of Pier 1, Looking North, North Platform Retaining Wall.
Note Backfill of Eroded Area with Debris

B

EXHIBIT 2-8c

Waterfront Area - Approximately 150 Feet South of Pier 1, Looking West, Wooden Building and Transformer on Platform

A

Waterfront Area - Northeast of Pier 1, Looking Southeast, Building 54 Electrical Sub Station

B

EXHIBIT 2-8d

2.14 PIER I

2.14.1 Area History and Use

Pier I was constructed by the Navy in 1955 to replace pier space lost to Hurricane Carol. The Pier is 1,575 feet long and 100 feet wide. It is constructed of reinforced concrete supported by concrete pilings with wooden fenders. Electric, water and steam lines run along the underside of the pier. Railroad spurs run along each side of pier and in turn connect to the main rail line running through the site. Six small permanent buildings are located on the pier. These are Buildings 58, 59 and 60, which were identified by the Navy as garbage stands, and Buildings 394, 395 and 396 which were identified as transformer stations. The pier was used by the Navy as a major ship berthing pier for naval vessels homeported in Newport. Pier II, which is currently used by the Navy as a Shore Intermediate Maintenance facility is located approximately 800-feet due north of Pier I. Water depth around Pier I is as much as 35-feet to accommodate the dry docks.

During Derecktor operations, Pier I was used for ship repair and maintenance operations. These operations consisted of sand blasting and painting, hull inspection, application of new zinc for cathode protection and flushing of shipboard piping systems. Derecktor purchased a large dry dock from Nova Scotia in 1979 and brought it to Newport. The dry dock was later cut into sections and moored along- side the pier. Transformers containing PCBs were removed from the dry dock and stored on the eastern exterior side Building 6 until 1982 when they were removed from the site by Derecktor employees.

The dry docks operated from 1981 until 1985 without a required NPDES permit. Derecktor was found guilty of Clean Water Act violations. Derecktor obtained a NPDES permit for the dry dock operations in 1987.

2.14.2 Description of Current Conditions, Contaminants Found

During the inspection equipment and material along Pier I were being prepared for sale at the liquidation auction. As such, there were assorted scrap items over the pier, including 55-gallon drums (some empty, some filled but unlabelled), compressed gas cylinders, scrap metal pieces and general refuse which included a 55-gallon drum filled with fluorescent light bulbs. Two sand blast grit hoppers were present on the pier along with piles of grit on the pier itself. Extensive paint stains were observed on the pier especially at the western end, (See Exhibit 2-9a and 2-9b).

Based upon observations during the site inspection, the three "garbage" stands were utilized for reasons other than garbage by Derecktor. The first building (eastern end) contained boiler units. Four 55-gallon drums and two 30-gallon drums of water treatment chemicals were observed in the building. Of the remaining buildings on the pier, one was used as an employee locker room and the other as a machine shop. Additional small temporary buildings were also brought onto the pier by Derecktor. The use of these buildings could not be determined as they were locked and could not be inspected.

The three buildings designated as load centers, Buildings 394, 395 and 396 contained various electrical equipment such as electrical panels and wires. According to correspondence reviewed in the NETC files (Appendix M), transformers in these buildings were evaluated by the Navy for the presence of PCBs. Transformer T-266 in Building 395 is owned by the Navy. It was found to be contaminated with PCBs

Pier 1 - Looking East from West End of Pier, West Side of Building 396 in Foreground. Note Debris and Scrap Metal on Pier

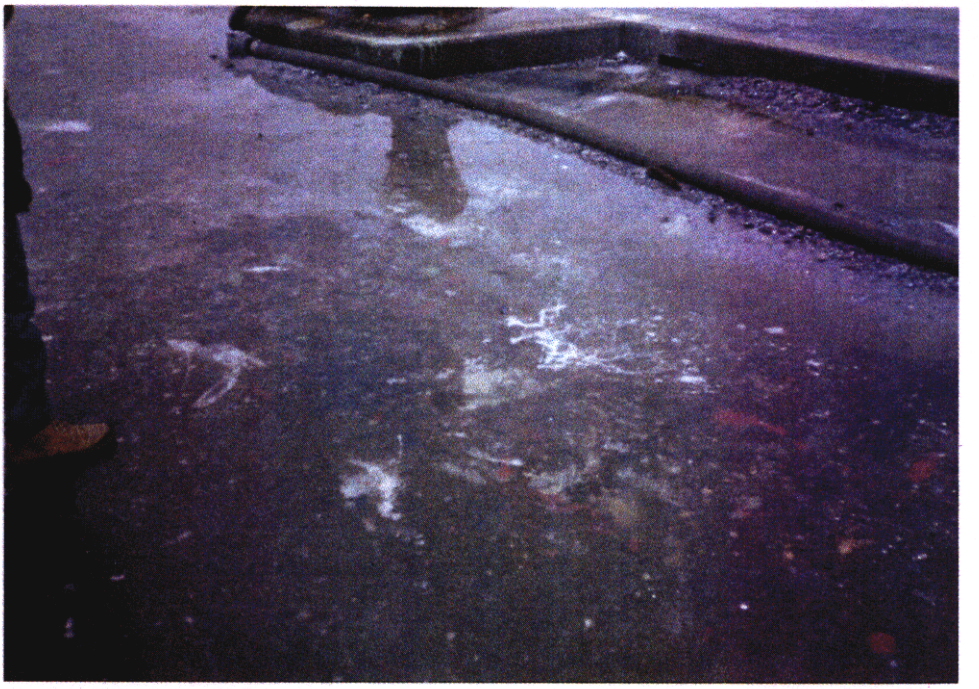
A

Pier 1 - Approximately 100 feet from West End, Looking Northeast, Sand Blast Grit Piles on Pier

B

EXHIBIT 2-9a

00214 6 B 11Y



Pier 1 - Approximately 100 Feet from Northwest End, Paint Staining on Concrete Surface **A**

EXHIBIT 2-9b

(56 ppm) and was scheduled to be removed by the Navy. Derecktor requested, however, that the transformer be retrofitted instead of removed. Reportedly the retrofit was conducted but follow-up testing by Derecktor failed to prove that the transformer was not still contaminated. No records were found documenting additional testing of the transformer.

File documents were also reviewed regarding the operation of the dry docks and the release of sand blast grit, paint and other materials. These materials were released into the Bay when the dry docks were submerged at the completion of maintenance operations. The extent of contamination from sand blast grit and other materials on the floor of the bay around Pier I was evaluated in two separate studies (Appendix N). The first study (1986) was a bathymetric survey done by Science Applications International Corporation (SAIC) on the south side of Pier I. The results of this survey were that of the 17,200 square meters of seafloor surveyed, 17 percent was contaminated with sand blast material. The material was dispersed throughout the sedimentary matrix and the total amount of material on the seafloor could not be determined.

The second study was conducted by the Army Corps of Engineers in 1987 and involved the collection and laboratory analysis of marine sediments. Samples were taken on the north and south sides of Pier I, and in the vicinity of Pier II. Results showed that of the 20 samples taken on the south side of Pier I, 13 were "highly contaminated" for at least one of three trace metals, copper, lead and zinc. Highly contaminated was defined by the Corps to be concentrations greater than 400 parts per million (ppm) of copper and zinc and greater than 200 ppm of lead. Samples from around Pier II also exhibited high concentrations of the same metals. One sample from Pier II also showed the presence of PCB's at 6 ppm.

The Environmental Audit Report by AET (see Appendix C) also described operations on the pier which posed environmental risk. Among the items noted were cans of paint and solvent (some opened) being stored along the edge of the pier containers of various non-essential chemicals littering the dock, off loading of bilge oil from ships into 55-gallon drums without automatic shutoff valves, and the unknown disposition of citric acid solutions used to flush shipboard piping. It is not known if these conditions were corrected following the audit. Table 2-3 provides a listing of hazardous substances formerly used in the dry dock.

The files also contained accounts of ACM being removed from ships and being stockpiled on the pier. Some of the ACM was contained in barrels or plastic bags however some of the ACM was stored in open areas. Three spills of petroleum products were also reported to have occurred in the pier area. Each of these spills were reportedly minor and were cleaned up.

2.14.3 Description of Potential Impacts

Based upon the conditions observed and the activities known to have occurred, significant impact to the environment is likely in the area of Pier I. The greatest impacts would appear to be to the marine environment from the sand blast grit and other materials released to the Bay from the dry dock operations. Testing conducted by the Navy shows that elevated levels of metals are present in the marine sediments

TABLE 2-3

LISTING OF HAZARDOUS SUBSTANCES FORMERLY USED ON DRY DOCK*

Chemical Name	Trade Name
Argon	Bulk Bottled Gas
Aromatic Hydrocarbon	AAA 130 Solvent
Asbestos	Contract Jobs
Benzene	Cleaning Solvent
N-Butanol	AAA 115 Green Epoxy Primer
Butoxyethyl Acetate	PRC #4 Primer
N-Butyl Acetate	Interchloro HB Paint
N-Butyl Alcohol	Interguard AAA 108/109
Cellosolve	Zinc
Cellosolve	Zinc
Cellosolve Acetate	PRC 420
Chlorine	Sodium Hypochlorite
Copper	Silvaloy 15, 45, 50, 45N Galvalume/Bethalume Cast Bronze High Copper Alloys
Cupros Oxide	Devran 214
Ethanol	NQA 203 Interplate Zinc EXA 478 Zinc Dust
Ethylene Diamine	Interguard Curing Agent
Ethyl Alcohol	GTA 078 Solvent 3M-1711 Scotch Grip
Lead Carbonate	Fish Oil (Mixed)
Lead Oxide	Fish Oil (Mixed)
Lead Silicromate	Universal Primer #745
Lubricating Oil	Drew Marine Oil
Quartz	Mineral Sand/Ferrous Aluminum Silicate
Sodium Chlorite	Tank Cleaner
Zircon	Mineral Sand/Ferrous Aluminum Silicate

*Table is copied exactly as was presented in the "Hazardous Material Handling Crew Training Guide 1988-1989."

but the extent of the contamination is not known. Impact would also be expected from the sand blasting and painting operations that occurred on the pier itself. In order to assess impact to the Bay from pier operations it will be necessary to establish background concentrations for metals in the marine sediments and also to differentiate Derecktor impacts from those of adjacent Navy operations.

3.0 POTENTIAL ROUTES OF CONTAMINANT MIGRATION

3.1 STORM DRAIN SYSTEM

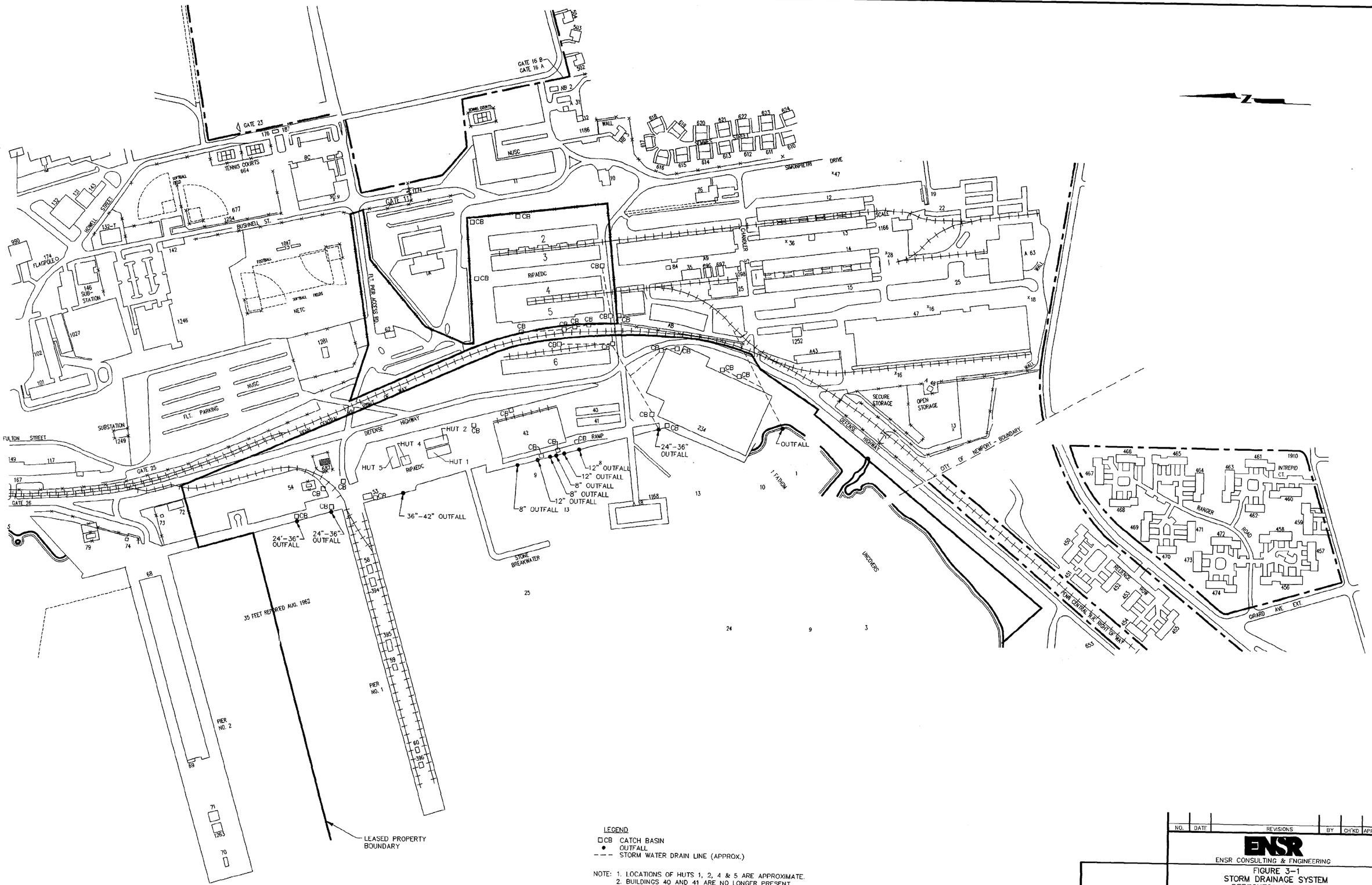
Engineering drawing files within the Public Works section of NETC were reviewed for information regarding the site storm drain system. Figure 3-1 shows the locations of storm drains, catch basins and outfalls identified during the site investigation. The information found was related to modifications that occurred as a result of Derecktor's expansion of Building 234. A drawing marked "As Built Drawing, Underground Utilities" by Donatelli Building Co. Inc. 1982 shows a 30-inch reinforced concrete pipe (RCP) starting at a drainage manhole off the southeast corner of Building 6 which heads southwest and eventually leads into Coddington Cove off the northwest corner of Building 234. According to a drawing prepared by Henry J. Coupe Associates, Inc. dated July 1, 1981, this 30-inch RCP is the main storm drain pipe that runs along the south side of Buildings 2, 3, 4, and 5.

The Donatelli drawing shows two 12-inch RCP's connecting to this 30-inch drain line. The first 12-inch RCP comes from the southeast and collects surface drainage along the paved road on the east side of Building 234. The second 12-inch RCP is shown as a perimeter drain that originates on the east side of Building 234 flowing north. The drain continues along the north side of Building 234 intersecting a catch basin just west of the boiler room. Eventually this drain line connects to the 30-inch RCP about 40 feet north of the northwest corner of Building 234.

This 30-inch RCP storm drain line would appear to be a primary pathway for contaminants from the site to enter Coddington Cove. Since this line originates south of Buildings 2, 3, 4, 5 and 6 it is suspected that north-south running laterals between these buildings also connect to this line. Any discharges to catch basins in these areas, based on observations made during the site inspection, would have been released to the Bay. The catch basin north of Building 234 was observed to be heavily silted with sand blast grit (black beauty). This material also would have been released to the Bay via the storm drain system.

The Donatelli drawing also shows an 18-inch iron storm drain line exiting on the west side of Building 234. This pipe exits about 140 feet south of the northwest corner. The pipe is shown to head west for 25 feet and then turn south almost 30 feet to connect to a drainage manhole. An 18-inch RCP is shown to exit the manhole into the Bay. This line is labelled as replacing an 18-inch vitrified clay line, presumably from the original Building 234. The origin of this drain line within Building 234 is not known. An unlabelled drawing of the new Building 234, possibly a conceptual drawing, does show a layout of the building with an 18-inch drain line exiting the west side of the building. Ten-inch and 12-inch drain lines from different parts of the building are shown connecting to the 18-inch line. Based upon observations made within Building 234 this drain line is a likely pathway to Coddington Cove for contaminants from operations within the building.

The drawings by Coupe Associates also show the storm drain line that discharges to Coddington Cove on the south side of Building 234. This drain line is a 36-inch RCP that originates east of Defense Highway in the NETC Public Works Garage area. Also connected to this drain line are two 12-inch RCP's which



LEGEND

- □CB CATCH BASIN
- ● OUTFALL
- – – – STORM WATER DRAIN LINE (APPROX.)

NOTE: 1. LOCATIONS OF HUTS 1, 2, 4 & 5 ARE APPROXIMATE.
2. BUILDINGS 40 AND 41 ARE NO LONGER PRESENT.

200 0 200 400
SCALE IN FEET
1" = 200'-0"

NO.	DATE	REVISIONS	BY	CH'KD	APP'VD

ENSR CONSULTING & ENGINEERING

FIGURE 3-1
STORM DRAINAGE SYSTEM
DFRECKTOR SHIPYARD
MIDDLETOWN, RHODE ISLAND

DESIGN: A.J.F.	DATE: 5/93	DRAWING NUMBER 1	
DRAWN: J.E.B.	SCALE: 1"=200'		
CHECKED: C.A.	APPROVED:	SHEET NUMBER 1	REV. NO. 0

5060930

run north-south along Defense Highway and collect surface roadway drainage. Sources of contamination to Coddington Cove from this storm drain line would be a combination of activities within the Shipyard and from the NETC Public Works area.

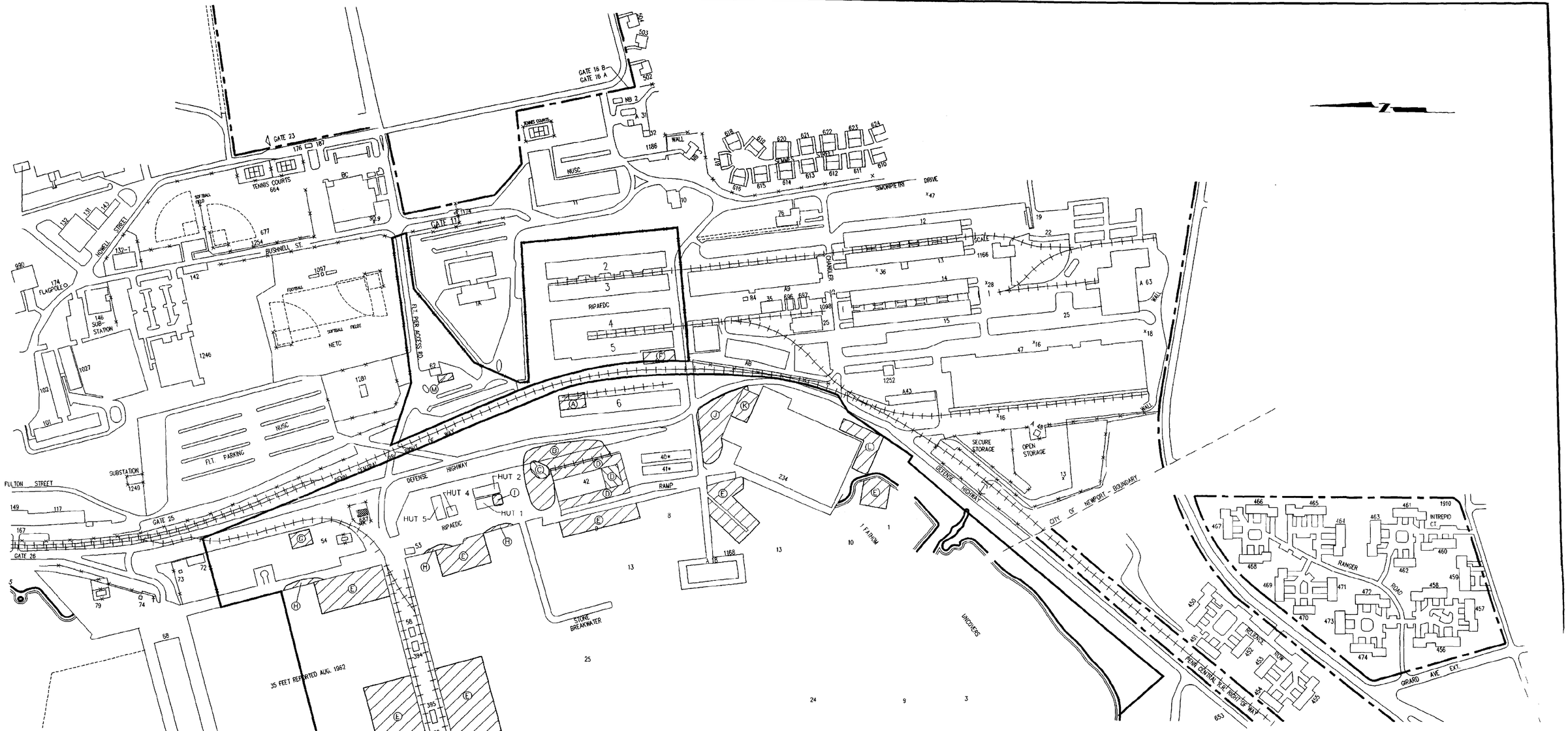
3.2 SURFACE WATER

No surface bodies of fresh water were observed within the Derecktor Shipyard. It is estimated that 80 percent of the Shipyard is covered with either buildings or pavement. Because of this covering and the sloping of the terrain toward the Bay, precipitation does not accumulate on the surface. Consequently, surface water bodies are not a potential pathway for contaminants to migrate from the site.

Narragansett Bay forms the western boundary of the Shipyard and releases of contaminants to the Bay have occurred. These contaminants have probably been distributed throughout the Bay as a result of tides and currents. Because of this action, the waters of Naragansett Bay are a pathway for contaminants to migrate from the site.

3.3 GROUNDWATER

Based upon observations of surface topography, groundwater flow direction is inferred to be west into Narragansett Bay. Depth to groundwater on the site is not known but is presumed to be relatively shallow. Releases of contaminants such as petroleum products and hazardous wastes are known or suspected to have occurred in the main hazardous waste storage area, on the northeast side of Building 42, around the 20,000-gallon fuel oil tank along the waterfront and at the loading dock at Building 6 by the pipe shop. It is possible that these contaminants have migrated through the subsurface soils and reached the groundwater. Migration of site groundwater would therefore be a pathway by which contaminants could reach the Bay.



LEGEND

- (A) PIPE CLEANING SHOP – DIP TANK AREA
- (B) SAND BLAST GRIT FILL AREA
- (C) DISPOSAL PITS (OILY SLUDGE)
- (D) HAZARDOUS WASTE STORAGE WITHIN BUILDING
- (E) OUTFALLS OR PAST OPERATIONS IMPACTING CODDINGTON COVE
- (F) UNDERGROUND STORAGE TANK (UST)
- (G) HAZARDOUS WASTE STORAGE AREA (OUTSIDE) FORMER BILGE TANK STORAGE
- (H) FILL AREAS ALONG BULKHEAD
- (I) MAINTENANCE SHOP FLOOR DRAIN
- (J) SAND BLAST GRIT/PAINT BOOTH OPERATIONS AREA UST'S LOCATIONS
- (K) MACHINE SHOP/BURNING ROOM
- (L) ROBOBLAST AND DEBRIS AREA
- (M) FORMER UST LOCATION

* BUILDINGS 40 AND 41 WERE SUBSEQUENTLY DISSASSEMBLED AND RECONSTRUCTED AS QUONSET HUTS 1, 2 AND 4, 5. LOCATIONS OF THE HUTS ARE APPROXIMATE.

200 0 200 400

SCALE IN FEET
1" = 200'-0"

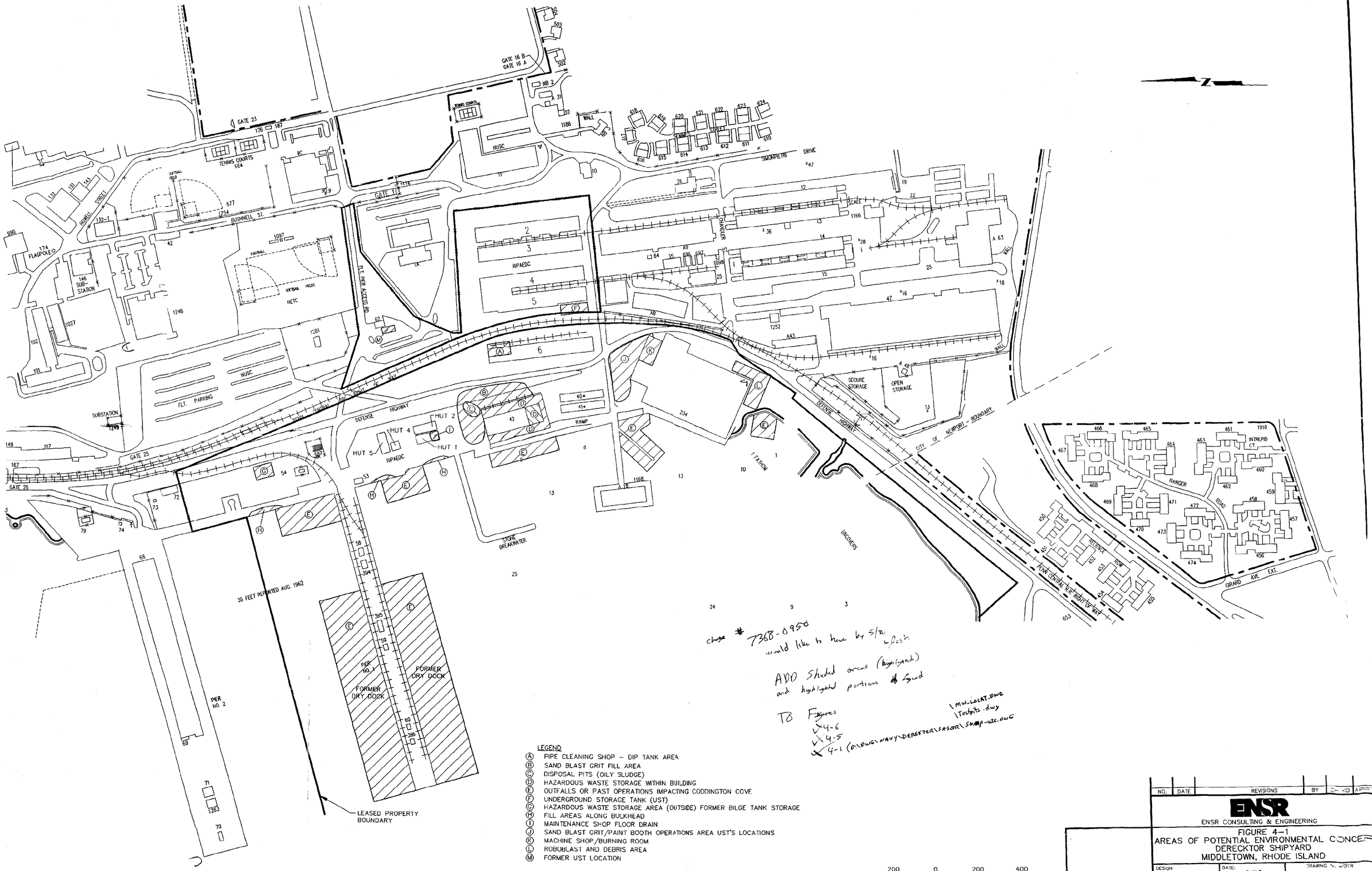
NO.	DATE	REVISIONS	BY	CHKD	APPRD

ENSR

ENSR CONSULTING & ENGINEERING

FIGURE 4–1
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
DERECKTOR SHIPYARD
MIDDLETOWN, RHODE ISLAND

DESIGN: S.R., A.J.F.	DATE: 5/93	DRAWING NUMBER 1
DRAWN: J.E.B.	SCALE: 1"=200'	
CHECKED: C.A.	APPROVED:	SHEET NUMBER 1 / REV. NO.



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\Testpits.dwg

LEGEND

- (A) PIPE CLEANING SHOP – DIP TANK AREA
- (B) SAND BLAST GRIT FILL AREA
- (C) DISPOSAL PITS (OILY SLUDGE)
- (D) HAZARDOUS WASTE STORAGE WITHIN BUILDING
- (E) OUTFALLS OR PAST OPERATIONS IMPACTING CODDINGTON COVE
- (F) UNDERGROUND STORAGE TANK (UST)
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- (K) MACHINE SHOP/BURNING ROOM
- (L) ROBOBLAST AND DEBRIS AREA
- (M) FORMER UST LOCATION

* BUILDINGS 40 AND 41 WERE SUBSEQUENTLY DISSASSEMBLED AND RECONSTRUCTED AS QUONSET HUTS 1, 2 AND 4, 5. LOCATIONS OF THE HUTS ARE APPROXIMATE.

200 0 200 400
SCALE IN FEET
1" = 200'-0"

NO.	DATE	REVISIONS	BY	CHKD	APPRVD

ENSR
ENSR CONSULTING & ENGINEERING

FIGURE 4-1
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
DERECKTOR SHIPYARD
MIDDLETOWN, RHODE ISLAND

DESIGN: S.R., A.J.F.	DATE: 5/93	DRAWING NUMBER 1
DRAWN: J.E.D.	SCALE: 1"=200'	
CHECKED: C.A.	APPROVED:	SHEET NUMBER 1 — REV. NO.

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4.0 CONCLUSIONS AND RECOMMENDED SAMPLING ACTIVITIES

4.1 CONCLUSIONS

Based upon the information reviewed and the observations made during the site inspection the following conclusions regarding the Derecktor Shipyard can be made:

- The Shipyard operations involved the generation of large quantities of hazardous wastes. These wastes included waste oil, paints, solvents, thinners, sodium hydroxide and other waste solids and liquids.

- Housekeeping and hazardous material handling practices at the facility were poor. General debris and scrap materials are widely scattered around the facility.

- Waste materials were known to be disposed of on the property. This includes spent sand blast grit and oily liquids from the dry dock.

- Sand blast grit and metals-contaminated marine sediments are known to exist in the Bay around Pier I.

- Releases of hazardous material to the ground in the hazardous waste storage area (Waterfront) and the pipe shop (Building 6) are suspected but have not been confirmed.

- Interior areas of some buildings, most notably 42, 234, 6, 40 and 4 have been significantly impacted by Derecktor operations. Depending upon the intended reuse of these buildings, significant cleaning or restoration of floors and walls is necessary.

- Clean-up and proper disposal of abandoned 55-gallon drums and other containers, along with assorted trash and refuse on the inside and outside of buildings is necessary. Many drums and containers are unlabelled. In light of the general housekeeping practices, it is questionable whether containers are labelled accurately. Proper identification of contents is necessary for disposal.

- The presence of ACM is suspected in most of the buildings. If renovation or demolition of the buildings is intended, the presence of ACM would need to be confirmed.

- The primary pathways for contaminants to migrate from the site would be the storm drain system and groundwater flow. Coddington Cove would be the primary receptor of contaminants through these pathways. Currents and tidal action would cause contaminants to migrate further in Narragansett Bay.

4.2 RECOMMENDATIONS

To confirm observations and conclusions made regarding environmental impacts at the Derecktor Shipyard, a limited investigative program is recommended. This program would have two objectives. The first would be to collect data to confirm presence or absence of the suspected contamination. The second would be to resolve issues such as the presence of USTs at Buildings 62 and 234 and the outlets of storm drains that could not be determined in this Preliminary Site Assessment. The complete nature and extent of contamination would not be defined. Figure 4-1 provides a schematic diagram of potential environmental areas of concern based on this investigation.

The following investigative activities are recommended:

Soil Sampling - Samples of soil would be collected and analyzed for total analyte list metals plus cyanide (TAL metals) volatile organic compounds (VOC), semi-volatile organic compounds (SVOC) and total petroleum hydrocarbons (TPH). Samples would be collected at both the surface (0-6 inches) and at depth (2 to 4 feet). Samples would be collected from the following areas where stained soil was observed or disposal activities were reported.

- Hazardous waste storage area (Waterfront Area)
- 20,000 gallon fuel tank by Building 40
- Building 234 southeast corner
- Building 234 north side
- Building 42 north and east sides
- Building 6 loading dock area by pipe shop

Ground Water Monitoring - Shallow water table ground water monitoring wells are recommended for areas where liquids are suspected or known to have been released to the ground surface. The wells would be 2-inch PVC installed with a hollow-stem auger drill rig. Following development of the wells, samples would be collected for laboratory analysis of VOC, SVOC and TAL metals. Wells would be located as follows:

- Hazardous waste storage area (North platform);
- Building 6 loading dock by pipe shop;
- Building 42 northeast corner;
- Building 40 west of fuel oil tank.

Marine Sediment Sampling - Sampling of marine sediments is recommended to confirm previous results and to determine if other areas of Coddington Cove have been impacted by the Shipyard. Samples of marine sediments would be collected with both a dredge for surface samples and with a corer to determine concentrations with depth. Samples would be collected in the following areas:

- North and south sides of Pier I;
- Along the waterfront at storm drain outfalls;
- On the east and west sides of the Greenport Ferry including the storm drain outfall at the northwest corner of Building 234;
- At the storm drain outfall west of Building 42;

- South of Building 234 at the storm drain outfall;
- A background location within Coddington Cove away from Shipyard or Navy activities.

Other Investigations

- Hazard Categorization - Categorization of drums and containers abandoned on the Activity is recommended. This process would allow materials to be properly classified and would identify hazardous wastes for disposal.

- Blasting Grit - The used sand blast grit (black beauty) and rotoblast should be analyzed for total metal content and by toxicity characteristic leaching procedure (TCLP) for hazardous waste determination.

- Asbestos Survey - Representative samples of suspected ACM should be collected from the suspected areas in the buildings and analyzed to determine if asbestos is present in pipe insulation and floor or ceiling tiles.

- Underground Storage Tanks - The one UST at Buildings 5 and reportedly two USTs at Building 234 should be leak tested if it is desired to continue using these tanks. If the tanks fail a tightness test soil borings around the tanks would be recommended to determine if petroleum products have been released. The 2,500 gallon UST at Building 234 should be located either through additional record search or a metal detection survey. A metal detection survey is recommended for Building 62 to confirm that all UST's in this area were removed. Soil borings with collection and analysis of samples with depth should be conducted to determine if petroleum products were released by the tanks that were removed.

- Aboveground Storage Tanks - An inventory of aboveground storage tanks should be conducted to determine their condition and contents if any. This inventory would enable proper disposal of tanks contents and proper management of the tanks themselves.

- Storm Drain System Evaluation - The storm drain system should be evaluated to determine the condition of catch basins and degree of siltation or clogging. Many catch basins were observed to be blocked with debris or silted in with sand blast grit. Cleaning of the storm drain system may be necessary to remove continuing sources of pollutants and to restore proper flow.

- Building Interior Sampling - Buildings where heavy staining on the concrete floor was observed should be sampled prior to reuse to determine the extent of contamination. This sampling would consist of wipe samples or, if deep staining is present, concrete chip or core samples. The floors should also be visibly inspected for cracks or holes were liquids may have seeped. If buildings are to be occupied by personnel then interior air sampling is recommended. The areas where sampling is recommended are Rooms A, B and C and the hallways in Building 42, the burning room in Building 234, the tool crib in Building 4 and the pipe shop in Building 6.

APPENDIX A

DERECKTOR SHIPYARD HAZARDOUS WASTE GENERATION RECORDS

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

HAZARDOUS WASTE UPDATE JUNE 1,1984-NOVEMBER 1,1984 (5 months)

	MATERIAL	#DRUMS	#GALLONS	COST DISPO $140.00 pe
1. FLAMMABLE LIQUIDS	PAINTS/THINNERS	69	3795	$9,660.
	MISC.(FLAM./WASTEFUEL)	32	1760	$4480.0
2. FLAMMABLE SOLIDS	SOLID PAINT	35	1925	$4900.0
3. COMBUSTIBLE LIQUIDS	WASTE OILS	46	2530	$6440.0
4. SODIUM HYDROXIDE	PIPING SOLUTIONS	13	715	$1820.0
5. HAZARDOUS WASTE LIQUID	UNIDENTIFIED MIXTURES	7	385	$980.00
6. HAZARDOUS WASTE SOLID	SLUDGES/OIL CONTAMINATED MATERIALS	19	1045	$2660.0
7. WASTE AMMONIA SOLUTION	REFRIGERANT LIQUID	2	110	$280.00
	TOTALS	223	12,265	$31,22

ADDITIONAL COSTS- TESTING ANALYSIS- $100.00-$150.00 persa
TRANSPORTATION
MAN HOURS
CONTAINER COSTS
ADDITIONAL COSTS

8. ASBESTOS- 20 CUBIC YDS. $60.00 per cubic yd. $1200.0

PROJECTED COST NOV. 1984- JUNE 1985 BASED ON CURRENT RATE -$50,000.00 +

THESE ABOVE FIGURES DO NOT INCLUDE ANY FINES,DISPOSAL COSTS OR TRANSPORTATION COSTS PR TO JUNE 1, 1984.

JEFFREY P. CRAWFORD
WASTE AREA CONTROLLER

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

November 1984 thru June 1985

MATERIAL (Drums)	# Drums	Gals/Pds	Est Cost Disposal (@ $140/dr.)	Value of Material (@ $15/gal)
Flammable Liquids - (Paints/Thinners)	112	6,160.00 gal	$15,680.00	$92,400.00
Flammable Solids - (Solid/Semi-Solid Paint)	27	13,500 pds	$ 3,780.00	$27,000.00
Combustible Liquids - (Oil/Oily Waste)	67	3685 gals	$ 737.00	
Sodium Hydroxide - (Liquid)	29	1595 gals		
Hazardous Waste Liquid - (Unidentified)	44	2420 gals		
Hazardous Waste Solid	62	31,000 pds		
Waste Acid	4	220 gals		
Corrosive Solid	2	1000 pds		

BULK SHIPMENTS

Oily Waste/Oily Water	34,585 gals	$6,917.00
Flammable Waste - (Contaminated Fuel)	2,024 gals	$ 404.80
Asbestos	241 bags	$4,819.90 ($60.00/cu. yd)

CODDINGTON COVE, MIDDLETOWN, R.I. 02840 (401) 847-9270 TWX: 710-387-6305

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

July 1985 thru December 1985

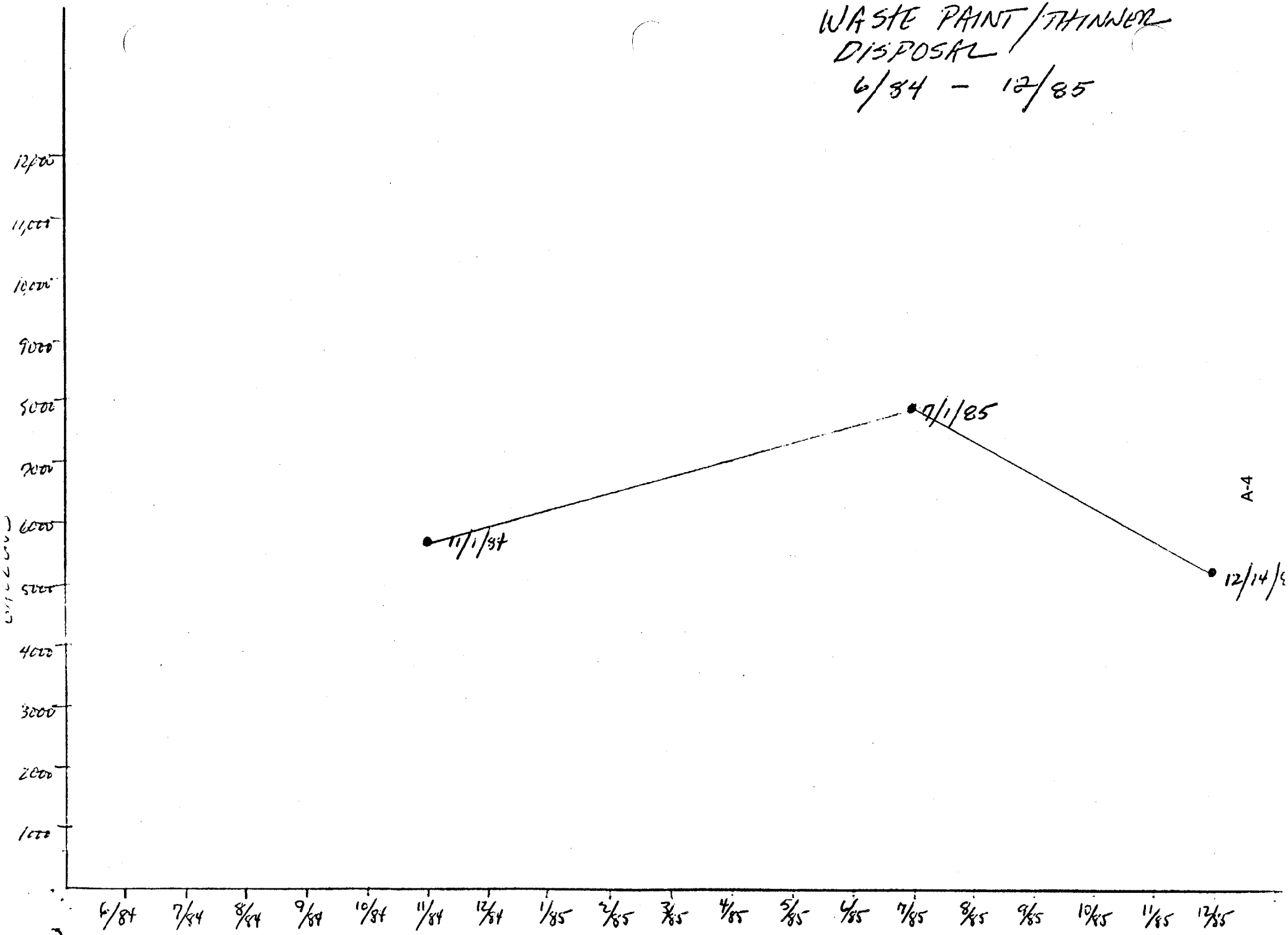
MATERIAL (Drums)	# Drums	Gals/Pds	Est Cost Disposal (@ $140/dr.)	Value of Material (@ $15/gal)
Flammable Liquids - (Paint/Thinners)	56	3,080 gals	$7,840.00	$46,200.00
Flammable Solids - (Solid Semi-Solid)	33	16,500 pds	$4,620.00	$33,000.00
Hazardous Waste Liquid	2	110 gal		
Hazardous Waste Solid	1	500 pds		
Sodium Hydroxide Liquid	6	330 gal		
Sodium Hydroxide Solid	1	500 pds		
Mercury Compound	1 (15 gal)	15 pds		
Methylene Chloride	1	55 gal		
Ethylene Glycol	11	605 gal		
Anhydrous Ammonia	2 (5 gal)	10 gal		
Oily Speedy Dry	8	2400 pds		

BULK SHIPMENTS

Oily Waste/Oily Water	50,000 gal	$10,000.00
Flammable Liquid	2,000 gal	$ 400.00
Asbestos	1 bag	

CODDINGTON COVE, MIDDLETOWN, R.I. 02840 (401) 847-9270 TWX: 710-387-6305

WASTE PAINT/THINNER DISPOSAL
6/84 - 12/85



A-4

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

MONTHLY DISPOSAL

JULY 1985 THRU DECEMBER 1985

JULY 1985

MATERIAL	GALS/# DRUMS	DATE
Waste Oily Water	3500 gals	July 15, 1985
Flammable Liquids	7 drums	July 18, 1985
Flammable Solids	8 drums	July 18, 1985
Mercury Compounds	1 drum	July 18, 1985
Methlene Chloride	1 drum	July 18, 1985

AUGUST 1985

Waste Oily Water	2100 gals 2500 gals	August 1, 1985 August 7, 1985
Flammable Liquids	9 drums	August 27, 1985
Flammable Solids	5 drums	August 27, 1985
Hazardous Waste Liquid	1 drum	August 27, 1985
Ethylene Glycol	11 drums	August 27, 1985
Speedy Dry (Oily)	5 drums	August 27, 1985

SEPTEMBER 1985

Waste Diesel Fuel	2000 gals	September 4, 1985
Oily Water	2800 gals	September 5, 1985
Oily Water	3500 gals	September 13, 1985
Oily Water	2700 gals	September 19, 1985

CODDINGTON COVE, MIDDLETOWN, R.I. 02840 (401) 847-9270 TWX: 710-387-6305

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

OCTOBER 1985

MATERIAL	GALS/# DRUMS	DATE
Waste Oily Water	5000 gals	October 4, 1985
Waste Oily Water	6200 gals	October 8, 1985
Flammable Liquids	11 drums	October 9, 1985
Flammable Solids	6 drums	October 9, 1985
Waste Oily Water	3000 gals	October 18, 1985
Flammable Liquids	8 drums	October 28, 1985
Flammable Solids	6 drums	October 28, 1985
Waste Oily Water	1500 gals	October 29, 1985

NOVEMBER 1985

Flammable Liquids	8 drums	November 5, 1985
Flammable Solids	4 drums	November 5, 1985
Sodium Hydroxide Liquid	4 drums	November 5, 1985
Sodium Hydroxide Solid	1 drum	November 5, 1985
Waste Oily Water	5000 gals	November 6, 1985
Waste Oily Water	2000 gals	November 8, 1985
Waste Oily Water	5000 gals	November 18, 1985
Waste Oily Water	2200 gals	November 19, 1985
Waste Oily Water	2500 gals	November 26, 1985

CODDINGTON COVE, MIDDLETOWN, R.I. 02840 (401) 847-9270 TWX: 710-387-6305

ROBERT E. DERECKTOR OF RHODE ISLAND, INC.

SHIPBUILDER

DECEMBER 1985

MATERIAL	GALS/# DRUMS	DATE
Waste Oily Water	2000 gals	December 10, 1985
Flammable Liquids	13 drums	December 13, 1985
Flammable Solids	4 drums	December 13, 1985
Sodium Hydroxide Liquid	2 drums	December 13, 1985
Hazardous Waste Liquid	1 drum	December 13, 1985
Hazardous Waste Solid	1 drum	December 13, 1985
Waste Anhydrous Ammonia	2 (5 gal)	December 13, 1985
Oily Speedy Dry	3 drums	December 13, 1985

CODDINGTON COVE, MIDDLETOWN, R.I. 02840 (401) 847-9270 TWX 710-387-6305

Do not make entries in shaded areas

OMB #: 2050-0024 Expires: 5-31-88

ENVIRONMENTAL PROTECTION AGENCY

GENERATOR BIENNIAL HAZARDOUS WASTE REPORT FOR 1985

This report is for the calendar year ending December 31, 1985
Read All Instructions Carefully Before Making Any Entries on Form

I. NON-REGULATED STATUS

Complete this section only if you did not generate regulated quantities of hazardous waste at any time during the 1985 calendar year. Circle the one code at right that best describes your status during the entire year (see instructions for explanation of codes).

1 Non-handler
2 Small Quantity Generator
4 Exempt
5 Beneficial Use
9 Out of Business

Please print/type with elite type (12 characters per inch)

This Installation's Non-Regulated Status is Expected to Apply:

☐ For 1985 Only ☐ Permanently

☐ Other_____

C303 ENTRY (OFFICIAL USE ONLY): ☐

II. GENERATOR'S EPA I.D. NUMBER

T/A C

F R I D 0 9 5 9 7 1 7 6 8 1

1 2 13 14 15

III. NAME OF ESTABLISHMENT

R O B E R T E. D E R E C K T O R O F R I, I N C.

30 69

IV. ESTABLISHMENT MAILING ADDRESS

3 C O D D I N G T O N C O V E

15 16 45

Street or P.O. Box

4 M I D D L E T O W N R I 0 2 8 4 0

15 16 41 42 47 51

City or Town State Zip Code

V. LOCATION OF ESTABLISHMENT (if different than section IV above)

5

15 16 45

Street or Route number

6

15 16 41 42 47 51

City or Town State Zip Code

VI. ESTABLISHMENT CONTACT

2 C R A W F O R D J E F F R E Y

15 16 45

Name (last and first)

4 0 1 — 8 4 7 — 9 2 7 0

46 55

Phone No. (area code & no.)

VII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

JEFFREY CRAWFORD - HAZARDOUS MAT'L. CONTROLLER 02-24-86

Print/Type Name Title Signature Date Signed

EPA Form 8700-13A(5-80) (Revised 11-85)

Do not make entries in shaded areas

ENVIRONMENTAL PROTECTION AGENCY

Generator Biennial Hazardous Waste Report for 1985 (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: _____ Rec'd by: _____

VIII. GENERATOR'S EPA I.D. NO.

T/A C

G R I D 0 9 5 9 7 1 7 6 8 1

1 2 13 14 15

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

CLEAN HARBOURS OF BRAINTREE, INC.

X. FACILITY'S EPA I.D. NO.

F M A D 0 5 3 4 5 2 6 3 7

16 28

XI. FACILITY ADDRESS

BOX 385
QUINCY AVENUE
BRAINTREE, MA 02184

XII. TRANSPORTATION SERVICES USED

MACDONALD/WATSON WASTE OIL COMPANY, INC.

RID093214260

XIII. WASTE IDENTIFICATION

Sequence # (29–32)	Line #	A. Description of Waste	B. DOT Hazard code (33–34)	C. EPA Hazardous Waste No. (see instructions) (35–38, 39–42, 43–46, 47–50)	D. Amount of Waste (51–59)	E. Unit of Measure (60)
	1	IGNITABLE SOLVENT AND PAINT MATERIAL	0 8	D 0 0 1	6 5 4 5	G
	2	IGNITABLE SOLID PAINT RELATED MATERIAL	0 9	D 0 0 1	2 6 5 0 0	P
	3	CORROSIVE MATERIAL FROM PIPE TREATING TANKS	0 2	D 0 0 2	1 0 4 5	G
	4	CORROSIVE SOLID MATERIAL FROM PIPE TREATING TANKS	0 2	D 0 0 2	5 0 0	P
	5	WASTE X-RAY DEVELOPER MATERIAL	0 2	D 0 0 2	1 6 5	G
	6	WASTE SOLID ALKALINE MATERIAL	0 2	D 0 0 2	5 0 0	P
	7	WASTE MERCURY COMPOUND SOLID	1 8	D 0 0 9	2 5	P
	8	CLEAN METHYLENE CHLORIDE LIQUID	1 3	F 0 0 1	5 5	G
	9	WASTE X-RAY FIX SOLUTION WASTE OILY MIXTURE	1 5	D 0 1 1 D 0 0 1	1 1 0	G
	10	WASTE ANHYDROUS AMMONIA LIQUID	0 2	D 0 0 2	1 0	G
	11	WASTE CRUDE OIL SLUDGE	1 5	D 0 0 1	2 5 0 0 0	P
	12					

XIV. COMMENTS (enter information by section number—see instructions)

LINE 1 = 7.0 SP. GRAVITY LB/GAL (APPROX.)
LINE 3 = 2.13 SP. GRAVITY G/CM3 (APPROX.)
LINE 5 = 1.29 SP. GRAVITY G/CM3 (APPROX.)
LINE 8 = 1.32 SP. GRAVITY G/CM3 (APPROX.)
LINE 9 = 1.50 SP. GRAVITY G/CM3 (APPROX.)
LINE 10 = .62 SP. GRAVITY G/CM3 (APPROX.)

Do not make entries in shaded areas

ENVIRONMENTAL PROTECTION AGENCY

Generator Biennial Hazardous Waste Report for 1985 (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: _____ Rec'd by: _____

VIII. GENERATOR'S EPA I.D. NO.

T/A C

G R I D 0 9 5 9 7 1 7 6 8 1 1

1 2 13 14 15

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

NARRAGANSETT IMPROVEMENT, INC.

X. FACILITY'S EPA I.D. NO.

F R I D 0 0 6 8 0 7 9 1 1

16 28

XI. FACILITY ADDRESS

223 ALLENS AVENUE
PROVIDENCE, RI 02905

XII. TRANSPORTATION SERVICES USED

MACDONALD/WATSON WASTE OIL COMPANY, INC.

RID093214260

XIII. WASTE IDENTIFICATION

Sequence # (29–32)	Line #	A. Description of Waste	B. DOT Hazard code (33–34)	C. EPA Hazardous Waste No. (see instructions) (35–38, 39–42, 43–46, 47–50)	D. Amount of Waste (51–59)	E. Unit of Measure (60)
	1	WASTE BILGE OILS AND WATER	0 1	D 0 0 1	6 3 8 1 0	G
	2	CONTAMINATED FUEL OIL	0 8	D 0 0 1	2 1 1 0	G
	3	WASTE ETHYLENE GLYCOL/WATER	0 8	D 0 0 1	6 0 5	G
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIV. COMMENTS (enter information by section number—see instructions)

LINE 1 = .82 SP. GRAVITY G/CM3 (APPROX.)
LINE 2 LESS THAN .86 SP. GRAVITY G/CM3 (APPROX.)
LINE 3 = 1.12 SP. GRAVITY G/CM3 (APPROX.)

Do not make entries in shaded areas

ENVIRONMENTAL PROTECTION AGENCY

Generator Biennial Hazardous Waste Report for 1985 (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd: _____ Rec'd by: _____

VIII. GENERATOR'S EPA I.D. NO.

G R I D 0 9 5 9 7 1 7 6 8 T/A C 1

IX. FACILITY NAME (specify facility to which all wastes on this page were shipped)

JET LINE SERVICES, INC.

X. FACILITY'S EPA I.D. NO.

F M A D 0 6 2 1 7 9 8 9 0

XI. FACILITY ADDRESS

441 R CANTON STREET
STOUGHTON, MA

XII. TRANSPORTATION SERVICES USED

JET LINE SERVICES, INC.

MAD062179890

XIII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste	E. Unit of Measure
	1	WASTE #6 OIL AND WATER	01	M001	10000	G
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIV. COMMENTS (enter information by section number—see instructions)

LINE 1 = .966 SP. GRAVITY G/CM3 (APPROX.)

Do not make entries in shaded areas

ENVIRONMENTAL PROTECTION AGENCY

Generator Biennial Hazardous Waste Report for 1985 (cont.)

This report is for the calendar year ending December 31, 1985

Date rec'd:_____ Rec'd by:_____

XV. GENERATOR'S EPA I.D. NO.

														T/A C	
G	R	I	D	0	9	5	9	7	1	7	6	8			1
1	2											13	14		15

XVI. WASTE MINIMIZATION (narrative description)

DURING THE LAST HALF OF THE 1985 YEAR, R. E. DERECKTOR OF RI, INC. SHOWED A SIGNIFICANT DECREASE IN WASTE FLAMMABLE MATERIAL GENERATION DUE TO A BETTER PRODUCTION INCENTIVE OF MATERIALS IN QUALITY CONTROL. AS FOR WASTE OIL AND OILY WATER GENERATION MATERIALS ARE SHIPPED TO NARRAGANSETT IMPROVEMENT, INC. FOR RECLAIMING VALUE.

1/1/86 — 12/14/86

FLAMMABLE LIQUIDS	(PAINTS / SOLVENTS)	98 DRUMS	5,39
FLAMMABLE SOLIDS	(SOLIDIFIED PAINTS)	67 DRUMS	3685 * 33,500 PO
HAZARDOUS WASTE SOLID	(OILSPILL CLEANUP TANK CLEANINGS)	31 DRUMS	15,50
HAZARDOUS WASTE / 19	(XRAY / RADIOGRAPHS)	4 drums	220
Waste ammonia		1 drum	55
waste gasoline		1 drum	55 g
Corrosive liquid		2 drum	110
Corrosive Solid		2 drums	1000
Chromesolve 814 solution	(pipe shop)	BULK	5000 g
Hydrochloric acid solution	(pipe shop)	BULK	1800 g
Waste oil / oily Bilge water	(BULK)		62,760 g

FROM HAZARDOUS WASTE
DISPOSAL RECORDS
BOB CHIPMAN

DERECKTOR

SHIPYARDS

NEW YORK

RHODE ISLAND

FLORIDA

March 21, 1988

File No. JG0388-08126

Mr. Chris John, Engineer
Department of Environmental Management
Division of Air and Hazardous Materials
75 Davis Street - Room 204
Providence, RI 02908

Subject: Generator Biennial Hazardous Waste Report for 1987

Dear Mr. John:

In accordance with the RIDEM letter dated 1 February 1988 and pursuant to Rule 5.05 of the Rhode Island Rules and Regulations for Hazardous Waste Generation, Transportation, Treatment Storage and Disposal, we enclose herewith our Generator Biennial Hazardous Waste Report for 1987 prepared in accordance with 40 CFR 262.41.

If you have any questions, please feel free to contact the undersigned.

Very truly yours,

Karen M. Augeri

Karen Augeri
Paralegal

jg

Enclosure

cc: R. Chipman
M. Donahue

ROBERT E. DERECKTOR OF RHODE ISLAND, INC., CODDINGTON COVE, MIDDLETOWN, RHODE ISLAND 02840
TEL: 401-847-9270 TWX: 710-387-6305 FAX: 401-846-1570

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987

NOTE: This report is for waste generated from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

1. Generator name: Robert E. DERECKTOR OF RI

2. Status: Check the box that describes your operations during 1987:

A. ✓ Large Generator > 1,000 kg/mo.

B. ____ 100 - 1,000 kg/mo.

C. ____ < 100 kg/mo.

D. ____ Did not generate in 1987, but will generate in the future

E. ____ No longer generate waste

F. ____ Out of business since 19____

G. ____ Moved in 19__ to _____ (New Address)

H. ____ Never generated hazardous waste (Mis-notified)

I. ____ Other (explain)

3. This status is expected to apply: (check one)

____ for 1987 only ✓ permanently ____ other _____

4. Generator's EPA I.D. No. R I D 0 9 5 9 7 1 7 6 8

5. Generator's S I C Code 3 7 3 1 _ _ _ _

6. Mailing Address Coddington Cove (Street) Middletown (City) RI (State) 02840 (Zip)

7. Site Location SAME AS ABOVE (Street) (City) (State) (Zip)

8. Site Contact Robert Chipman (Name) Hazardous Material Controller (Title) 847-9270 (Phone)

9. Underground Tanks for Hazardous Waste:

X No ____ Yes Number of Tanks ____ Total Capacity ____ gal.

10. **CERTIFICATION:** I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are substantial penalties for submitting false information, including the possibility of fine and imprisonment.

Robert G. Chipman
Print/Type Name

Hazardous Material Controller
Title

3/15/88
Date

Robert G. Chipman
Signature of Authorized Representative

Page 1 of 8

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID059717768

12. Facility Name: WAYNE DISPOSAL INC

13. Facility EPA I.D. # MID048090623

14. Facility Site Address: 49350 N. Service Dr. → Dearborn MI 48128
Street P.O. BOX 5116 City/Town State Zip

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Oily Clean up Debris consisting of speedy DRI and various oil	15	CRME D018	11000	pd	So	L
2.							
3.							
4.							
5.							

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID059971768

12. Facility Name: Clean Harbors of Braintree

13. Facility EPA I.D. # MAD053452637

14. Facility Site Address: 385 Quincy Ave. (Street) Braintree (City/Town) Mass (State) 02184 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	waste anti freeze flammable from cooling system on ships	08	D001 ____	520	G	L	T
2.	solidified asphalt varnish and oily clean up Debris	15	D001 ____	3500	P	So	L
3.	waste ammonia Corrosive from blueprint machines anhydrous ammonia	02	D002 ____	110	G	L	T
4.	waste oil from cleaning tanks on ships Combustible Used Oil Lube Oil fuel	01	D001 ____	6010	G	L	R
5.	waste mercury from broken thermometer Poison / mercury	18	D009 ____	25	P	So	L

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID095971768

12. Facility Name: Clean Harbors of Braintree

13. Facility EPA I.D. # MAD052452637

14. Facility Site Address: 385 Quincy Ave. (Street) Braintree (City/Town) Mass (State) 02184 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Waste Sodium hydroxide - CORROSIVE USED for DEGREASING Pipes	02	D002	5000	G	L	T
2.	Solidified Paint flammable waste from Painting Paint Solids	09	D001 F003	34,650	P	So	B
3.	Oily clean up drums consisting off Speedy dri and various oils	15	~~CFM~~ F ~~AND~~	8915	P	So	L
4.	waste paint thinner from painting shop. flammable liquid waste paint thinner	08	F003 D001	880	G	L	B
5.	Xylene, Toluene etc.						

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID059717688

12. Facility Name: Narragansett Improvement

13. Facility EPA I.D. # RID006807911

14. Facility Site Address: 223 Allens Ave (Street) Providence (City/Town) RI (State) 02903 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Combustible waste. Oil and water from Bilges of ships Lube Fuel, Hyd. Oil + water	01	D001	20,300	G	L	R
2.	Combustible waste Fuel Oil and water from tanks on ships #2 Fuel Oil and water	01	R010 D001	13,300	G	L	R
3.							
4.							
5.							

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID095971768

12. Facility Name: UNITED OIL RECOVERY

13. Facility EPA I.D. # CTD021816889

14. Facility Site Address: 136 Grove Ave (Street) Meriden (City/Town) Ct. (State) 06450 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Combustible waste oil from Ship Tanks Lube + Hyd. Oil	01	~~CF22~~ 222	10251	G.	L.	R
2.							
3.							
4.							
5.							

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # R I D 0 9 5 9 7 1 7 6 8

12. Facility Name: ENVIRONMENTAL WASTE RESOURCES INC.

13. Facility EPA I.D. # C I D C 7 2 1 3 8 9 6 0

14. Facility Site Address: 130 Freight St. (Street) Waterbury (City/Town) Conn (State) 06725-009 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Combustible waste oil from ship tanks Lube & Hyd. Oil	01	~~CRE2~~ RO	9300	G	L	
2.							
3.							
4.							
5.							

16. Comments (include section and line number):

Rhode Island Department of Environmental Management

Generator Biennial Hazardous Waste Report for 1987, cont'd.

NOTE: This report is for waste managed from January 1, 1987 – December 31, 1987.
Read all instructions carefully before making any entries on form.

Date Received: _____ By: _____

11. Generator's EPA I.D. # RID095971768

12. Facility Name: International DEPOSITORY

13. Facility EPA I.D. # RID991302407

14. Facility Site Address: AUW Blda 884 (Street) N. Kingston (City/Town) RI (State) 02852 (Zip)

_____ waste generated in 1987 but not shipped off-site yet

15. WASTE IDENTIFICATION (See instructions for clarification of each column)

Line No.	A. Description of waste	B. DOT code	C. EPA waste #	D. Amounts	E. Units	F. Physical state	G. Ultimate disposition
1.	Boom + Pads from Oil spill Water and #2 F.O.	01	R005	2950	P	SO	B
2.							
3.							
4.							
5.							

16. Comments (include section and line number):

* * * A RESPONSE IS REQUIRED BY LAW * * *

RHODE ISLAND WASTE MINIMIZATION STATEMENT

Generator Name Robert E. DERECKTOR OF R.I.

EPA ID NO. RID 095971768

Please check the appropriate responses:

1. Does this site have a program for waste minimization including source reduction and/or recycling?

   X Yes ____ No

2. Please check any of the following which apply:

   ___ this company has a written waste minimization program

   ___ a waste minimization audit has been conducted

   X capital expenditures have been devoted to source reduction and/or recycling activities

   ___ an incentive program has been developed for employees to help identify waste minimization efforts

   ___ Other (please specify)

3. Has this site reduced its hazardous waste generation in 1987?

   X Yes ____ No

4. If source reduction has occurred, check any of the following which apply:

   ___ replacement of cyanide electroplating solutions

   ___ replacement of organic-based solvents with water-based ones

   ___ replacement of organic-based solvents with inorganic acids and bases or aqueous cleaners

   ___ improved inventory control of dated materials

   ___ pilot testing scheme changed, drum size samples no longer accepted

___ equipment replacement generating less waste per product output

X administrative: employee education, waste container labelling, waste differentiation and segregation

___ other product substitution (please specify) _____

_____

5. Has your company implemented recycling efforts?

X Yes ___ No

6. If recycling occurs, what methods have been implemented?

	on site	off site
X solvent reclamation	X	
___ metal recovery, filter cake		
___ metal recovery, baghouse		
___ metal recovery, ion exchange		
___ metal salts recovery, crystallization		
X oil recovery, phase separation	X	
___ commodities recycle, waste exchange		
___ commodities recycle, wet scrubber		
___ other (please specify)		

7. Check the 3 most relevant factors that have prevented implementation of source reduction/recycling opportunities

	Source reduction	recycling
insufficient capital to install new equipment		
lack of technical information on source reduction/recycling techniques	X	X
not economically feasible		
concerned that product quality may decline		
if waste minimization is implemented		
technical limitations of production process	X	
permitting burdens		

	Source reduction	recycling
lack of permitted off-site recycling facilities	_____	_____
manifest requirements inhibit shipment off-site for recycling	_____	_____

other (please specify) _____

8. Please include any comments on your company's waste minimization efforts in the space provided below:
We are presently recycling paint thinner & solvents, and are recycling oils, and separating water and oils.

9. Robert C. Chapman Haz Mat Controller March 15, 1988
Signature, title Date

HW/MIN/jlgB

1989

WASte OiL

1000
1600
2000
2200
5500
5500
2300
2300
3000
4475
5100
2000
5100
5000
5000
4800
4600
5500
5000
5000
5300
5000
5000
5254
5000
5000

107,529 Gallons

1988

WASte OiL

6.000
5000
3500
4480
4000
3750
350
1500
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APPENDIX B

HAZARDOUS MATERIAL HANDLING CREW TRAINING GUIDE, 1988-1989

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HAZARDOUS MATERIAL HANDLING CREW TRAINING GUIDE 1988-1989

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ANNEX F - WASTE MANAGEMENT - TO REDRI SAFETY SOP

Purpose: This Annex prescribes the procedures for management of hazardous waste materials generated by REDRI. Detailed plans required by State and Federal Regulations are available at the REDRI Safety Office.

1. Generators will be permitted to accumulate waste products at the work-site for a maximum of four (4) working days.

   a. The waste will be placed in closed containers and placed on pallets. All covers, lids, caps, and bungs must be in place and secure.

   b. Open-top containers are not permitted.

   c. Hazardous-waste labels must be affixed to the container when accumulations start.

   d. Waste labels will be affixed to each container. The material in the container will be written on the label. This is extremely important since the content of a container determines disposal procedure, potential hazard, and disposal cost.

   e. Waste will not be mixed. A separate container will be used for each type of waste generated (i.e., waste paint, waste thinner, waste cutting oil, waste motor oil).

   f. Waste must not accumulate on top of the containers. Waste liquids that "slop" over the top and sides of the container must be removed. Containers in this condition cannot be placed in the Holding Area or shipped.

   g. The Waste Area Controller (currently Jeff Crawford) should be contacted to answer any questions pertaining to packaging, labeling, and accumulation of waste.

2. When the Generator's waste containers are full or four (4) days have elapsed, whichever is sooner, the Generator will contact the Waste Holding Area controller.

   a. Controller will come to the Generator's accumulation area and inspect the containers to insure they are properly prepared for movement to the Holding Area.

   b. Controller will transport all properly prepared containers to the Holding Area. Improperly prepared containers will be rejected and must be repackaged.

c. Generators will not deliver waste to the Holding Area.

d. Generators must complete and sign Part I of the Waste Accumulation Report for each container moved to the Waste Holding Area. These report forms are available from the Holding Area Controller. A sample report is attached. (Enclosure 1)

3. Waste asbestos will be properly bagged and labeled by the Generator. This material will also be picked up by the Holding Area Controller.

The REDRI Safety Office, Fire Marshall, and Holding Area Controller will inspect the premises to insure waste is properly managed. Waste found to be improperly controlled will be considered to be a violation of Company Safety Rules as some waste generated is or could be a fire, health, or pollution hazard to all REDRI employees.

Definitions of terms as applied to this memorandum:

Generator	The supervisor who creates the waste at the work-site.
Waste	Paints, solvents, thinner, oils, chemicals, acids, and blasting residue that possess an actual or potential health or safety hazard to the environment due to their flammability, toxicity, or metal content.
Work Site	The area immediately adjacent to the place where the waste is generated.
Hazardous Waste Label	A label that is affixed to the container indicating its contents and date accumulation began.
Waste Holding Area	The site on the premises where properly prepared hazardous waste is held while awaiting shipment to approved disposal site.

ANNEX F (Cont)

Authorized Generators are:

Paint Dept Supervisor	Paint	New Construction - 234
Paint Dept Foreman	Paint	New Construction - 234
Machine Shop Supervisor	Machine Shop	Building 4
Pipe Shop Supervisor	Pipe Shop	Building 6
Repair Div Manager	Dry Dock	Repair Division
Repair Div Paint Shop	Dry Dock	Repair Division
Mechanic Supervisor	Maintenance	Building 40
Facilities Supervisor	Facilities	Building 40

NOTES

1. Production employees should be aware of the fact that any and all of the substances may be found in use in building 234 (Production).

2. All employees should review the yellow, state issued "Right to Know" book. (During pre-employment orientation)

3. All employees should know where the MSDS (Material Safety Data Sheets) are kept in their general work area. (See attached memo).

4. If the employee needs to use a new product that he/she is not familiar with, they can and should, review the MSDS for the precautions involved in that products' safe use.

5. All employees are expected to use common sense regarding exposure to potentially hazardous compounds. If the supervisor cannot answer questions about any product the employee should contact hazardous material controller, Robert Chipman, ext. 318.

6. Lists by trade are not meant to be comprehensive and are only for introduction and education regarding the types of hazardous materials found in that area or trade within the shipyard.

HAZARDOUS SUBSTANCES FOUND IN MACHINE SHOP - BUILDING 4

Chemical Name	Trade Name
Acetone	Pryoacetic Ether Lockweld Adhesives 100/110
Aliphatics (Lactolspirits)	Lockweld Adhesives
Aluminum	Bonded aluminum abrasive wheels - detailed bonding
Butadiene	
Carbon Dioxide	Airco Bottled Gas
Chromium Carbide	Tungsten Carbide Grades
Chromium Oxide	Tungsten Carbide Grades
Cobalt	Tungsten Carbide Grades
Copper	Techalloy Products
Cumene Hydroperoxide	#10 Gasket Eliminator
Dowanol	Superagitene
Hydrogen Peroxide	Cadox M-50 Red
Iron (Oxide)	Techalloy Products
Lead (Dust Fumes)	QHA 027
Lubricating Oil	Drew Marine Oil
Magnesite	Techalloy Products
Methyl Ethyl Ketone Peroxide	Cadox M-50
Nickel	Techalloy Products
Parrifin	Superagitene Cleaner
Polyglycol Dimeth Acrylates	#510 Gasket Eliminator
Silicon Dioxide	#510 Gasket Eliminator
Trichloroethane	Cleaning Solvent
Trichloroethylene	Cleaning Solvent

HAZARDOUS SUBSTANCES FOUND IN DRY DOCK

Chemical Name	Trade Name
Argon	Bulk Bottled Gas
Aromatic Hydrocarbon	AAA 130 Solvent
Asbestos	Contract Jobs
Benzene	Cleaning Solvent
N-Butanol	AAA 115 Green Epoxy Primer
Butoxyethyl Acetate	PRC #4 Primer
N-Butyl Acetate	Interchloro HB Paint
N-Butyl Alcohol	Interguard AAA 108/109
Cellosolve	Zinc
Cellosolve	Zinc
Cellosolve Acetate	PRC 420
Chlorine	Sodium Hypochlorite
Copper	Silvaloy 15, 45, 50, 45N Galvalume/ Bethalume Cast Bronze High Copper Alloys
Cupros Oxide	Devran 214
Ethanol	NQA 203 Interplate Zinc EXA 478 Zinc Dust
Ethylene Diamine	Interguard Curing Agent
Ethyl Alcohol	GTA 078 Solvent 3M-1711 Scotch Grip
Lead Carbonate	Fish Oil (Mixed)
Lead Oxide	Fish Oil (Mixed)
Lead Silicromate	Universal Primer #745
Lubricating Oil	Drew Marine Oil
Quartz	Mineral Sand/Ferrous Aluminum Silicate
Sodium Chlorite	Tank Cleaner
Zircon	Mineral Sand/Ferrous Aluminum Silicate

HAZARDOUS SUBSTANCES FOUND IN PIPE SHOP - BUILDING 6

Chemical Name	Trade Name
Antimony Oxide	Copper Nickle Pipe
Argon	Bulk/Bottled Gas - Airco
Beryllium	Copper Nickle Pipe
Butyl-Cellosolve	Alumiprep 33
Cellosolve	GTA 415, Brawn, Interplate
Cellosolve Acetate	EXA 471 - 473
Cobalt	Detached Bonding
Copper	Detached Bonding
Cyclohexanone	PVC/Cement Cleaner
Hydrocloric Acid	Muriatic Acid
Iron (Oxide)	Detaclad Bonding
Lead (Dust Fumes)	Detaclad Bonding
Magnesite	Detaclad Bonding
Methyl Alcohol	Detaclad Bonding
Methyl Alcohol	GTA 078, Brawn
Nickel	Detaclad Bonding
Niobium	Copper Nickel Pipe
Phosphate Derivatives	#6 Pipe Cleaner
Phosphoric Acid	Alumiprep #33
Phosphorous	Silvaloy 15, Brawn
Sodium Hydroxide	Pennesolve 814
Zinc (Dust)	NQA 219 Zinc

HAZARDOUS SUBSTANCES FOUND IN INSULATION

Chemical Name	Trade Name
Aluminosilicate Fibers (Vitros)	Fiberfax Coatings
Phenol Formaldehyde Resin	Owens Corning Insulation
Styrene	Owens Corning Gel Coat MR 12 200 Polyester Resin

HAZARDOUS SUBSTANCES FOUND IN ELECTRICAL INSULATION

Chemical Name	Trade Name
Acetoxysilane	RTV 736 Sealant
Antimony Trioxide	Gexol, Famenol-XL Vulkine Electrical Insulation
D1 (2 Ethyl-Hexyl) Phthalate	Hypalon/Famenol Insulation
Ethylene Thiourea	Geoprene/Neoprene Insulation
Lead (Oxide)	Gexol Insulation

APPENDIX C

ENVIRONMENTAL AUDIT REPORT
DERECKTOR SHIPYARD, PREPARED BY AET

cc: chapman

ENVIRONMENTAL AUDIT REPORT
DERECKTOR SHIPYARD
MIDDLETOWN, RHODE ISLAND

PREPARED FOR:

DERECKTOR SHIPYARD
CODDINGTON COVE
MIDDLETOWN, RI

PREPARED BY: DONNA H. PALLISTER
SENIOR ENGINEER

REVIEWED BY: THOMAS J. DOLCE, P.E.
PRINCIPAL ENGINEER

AET

Environmental Audit Report

Derecktor Shipyard
Middletown, Rhode Island

Summary of Findings

This report describes the results of AET's environmental audit inspection of Robert E. Derecktor of Rhode Island, Inc. (Derecktor), Middletown, Rhode Island. Derecktor's operations have been critically evaluated to determine their compliance with Rhode Island DEM and US EPA environmental regulations, and to reveal any operations which may present a risk of environmental harm.

A summary of deficiences noted in the report is provided below.

Hazardous Waste Findings
(Refer to Section 2.00 of Report)

1) Finding - None of the hazardous waste storage and accumulation areas (Building 42, mechanics shop, and main storage area) were provided with adequate secondary containment. The main storage area was provided with a limited amount of secondary containment, but the area was not large enough for the number of drums stored in the area.

   Recommendation - Expand the containment area at the main storage area and provide containment berms for the paint storage area.

2) Finding - Aisle space in the main hazardous waste storage area was not adequate.

   Recommendation - If the containment area is expanded as suggested above, there should be enough room to provide adequate aisle space between rows of drums.

3) Finding - Several tanks in the dry dock area were reported to contain waste oils and waste fuels. This material may be hazardous waste subject to all applicable hazardous waste regulations.

   Recommendation - Determine the contents of all tanks in the dry dock area. Remove any waste from tanks as soon as possible. If tanks are to be

used to store waste, comply with all applicable regulations including requirements for secondary containment for the tanks.

4) Finding - Derecktor's personnel training plan has not been updated to reflect changes in personnel.

Recommendation - Update the personnel training planning to reflect changes in personnel.

5) Finding - Derecktor does not have written documentation that all emergency authorities have agreed to the arrangements specified in the Contingency Plan.

Recommendation - Attempt to obtain written documentation from the local authorities proving that they have agreed to the arrangements specified by the Contingency Plan.

6) Finding - Derecktor did not have training records for individual employees. Training records should include the name and job title for each employee, a written job description and a written description of the type and amount of hazardous waste training required.

Recommendation - Prepare training records for all employees involved with hazardous waste management.

7) Finding - Derecktor last conducted hazardous waste training for employees in June, 1984. Training is required to be updated annually.

Recommendation - Conduct and document training for employees involved in hazardous waste management.

8) Finding - Derecktor filters waste oil generated on-site so that it can be reused, and boils down the contents of pipe shop tanks prior to disposal. These activities may possibly be considered hazardous waste treatment by DEM.

Recommendation - Contact DEM and ask for a written opinion of whether these activities would be considered hazardous waste treatment.

PCB Regulation Findings
(Refer to Section 3.00 of Report)

1) Finding - A transformer in a fenced area near the dry dock was said to probably be owned by Derecktor. The transformer dielectric oil has

apparently not been tested to determine if it contains PCB's.

Recommendation - The transformer dielectric fluid should be sampled and analyzed for PCB concentration. The extent of regulations which apply can then be determined.

2) Finding - Another fenced area near the hazardous waste storage area contained several transformers. These transformers were said to probably belong to the Newport Electric Company. There were no signs identifying the owner of the area.

Recommendation - Exact ownership of these transformers should be determined. If the transformers belong to Derecktor, they should be tested as described above.

Environmental Risk
(Refer to Section 4.00 of Report)

1) Finding - Derecktor off loads bilge oil from ships into 55 gallon drums on the dock. Personnel with radios warn of overflow conditions to prevent spills. Despite the precautions, this operation still presents the potential for spills of oil to the cove.

Recommendation - Extreme care must be exercised during this operation. A possible improvement would be the use of a portable tank truck to collect the bilge oil. This would lessen the chance of an overflow, and reduce the number of containers of waste accumulating on the dock.

2) Finding - Paints and solvents used during the work day and waste paint related materials generated during the day are stored on pallets near the area where touch up painting is being done. Many of these pallets had open paint cans on them, and were located at the edge of the dock where they could easily be spilled into the water.

Recommendation - Some type of small storage building or shelter should be constructed for temporary storage of paints and solvents used during the work day. These structures should be designed to minimize the possibility of paints and solvents being discharged to the cove.

3) Finding - The dock area appeared to be littered with containers of various chemicals which were not essential.

Recommendation - Due to the sensitive nature of the dock area, we suggest that it be cleaned up as much as possible. Any containers of chemicals, paints or solvents that are not absolutely required to be on the dock should be stored in a secure location away from the water's edge.

4) Finding - During the inspection, we were told that the exact disposition of citric acid solutions and rinse water solutions used to flush shipboard piping was unknown.

Recommendation - the exact disposition of these solutions should be determined. These solutions can not be discharged directly to the cove without a permit from DEM. Solutions should be discharged to the public sewer system if testing indicates that they meet all applicable sewer discharge limitations.

5) Finding - The pipe cleaning room contains several large tanks of solutions for cleaning pipes. It appeared that spills from these tanks would escape the room through a six inch diameter hole in the side of the building. Each of the tanks also appeared to have drain pipes which may drain to the public sewer.

Recommendation - The pipe cleaning room should be evaluated to determine if spills or tank ruptures can be contained by the room. The drain pipes on the tanks should be broken and sealed to prevent any discharges of cleaning solution to the public sewer. These materials should never be discharged to the public sewer unless they are tested and found to be in compliance with sewer discharge limitations, which is unlikely.

6) Finding - Derecktor stores large quantities of diesel fuel and gasoline in uncontained above ground storage tanks near the mechanics shop. Petroleum products were also stored near the dry dock, and a tanker truck of "fish oil" material is stored near the pipe shop. Spills from these tanks would probably enter the cove.

Recommendation - These tanks should be provided with secondary containment or other means of containing spills and ruptures. Derecktor should also review the Clean Water Act requirements (40 CFR 112 of the EPA regulations) regarding petroleum product storage.

ENVIRONMENTAL AUDIT REPORT

DERECKTOR SHIPYARD

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ENVIRONMENTAL AUDIT REPORT

Derecktor Shipyard
Middletown, Rhode Island

1.00 INTRODUCTION

Robert E. Derecktor of Rhode Island, Inc. (Derecktor) is a ship building facility located in Middletown, Rhode Island on Coddington Cove. The facility is located directly along Narragansett Bay and is in the business of constructing ships. Current contracts include the production of several coast guard cutters, which are basically steel structured ships. Various operations utilized in the production of ships at Derecktor include cutting and welding of steel, sand blasting, priming and painting, flushing ship board piping with oils and other chemicals, and direct assembly of the ship. Because these operations and activities utilize various chemicals, paints, oils, etc., the firm is subject to complying with various environmental regulations. The purpose of this report is to evaluate Derecktor's compliance status with these regulatory programs once the virgin materials are used and must be disposed of.

On July 31, 1985, AET personnel conducted an environmental audit inspection of your shipyard located on Coddington Cove in Middletown, Rhode Island. The following areas were reviewed during the audit:

1) Hazardous Waste - Compliance with the Rhode Island DEM and US EPA regulations.

2) PCBs - Compliance with EPA's PCB regulations, if applicable.

3) Environmental Risk - Evaluation of facility activities which present unusual or unnecessary risk of environmental damage.

This report is based on the observations made during the audit inspection, information provided by Mr. Jeffrey Crawford, and the results of our office review of correspondence and plans received during and after the inspection. We have arrived at certain conclusions based on information provided. Therefore, please contact us immediately if any of the information presented appears incorrect.

Please note that in the report, we have especially critical of all areas of reviewed regulatory compliance as will be the actual government inspectors if your firm is inspected.

2.00 HAZARDOUS WASTE - FACILITY COMPLIANCE

2.10 HAZARDOUS WASTE DETERMINATION

One of the most important and basic requirements of proper hazardous waste management is identifying which waste generated meets the regulatory definition of a hazardous waste. This section is intended to review whether or not Derecktor has properly determined if wastes generated in its shipyard are hazardous as required by Rules 3.54 through 3.70 and Rule 3.17 of the State of Rhode Island Department of Environmental Management (DEM) Rules and Regulations for Hazardous Waste Generation, Transportation, Treatment, Storage and Disposal, effective July 18, 1984, as amended.

For the most part, Derecktor has properly determined which of its wastes are hazardous. The following industrial waste streams were identified as being generated at Derecktor:

Waste	Hazardous or not?	Approximate Quantity	Disposal
1) Waste Paint and Paint Thinner Solvents	Yes	6 dr/mo	Clean Harbo Braintree,
2) Waste Paint Solids	Probably	2 dr/mo	Clean Harbo Braintree,
3) Acid and Penesolve Tank Solutions from Pipe Shop	Yes	2 dr/mo when tanks emptied and cleaned	Clean Harbo Braintree,
4) Sand Blast Grit	No - based on previous previous testing	?	On-Site
5) Waste Lubricating, Pipe Flushing, and Hydraulic oils	Yes (based on past testing)	About 800 gal/mo including water content	Narraganse Improvemen Company

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Waste	Hazardous or not?	Approximate Quantity	Disposal
6) Waste Motor Oil	Probably	1 dr/mo	Narraga[illegible]t Improve[illegible]nt Company
7) Waste Bilge Oily Water	? 80	1000 gal/mo	Narraganset Improvement Company
8) Waste Citric Acid Pipe Flushing Solution	?	Varies	Neutralize[illegible] sent to Na[illegible] gansett Im[illegible] ment Compa[illegible] because of contents.
9) Waste Sodium Nitrite Pipe Flushing Solution	?	Varies	Unknown
10) Waste Pipe Flushing Rinse Water	?	Varies	Unknown
11) Used Batteries	Probably	Considerable Quantity in Storage	Salvage
12) Waste Ammonia from Blueprint Machine(s)	Probably	1 gal/mo	?
13) X-Ray Developer Solution	Have letter from DEM	Small Quantity	Sewer
14) X-Ray Fixer Solution	Yes	Small Quantity	Clean Har[illegible] Braintree
15) X-Ray Rinse Water	?	Small Quantity	Sewer
16) Waste Solvent from Mechanics Shop	Probably	Small Quantity	Clean Har or Narrag Improveme

Discussion of Above Wastes

1) Waste Paint and Paint Thinners - Since the paints and thinners used at Derecktor are solvent based flammable materials, wastes generated from painting operations can be assumed to be ignitable hazardous wastes. The waste paints may also contain sufficient quantities of EP toxic heavy metals to also render them an EP toxic hazardous waste.

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2) Waste Paint Solids - We are unsure as to whether these types of wastes would, in fact, be a hazardous waste when they must be disposed of. Previous testing of this waste indicates that it is an ignitable solid waste. It is our recommendation that a sampling program be initiated at Derecktor to collect representative samples of this type of waste material. The samples should be analyzed for ignitability and EP toxic heavy metal concentration. Until this testing is completed, it is our recommendation that this material be considered and disposed of as a hazardous waste.

3) Acid and Penesolve Tank Solution from Pipe Shop - Because of the anticipated pH extremes and high corrosivity of these materials, they can safely be assumed to be a corrosive hazardous waste when they can no longer be used. It is our recommendation that all solutions in the pipe shop be carefully tested for pH, corrosivity and EP toxic metal concentrations prior to being disposed of.

4) Sand Blast Grit - Previous testing of this material by Chemical Waste Management revealed that it was not hazardous waste due to heavy metal content. However, it is our recommendation that routine sampling and testing of the waste sand blast grit be conducted for EP toxic heavy metal. This is because the heavy metal content of the used grit would be dependent upon the types of paint that the blasting operation is intended to remove. For example, if a lead base paint is being sand blasted from the hull of a ship, it is likely that the resultant waste grit will contain lead, and may be a hazardous waste upon testing.

5,6 & 7) Waste Oils - Various types of waste oils are generated at Derecktor. Previous testing of these waste oils by Chemical Waste Management revealed that certain of the oils were hazardous because of high EP toxic lead concentrations. Therefore, it is safe to assume that all waste oils generated by Derecktor are hazardous unless specifically tested and proven otherwise. It is our recommendation that certain types of oils generated at Derecktor be isolated for testing to determine whether or not they are hazardous. This would be the only way to know

for certain whether certain pipe flushing oils, lube oils, bilge oils, etc., are in fact hazardous or not.

8,9 & 10) Waste Pipe Flushing Solutions - Various solutions are used at Derecktor to flush ship board piping. These solutions include citric acid and sodium nitrite. We are unsure as to the exact disposal methods for some of these solutions once they have been used. It is our recommendation that these materials be carefully collected after they are used and analyzed to determine whether or not they are a hazardous waste. Following the lab testing, the best disposal method for these types of solutions should be determined.

We were informed that the spent citric acid solution is neutralized and the resultant solution shipped to Narragansett Improvement Company for disposal. This operation should be reviewed to ensure that it would not be considered hazardous waste treatment. It is our opinion that it would not, but this should be confirmed by testing (pH and corrosivity).

11) Waste Batteries - A large quantity of old batteries from motor vehicles have been collected and are being stored in the area of the mechanics shop. The fluid in these batteries is probably a hazardous waste due to corrosivity and lead concentration. These batteries are currently not being managed as a hazardous waste. We were informed that a buyer is being sought for the batteries.

12) Waste Ammonia - This waste is generated in small quantities from blueprinting operations. We were informed that it is being collected, but has not yet been disposed of. This material is probably a corrosive and/or DEM irritating hazardous waste.

13,14 & 15) Spent X-Ray Developing Solutions (Developer, Fixer, Rinsewater) -

<u>Developer</u> - We were informed that Derecktor has received a letter from DEM indicating that this material is not hazardous.

<u>Fixer</u> - Film fixer solutions are generally hazardous because of high silver concentrations.

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Rinse Water - Film rinsewater solutions may or may not be hazardous depending on the application and final silver content. We would recommend testing the rinsewaters to determine whether or not it is hazardous.

16) Waste Solvent From Mechanics Shop - This material is generated from a parts washer in the mechanics shop. It appears to be a combustible solvent blend, probably similar to mineral spirits. Therefore, it should be managed as an ignitable hazardous waste unless tested (flash point) and proven otherwise.

2.20 PLANT STATUS

2.21 DERECKTOR IS A GENERATOR OF HAZARDOUS WASTE

Derecktor Shipyard has been operating as a generator of hazardous waste in the State of Rhode Island. Its EPA ID number is RID 095971768. Previously, Derecktor was inspected and cited by the US EPA as being an over 90-day hazardous waste storage facility. However, it is Derecktor's intent to operate strictly as a generator of hazardous waste, thereby, not storing such wastes for periods of time over 90 days.

The remainder of this report, therefore, is based on the fact that Derecktor is a generator of hazardous waste. We have evaluated your compliance status in relation to the Rhode Island DEM generator requirements found in Rules 5.00 of the Rhode Island DEM Hazardous Waste Rules and Regulations.

2.30 ON-SITE ACCUMULATION AND STORAGE OF HAZARDOUS WASTE

2.31 GENERAL

Hazardous Waste generated by Derecktor is accumulated and stored in 55 gallon metal drums. For generators storing and accumulating hazardous waste in drums, Rhode Island DEM Rule 5.02 requires that the containers be managed in accordance with EPA Regulation 40 CFR 262.34. Part 262.34 refers to Subpart I of Part 265 for

the storage of hazardous waste in drums. The requirements of this section are basically as follows:

The drums must be in

- Good condition
- Compatible with the waste contained therein
- Closed (bungs in) during storage
- Inspected at least weekly for leaks, deterioration, etc.

- Located at least 50 feet off the property line if they contain ignitable or reactive wastes
- Properly marked and labelled

At Derecktor, we noted two primary areas where hazardous wastes are either being accumulated or stored. The first area, which is located within Building 42, is an area where hazardous wastes are being accumulated in 55-gallon drums. We were informed that each day waste paints and solvents are picked up throughout the shipyard in small containers and transported to this building where they are poured into 55-gallon accumulation drums. When these accumulation drums are filled, they are sealed and transported to the main hazardous waste storage area in the north portion of the yard.

2.32 MANAGEMENT OF CONTAINERS

Again, there are two primary areas at Derecktor where hazardous wastes are accumulated and/or stored in 55-gallon drums.

Temporary Accumulation Area

Building 42 contains several 55-gallon drums where hazardous wastes are accumulated. These wastes would include waste paints and waste solvents and solidified paints. We were advised that waste paints and solvents are collected on a daily basis throughout the shipyard and transported to Building 42 where they are placed in these 55-gallon accumulation drums. When these accumulation drums are filled, they are transported to the main hazardous waste storage area, which is a fenced in area located in the north portion of the shipyard. During the date of our audit, we noted 5 accumulation drums in Building 42 all

of which were labelled and marked correctly. We were advised that Building 42 is provided with a fire protection sprinkler system, but that the sprinkler system was not operational at this time. We noted certain warning signs had been posted on the wall inside the building, and no smoking signs also had been posted in the area of the hazardous waste accumulation drums. The accumulation drums were located inside of the building on a concrete floor. However, the area was not bermed or diked to contain a leak or spill of hazardous waste.

One additional location where we noted hazardous waste being stored was the mechanic shop. In this area we noticed a couple of drums located outside the mechanic shop where apparently waste crankcase oil is collected. Also, inside the mechanic shop we noted three open buckets of what appeared to be spent solvent from degreasing operations within the shop. The waste containers in this area were not properly marked or labelled. The requirements of DEM Rule 5.04 specify that the side of all hazardous waste drums be labelled with the following:

- generators name and address
- generic name of the principal hazardous waste components
- waste types, names and numbers
- date of containerization
- the hazardous waste manifest number (when shipped)

In addition to the above, EPA hazardous waste regulations require that the container be marked with the words, "Hazardous Waste". Since this is an EPA requirement, we suggest that this be complied with in addition to the DEM requirements as specified above.

With regard to the degreasing solvent, the storage of such in open buckets is not proper and can result in a citation. We recommend having an accumulation drum available whenever the parts washer is cleaned and the dirty solvent drained.

Main Hazardous Waste Storage Area

The main hazardous waste storage area at Derecktor is a fenced in area located in the north portion of the shipyard. It is here that

full 55-gallon containers of hazardous waste are taken and stored until they are shipped off-site. During the date of our audit, we noted that although a steel secondary containment structure had been provided within the fenced in storage area, many of the drums of hazardous waste were not located within the containment area as of the date of our audit. In addition, we noted several drums of hazardous waste sitting on the pavement outside of the hazardous waste storage area. We also noted that aisle space being provided between the drums of hazardous waste appeared to be inadequate. It is our opinion that, if an inspection had taken place as of the date of our audit, Derecktor would have been cited for additional serious violations regarding the improper storage of containers of hazardous waste.

We did note that a phone had been installed directly outside the hazardous waste storage area, and that a fire extinguisher and proper danger signs were posted in this area, including no smoking signs posted on the entrance gate.

It is our recommendation that the containment area be expanded to ensure that sufficient capacity exists for the storage of all drums of hazardous waste generated. The steel containment structure we observed appeared to be too small to hold the number of drums of hazardous waste observed during the audit inspection. In addition, it is our recommendation that all drums of hazardous waste transported to this main storage area be immediately placed within the fenced area and not left outside, as we noted during the inspection. An alternative to consider would be the location of a tank or tanks in this area to store waste oils. This would eliminate much of the drum handling activities and possibly reduce disposal costs. If tanks are installed, we do recommend that they be contained.

2.33 WASTE STORED IN TANKS

During the date of our audit, we were informed that certain of the tanks on the dry dock may in fact be used for the storage of waste oils and fuels. We were not previously aware of this fact. We viewed certain of these tanks during a tour of the dry dock and noted that

they were located directly on the dock and were not provided with any means of secondary containment to contain the contents of the tank in the event of a leak or rupture.

We want to point out that there are additional hazardous waste rules and regulations pertaining to the storage of hazardous wastes in tanks. If any of these tanks do contain oils or other materials that are hazardous wastes, they must be carefully reviewed to ensure that the regulatory requirements concerning storage of hazardous wastes in tanks are being complied with. The requirements for the storage of hazardous wastes in tanks are those found in Subpart J of 40 CFR Part 265 and include the following basic reqirements:

- The tanks must be compatible with the material stored therein
- The contents of the tanks must be checked routinely (daily) to ensure that the tank is not being overfilled
- The construction materials of the tank must be inspected at least weekly to detect corrosion or leaking fixtures or seams
- The contents of any hazardous wastes stored in tanks must not remain on-site for periods of time exceeding 90 days
- etc.

2.34 90-DAY ACCUMULATION PERIOD

During our July 31st inspection, we noted that the 55-gallon drums of hazardous waste both in the accumulation area in Building 42 and the main storage area were not being held on-site for periods of time exceeding 90 days. However, we do want to point out that if any of the tanks on the dry docks do contain hazardous waste, it is our impression that these materials have been on-site for considerable periods of time. If this is the case, it again would be considered a serious violation of both state and federal hazardous waste rules and regulations. It is our recommendation that this situation be investigated immediately to determine if in fact, any of the materials stored in tanks at the facility are hazardous wastes. If any of these materials are hazardous wastes, they should be immediately shipped off-site to a fully permited disposal facility.

2.35 SELF INSPECTION

The DEM hazardous waste regulations require that areas where containers of hazardous wastes are being stored be inspected at least weekly. We were informed that Derecktor does review such accumulation and storage areas at least weekly with records being maintained of the inspection.

2.36 PRETRANSPORT REQUIREMENTS

Although we did not observe a shipment of hazardous waste ready for off-site transport, we want to point out that there are four specific pretransport requirements that must be complied with. These include proper DOT drum labelling, marking, selection of packaging, and placarding of the transport vehicle. Please refer to the DOT regulations found in 49 CFR Part 172 and 173 for compliance with these important pretransport requirements.

2.40 REQUIRED WRITTEN HAZARDOUS WASTE DOCUMENTS

2.41 WRITTEN PLANS

Generators of hazardous waste must develop and maintain a written personnel training plan which describes how and when plant personnel will be trained, and a written contingency plan which describes how Derecktor will respond to emergencies regarding hazardous waste.

A. Personnel Training Plan

Derecktor has a written training plan which was prepared by this firm. We do want to point out, however, that the training plan should be updated to incorporate the names and positions of new personnel assigned within the shipyard. This does not appear to have been done for the training plan Derecktor currently has at its facility.

B. Contingency Plan

Derecktor has prepared a written hazardous waste contingency plan as required by DEM regulations. The plan was available for review during the audit inspection, and copies of the plan had been forwarded to

various local authorities as required by regulation. We were informed that Derecktor has an agreement with the Town of Middletown for fire and rescue response. Derecktor personnel could not provide us with copies of any responses that arrangements with the local authorities had been agreed to, however, we were informed that copies of the contingency plan had been sent out to all local authorities as required. It is our recommendation that some attempt be made to obtain written documentation from the local authorities as required by regulation. If they refuse to provide such written documentation, it is our recommendation that this refusal be documented in the operating records.

2.50 EMERGENCY EQUIPMENT

Generators of hazardous waste are required to maintain certain emergency equipment for use in the event of a release of hazardous waste. These include:

- Internal communications equipment
- Telephone, call boxes, etc.
- Fire extinguishers, etc.
- Spill clean up equipment
- Personnel protection equipment
- Etc.

Derecktor generally has adequate emergency equipment. The main storage area was provided with a phone, a fire estinguisher, warning signs and spill clean up equipment. The accumulation area in Building 42 was provided with no smoking signs, but apparently is not provided with some means of fire protection, except for a portable fire extinguisher.

2.60 PERSONNEL TRAINING

Generators of hazardous waste are required to provide training of all personnel involved in any way with the handling and/or management of hazardous waste. This training must be updated annually. Training records on each employee must be maintained. Derecktor last conducted a formal hazardous waste training session for its employees in June, 1984. During the date of the audit,

training records on each employee involved in hazardous waste management were not available for review.

It is our recommendation that hazardous waste training of all personnel involved in the management of hazardous waste be properly trained and that this training be fully documented by means of personnel records. The training records for each person should be available if they are requested during an actual inspection, and should contain the name and job title of each employee involved in hazardous waste management. The training records should also include a written job description and a written description of the type and amount of hazardous waste training required. The training records obviously should also include the dates when actual on the job training or classroom type training was provided to each employee.

2.70 MANIFESTING REQUIREMENTS

All shipments of hazardous waste off-site must be accompanied by a uniform manifest form. Derecktor has been manifesting its hazardous waste off-site. Several of Derecktor's manifests were reviewed for proper completion. The results of this review are listed below:

1) Manifest MAB049909 Item 1

   This manifest was filled out correctly for a shipment of waste flammable liquid, with the exception that the words "Flammable Liquid" should have been used to designate the DOT hazardous class instead of just the word "Flammable". If this material were paint wastes or associated materials, the correct shipping name should have been "Waste Paint Related Material" instead of the name used.

2) Manifest MAB049909 Item 2

   This entry on the manifest involved a shipment of what appeared to be paint solids. The DOT shipping name used was "Waste Flammable Solid NOS". However, on the manifest form, the word "Flammable" was used to indicate the DOT hazardous class. The correct DOT hazardous class associated with this particular shipping name should be "Flammable Solid".

The remaining two entries on this particular manifest appeared to be correct. Regarding this particular manifest, we noted that copy 8 had been retained by Derecktor as their copy of the manifest form and copy 3 had been received back from the disposal facility and was stapled to copy 8. This is a good procedure to adhere to in keeping track of manifest forms. We do want to point out a couple of minor errors regarding this manifest form in that in item B of the form, Derecktor had placed their EPA ID number. This does not belong in this block. Please refer to the instructions on the reverse side of the manifest form in completing this block. Also, in the manifest document number block were the digits "0002". The manifest document number is required to be a five digit number. This is a minor discrepency, but should be corrected in completing future manifest forms.

3) Manifest RIA0001445

This particular manifest involved the shipment of waste oils to Narragansett Improvement Company in Providence, Rhode Island. The entries on the form appear to be correct with the exception that again the manifest number was not a five digit number and Derecktor's EPA ID number again was entered in item B on the form. Again, these are minor dicrepencies, but should be corrected completing future manifests.

With the minor exceptions noted, the manifests that were reviewed were properly completed. Always use 49 CFR Part 172 (DOT Shipping Regulations) to complete the manifest shipping entries.

2.80 DISPOSAL OF HAZARDOUS WASTE

During the audit, we were informed that Derecktor ships its hazardous waste either to SCA in Braintree, Massachusetts (currently Clean Harbors) or to Narragansett Improvement Company in Providence, Rhode Island. Narragansett Improvement Company is authorized to accept various waste oils and flammable solvents, while SCA in Braintree is a wide ranging hazardous waste storage facility which can accept many different types of hazardous wastes in 55-gallon drums.

We have made no attempt to review the permit status or regulatory status of either of the above two facilities used by Derecktor as part of this audit report. However, we do recommend highly that Derecktor routinely contact state and federal agencies to obtain updates on the permit and regulatory compliance status of any disposal facilities that it is shipping wastes to. We further recommend that Derecktor personnel routinely visit each of the facilities that it is shipping wastes to and conduct their own review of each facility to ensure that they are satisfied that their wastes are being properly managed and disposed of.

2.90 RECORDS AND REPORTS

2.91 RECORD KEEPING

Generators are required to maintain the following records:

1) A copy of each manifest (both the generator's copy and generator's completed copy returned from the facility).

2) A copy of each biennial report and any exception report generated.

3) Records of any test results, waste analyses, etc.

4) The records of training in accordance with the Training Plan.

5) Copies of agreements made with local authorities in accordance with the Contingency Plan.

6) Copies of any Hazardous Waste Notification of Activity Forms and EPA ID numbers.

Derecktor appears to be maintaining the above records except for items 2, 4 and 5. Item 2 above requiring a biennial report must first be submitted by March 1 of 1986 for the calendar year 1985. Therefore, this particular requirement is not in effect yet for Rhode Island industries.

2.100 ON-SITE TREATMENT

The only type of on-site treatment of waste that we noted being conducted at Derecktor was the filtration of oil. We were informed that the filter system in the pipe shop allows Derecktor to reuse some of the lube oils. The filter appeared to be a simple cartridge type apparatus. We do want to point out that filter cartridges used in this filtration operation should be considered as a hazardous waste or tested to prove otherwise.

With regard to this operation, we suggest that DEM be contacted (in writing) to establish whether or not the filtration procedure would be considered hazardous waste treatment.

3.00 PCB REGULATION COMPLIANCE

During the audit inspection, we were shown two areas in the yard that held electrical transformers. The first area was the dry dock where a fenced in area contained a fairly large transformer. We were informed that the transformer contained within the fence may be owned by Derecktor Shipyard. The transformer appeared to be quite old and possibly contained a considerable amount of dielectric oil. It was pad mounted and we could observe a small amount of leakage of dielectric oil around the top of the transformer and also on the drain valve on the bottom of the transformer. However, the transformer appeared to be fairly clean. It is our recommendation that if this transformer is owned by Derecktor Shipyard, that it be sampled and tested for PCBs to determine the PCB concentration. The PCB concentration will determine the extent of regulation it is subject to.

Another fenced in area located in the north yard area appeared to be a substation containing transformers possibly owned by Newport Electric Company. However, we could observe no signs on the fencing indicating the ownership of the substation. We did not observe any evidence of dielectric oil leaks from the transformers contained in this fenced area. We do recommend that ownership of these transformers be evaluated to determine whether they are owned by the local power company or by Derecktor Shipyard. If they are owned by Derecktor Shipyard, again we recommend sampling and having the dielectric fluid analyzed for PCB concentration.

We also noted three small out-of-service transformers being held within the fenced in area where the

hazardous waste container storage area used to be located. We were advised that these transformers had been taken out of service and had been tested and found to contain no PCBs. We were informed that Derecktor was trying to sell these transformers. It is our recommendation that full documentation be maintained on the dielectric testing for PCBs of these transformers. Cross references of each transformer's serial number should be placed on each lab certificate, and a non-PCB label should be placed on the side of each tested transformer.

4.00 ENVIRONMENTAL RISK

During the audit inspection, we noted several items and operations at the shipyard that we felt had potential to result in significant environmental damage should an accident occur. These items and our recommendations are reviewed in this section of the audit report.

4.10 OFF LOADING OILS AND OTHER MATERIALS FROM SHIPS

During the audit, we noted that bilge oils and pipeline flushing oils were off loaded from the ships directly into 55-gallon drums sitting on the dock very close to the cove. This, in our opinion, has real potential for creating a significant discharge of oil to the cove. We were advised that whenever pumping is being conducted, there is an employee on the dock by the drums with a radio, so that he can inform personnel on the ship of any overflow to ensure that no spill occurs. This appeared to us to be a good procedure. However, the potential still remains for an accident to occur which could release oil to the cove. We would advise extreme caution in carrying out these types of operations to ensure to the maximum degree possible, that no discharges of oils reach the cove. It would seem to us that some sort of portable tank truck could be located along side the ships for waste oil off loading operations. This would provide a more secure method of collecting waste oils from the ships.

4.20 STORAGE OF PAINTS AND RELATED MATERIALS ALONG THE DOCKS

During the audit, we noted that pallets of paint cans, empty buckets and partially filled buckets were located at various points along the dock. We

were informed that these materials are used during the day for touch up painting operations on the ships. We noted some of the paint cans were left open, and some cans may contain solvents. The location of these pallets of paint was directly at the edge of the dock along the cove. It is our feeling that this is a dangerous operation where the slightest accident could result in the cans of paint being tipped over and spilled into the cove. This would result in a situation where the state and coast guard would have to be notified of a discharge to a water body.

It is our recommendation that small storage type buildings or other secure structures be constructed along the docks for the temporary storage of these types of paints in small containers. The storage in a secure type of small shed or building would minimize the possibility of an accident occurring resulting in the discharge of paints or solvents to the cove.

We would also recommend that the entire area of the dock be cleaned up as much as possible, and any containers of chemicals, paints and solvents that are not absolutely required to be on the dock, be removed to a secure storage area away from the water's edge.

4.30 SHIPBOARD PIPE FLUSHING

One of the operations that we were advised takes place on the ships is the flushing of piping systems. We were informed that various solutions are used to flush the piping systems such as citric acid solutions, clean rinse water solutions, and other solutions containing chemical additives. In addition, following the flushing operations, we were informed that the lines are flushed with the hot oil solution for some period of time.

We were told that all oils that are flushed through the lines are collected in 55-gallon drums for disposal. However, when we inquired as to the disposal of the citric acid solutions and the rinse water solutions, we were informed that the exact disposition of these materials is unknown. It is our recommendation that the exact disposition of all flushing solutions be

determined and characterized for proper disposal. Solutions must not be discharged directly to the cove without a discharge permit having been issued by the State DEM (unlikely such a permit would be approved). It is our recommendation that all such flushing solutions be collected, tested and discharged to the public sewer system if they comply with sewer discharge limitations. If sewer discharge limitations cannot be complied with, these solutions should either be treated and then discharged to the sewer or shipped off-site for proper disposal.

4.40 PIPE CLEANING ROOM

The pipe cleaning room contains several large dip tanks where solutions of acids and other cleaning agents are maintained. Piping is dipped into these solutions for cleaning purposes. The solutions take dirt, grease and scale off the piping so that they can be prepared for installation into the ships. We were informed that whenever any of these solutions have to be disposed of, the solutions are boiled down to reduce their volume and then drummed and shipped off-site for disposal. This volume reduction operation may be considered as a hazardous waste treatment by DEM.

The floor of the room that the pipe cleaning tanks are located in is comprised of concrete. However, we noted that there is an opening (hole) on the side of the building about 6 inches in diameter which could result in discharges of any spilled tankage materials to the outside environment. It is our recommendation that this hole be sealed as soon as possible.

We do want to point out that while walking through this pipe cleaning area, we noted what appeared to be fairly strong acid vapors in the vicinity of the muriatic acid tank. We noted that there was a vent system located over this tank. We recommend that the vent system be checked for adequacy to avoid employees being exposed to acid vapors or other contaminants in the work place air.

We also noted drainage piping from each of the tanks in the pipe cleaning room. The question that comes to mind is, if a valve is turned accidentally, where do these pipe drains lead. It is our recommendation that the contents these tanks not be discharged to the public sewer or to the ground beneath the building, or to any other

location since they all seem to be fairly concentrated solution tanks. Even the rinse water tanks should not be discharged to the public sewer or to the ground surface unless the contents have been evaluated and have been confirmed to be proper to discharge.

It is, therefore, our recommendation that all piping leaving these tanks be broken and sealed to preclude the possibility of an accidental discharge of the contents of any of these tanks. Again, the room containing these tanks should be thoroughly evaluated for its ability to contain the contents of any one of these tanks should a rupture occur within the room. Because of the environmental sensitivity of Derecktor's location being directly along the cove, we would advise taking all precautionary steps to preclude the possibility of a rupture or leakage of any tanks of chemicals from leaving the room or building.

4.50 ABOVE GROUND DIESEL FUEL STORAGE TANK

We noted, during the audit, that behind the mechanic's shop was located a 22,000 gallon above ground diesel fuel storage tank. The tank appeared to be resting on the ground surface and a considerable amount of leakage or spillage of fuel was noted about the piping at the base of the tank. We noted absolutely no secondary containment provided about this large storage tank. In the event of a rupture or a piping leak, in our opinion, the amount discharged would travel directly over the paved shipyard area and be deposited directly into the cove constituting a significant environmental problem. Also noted outside the mechanic shop were three 250-gallon fuel oil and gasoline storage tanks. Again, no containment is provided around these storage tanks, and any discharges or leaks would travel a short distance over the paved yard area directly to the cove.

It is our recommendation and also a requirement of the Clean Water Act (40 CFR Part 112.7(c) of EPA regulations) that above ground tanks such as this be provided with secondary containment or other measures that would preclude the possibility of a rupture or discharge from leaving the immediate vicinity of the tank.

Similarly, along the dry docks, several tanks were noted directly on the dock that we were advised contained either diesel fuel, or waste fuels, or

waste oils or waste bilge oils. Also, between the pipe shop and the receiving building, we observed a large (approximately 6000 gallon) tanker truck of "fish oil" material used as a rust preventative on ships. Again, these tanks were provided with no means of secondary containment, and could create a sizable environmental problem should a rupture or discharge occur. It is our recommendation that all tanks containing petroleum products be provided with sound secondary containment structures, or be removed from the dock area wherever possible. Even if relocated from the dock areas to more inland areas, such tanks should still be provided with secondary containment structures.

5.00 CONCLUSION - MANAGEMENT OF THE INSPECTION

We have the following comments on your handling of the inspection (assuming it was an actual enforcement inspection):

a) Your attitude was generally good; you were friendly and agreeable, but did not volunteer excess information.

b) When you are officially inspected, you should always:

- Request a pre-inspection meeting. Find out exactly who the officials are and what they want to see and inspect.

- Have at least two (2) people from your firm accompany the inspectors. Jot down notes on everything that is said.

- Do not allow the inspectors to wander through your plant or files. Keep their view narrowed to exactly what they have to see.

- Volunteer no information. Let them ask all the questions.

- Request a post-inspection meeting. Request a listing of any and all violations noted. Ask them to send you a copy of their trip report.

- Above all, maintain the inspection under your control. The inspectors are visitors in your plant. You have the right to ask them to come back when your firm's attorney or

environmental engineer is present to accompany them.

- Have all required records available for inspection.

Please contact us if you have any questions or comments regarding this report.

APPENDIX D

CANDIDATE ENVIRONMENTAL IMPACT STATEMENT FOR THE OUTLEASING OF APPROXIMATELY 44 ACRES OF LAND AND FACILITIES THEREON AT THE U.S. NAVAL BASE, NEWPORT, RI

CANDIDATE ENVIRONMENTAL IMPACT STATEMENT

FOR THE OUTLEASING OF APPROXIMATELY 44 ACRES OF LAND

AND FACILITIES THEREON AT THE U. S. NAVAL BASE, NEWPORT, RI.

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APPENDICES

A. Proposed Long-Term Lease

B. Robert E. Derecktor, Inc. - Proposal for Development of a Shipyard

C. Proposed Navy Site Improvement Projects

D. Addendum I Dated 24 April 1978

CANDIDATE ENVIRONMENTAL IMPACT STATEMENT
FOR THE OUTLEASING OF APPROXIMATELY 44 ACRES OF LAND
AND FACILITIES THEREON AT THE U. S. NAVAL BASE, NEWPORT, RI.

1. INTRODUCTION *

GENERAL. THE U. S. Naval complex, Newport Naval Education Training Center (NETC) is located in Newport County, Rhode Island (Figure 1). The complex presently consists of seven principle non-contiguous areas totaling approximately 865 acres described as hospital area, Coasters Harbor Island, Coddington Point-Coddington Cove area, Midway Family Housing area, Melville South (Tank Farm No. 3), Melville North (Tank Farms No. 1 and 2 and Family Housing), Melville North (DSA Refueling Area).

HISTORY. The Navy has been a landholder in the Newport area since 1869 when an experimental torpedo station was established on Goat Island. During the Second World War the operation was expanded to Gould Island with some 13,000 employees who manufactured 80% of the Navy's torpedoes. Weapons testing and development activities are still performed at Newport under the auspices of the Naval Underwater Systems Center.

Naval educational activities in the area began in 1883 when the Newport Asylum became the Naval War College. The original structure on Coasters Harbor Island is still in use today for continuing education and administration at the War College. The Naval War College itself moved into Lewes Hall in 1894 and during the First and Second World Wars, Coasters Harbor Island and Coddington Point were totally used as training areas. Connelly Hall, the present headquarters of the War College, was built in 1973.

By 1900, the Newport Navy Base included a fleet calling station with facilities at Melville, and until 1973 the Newport complex was headquarters for the Cruiser Destroyer Force, Atlantic Fleet.

On April 17, 1973, the Secretary of Defense announced that certain components of the Navy, located at the Newport Naval Base would be disestablished pursuant to the Shore Establishment Realignment (SER) program; that the scope of functions of other components at the Naval Base would be reduced; and that a number of Navy ships would be relocated to other homeports.

Of the SER actions that ensued, some 5,900 Navy civilian positions were lost throughout the State of Rhode Island and some 17,000 military personnel and their dependents were transferred out of the State (U.S. District Court; District of Rhode Island C.A. No. 70015, 14 March 1977). The realignment at Newport alone caused the loss of approximately 785 Navy civilian jobs and some undetermined number of secondary jobs related to service and support of the dislocated population. There were approximately 11,000 military personnel and their families transferred to other installations far removed from the

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* Source: U.S. Department of the Navy, Northern Division, Naval Facilities Engineering Command, Phila., Pa., Facilities Utilization Study for U.S. Naval Complex, Newport, RI, January 1976.

2. PROJECT DESCRIPTION

BACKGROUND. In June of 1974 the Department of Defense (DOD) reported to Government Services Administration (GSA), as excess to the needs of DOD, portions of the Newport Naval Base comprising parts of the former Naval Supply Center, Public Works Center and Naval Station. The total excess acreage in the Newport area is approximately 1,535 acres and includes 974 acres not contiguous to the Newport Base (600 acres on Prudence Island, 25 acres on Gould Island, 77 acres at Fort Adams, 7 acres at Fort Wetherill, 107 acres at Sachuest point and 158 acres at Beavertail Point). Of the 561 acres on the base, the Navy proposes to lease approximately 50.24 acres of land in the Coddington Cove area to Rhode Island Port Authority, and Economic Development Corporation (RIPA). The lease is proposed to be entered into pursuant to the provisions of 10 U.S.C. 2667 as amended by, P.L. 94-107 of October 1975 and the Federal Property Administrative Services Act (FPAS) and regulations thereunder. The RIPA proposes to sublease the property to Robert E. Derecktor, Inc. for the stated purpose of establishing a shipyard, with the goal of creating employment opportunities to replace some of the jobs lost as a result of Navy SER actions.

In January 1977, the Conservation Law Foundation and others brought suit against General Services Administration (GSA) and the Department of Defense in the Federal District Court of Rhode Island, seeking to enjoin disposal, as well as interim use, of all excess Navy properties on both sides of Narragansett Bay, including excess properties in the Newport and Quonset-Davisville complexes, pending the issuance of a comprehensive Environmental Impact Statement (EIS) covering both disposal and interim use. The Court determined that in accordance with GSA's agreement, GSA would prepare a comprehensive EIS to cover disposal of most of the properties on both sides of Narragansett Bay.

On 2 September 1977, the Navy submitted a request to the Office of Secretary of Defense to withdraw 50.24 acres of land, in the area of Coddington Cove, from excess. The request was based on a re-evaluation of future Navy mission requirements.

?

On 27 September 1977, the Office of Secretary of Defense granted permission to withdraw the 44 acres of land from excess.

The GSA EIS was originally to have included the 50.24 acre parcel, notwithstanding, the exclusion of the Coddington Cove area from the coverage of the Court opinion by stipulation of the parties. However, because of the withdrawal of the parcel from excess status, this CEIS will address the effects of, and alternatives to, the proposed outlease while the GSA statement will deal with how such an outlease will fit into the overall development of industrial areas on both sides of Narragansett Bay.

PROPOSED ACTION. Of the 50.24 acres withdrawn from excess, this CEIS addresses a proposed action by the Navy, to lease approximately 44 of the 50.24 acres of land to the Rhode Island Port Authority and Economic Development Corporation, State of Rhode Island (Figure 2). A copy of the proposed lease is included as Appendix A.

PROPOSED LEASE - CODDINGTON COVE
44 ACRES

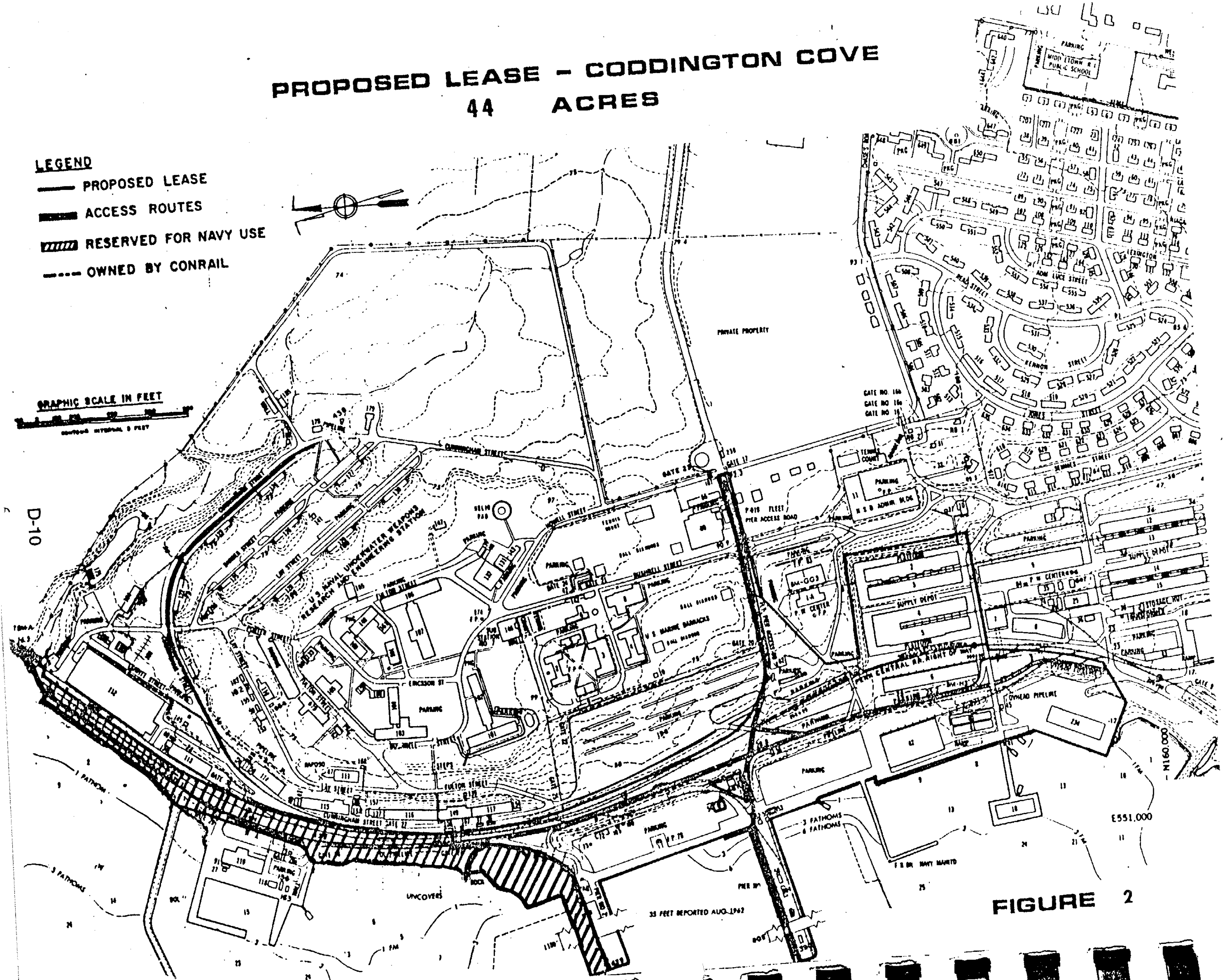

FIGURE 2

3. EXISTING ENVIRONMENT OF THE PROPOSED SITE*

GEOGRAPHIC LOCATION. The site proposed for outleasing is located at the U. S. Naval Complex, Newport, Naval Education Training Center, (NETC) Newport County, Rhode Island, on the east shore of the eastern passage of Naragansett Bay. The installation lies adjacent to the City of Newport (population 34,562) as well as the towns of Portsmouth (population 12,521) and Middletown (population 29,290) all of which comprise the land mass known as Aquidneck Island. The proposed site is located within the Naval complex adjacent to and bordering Coddington Cove (Figures 1 and 2).

GEOLOGY. Narragansett Basin is an ancient north/south trending structural basin with a major axis of approximately 50 miles and a maximum width of approximately 30 miles. The basin which extends about 10 miles into Rhode Island Sound is a topographic depression consisting of Pennsylvanian Sedimentary Facies which is underlain and surrounded by pre-Pennsylvanian, igneous and metamorphic rocks. Overlying the Pennsylvanian sediments are glacial deposits which are the parent materials for the area soils and greatly influence the geomorphology of the area (Figure 3).

The Strata of Narragansett Bay are appoximately 12,000 ft. in thickness and consists of carboniferous (Pennsylvanian) series which have been deformed into a series of folds. The greater part of the basin consists of the Rhode Island formation which is a series of shalley and slatey coal-bearing beds separated by sandstones and conglomerates.

The undulating terrain rises from the shore of Naragansett Bay to an elevation 95 ft. above mean sea level in the Coddington Cove area. The surface soil is glacial till underlain by shell materials at widely varying depths, with frequent rock outcroppings.

The harbor approaches have depths of 40 to 50 feet with approximately 35 foot depths in the berthing areas of Piers 1 and 2.

SEISMOLOGY. The New England region has historically been affected by earthquakes originating in the St. Lawrence Valley and the Laurentian Trough. Major earthquakes "felt" in the vicinity of the site were recorded in 1663, 1925 and 1955. The closest recorded events occurred in Naragansett Bay on February 2, 1967 and December 7, 1965. Each of these events were moderate in intensity (5 on the modified Morcali scale) and resulted in no structural damage. The site is located within seismic zone 2 indicating a moderate probability of future seismic activity (Figure 4).

CLIMATIC CONDITIONS. The Naval complex is situated in a region noted for its mild and healthful climate. The climate in the Newport area is characterized by cold winters and mild summers.

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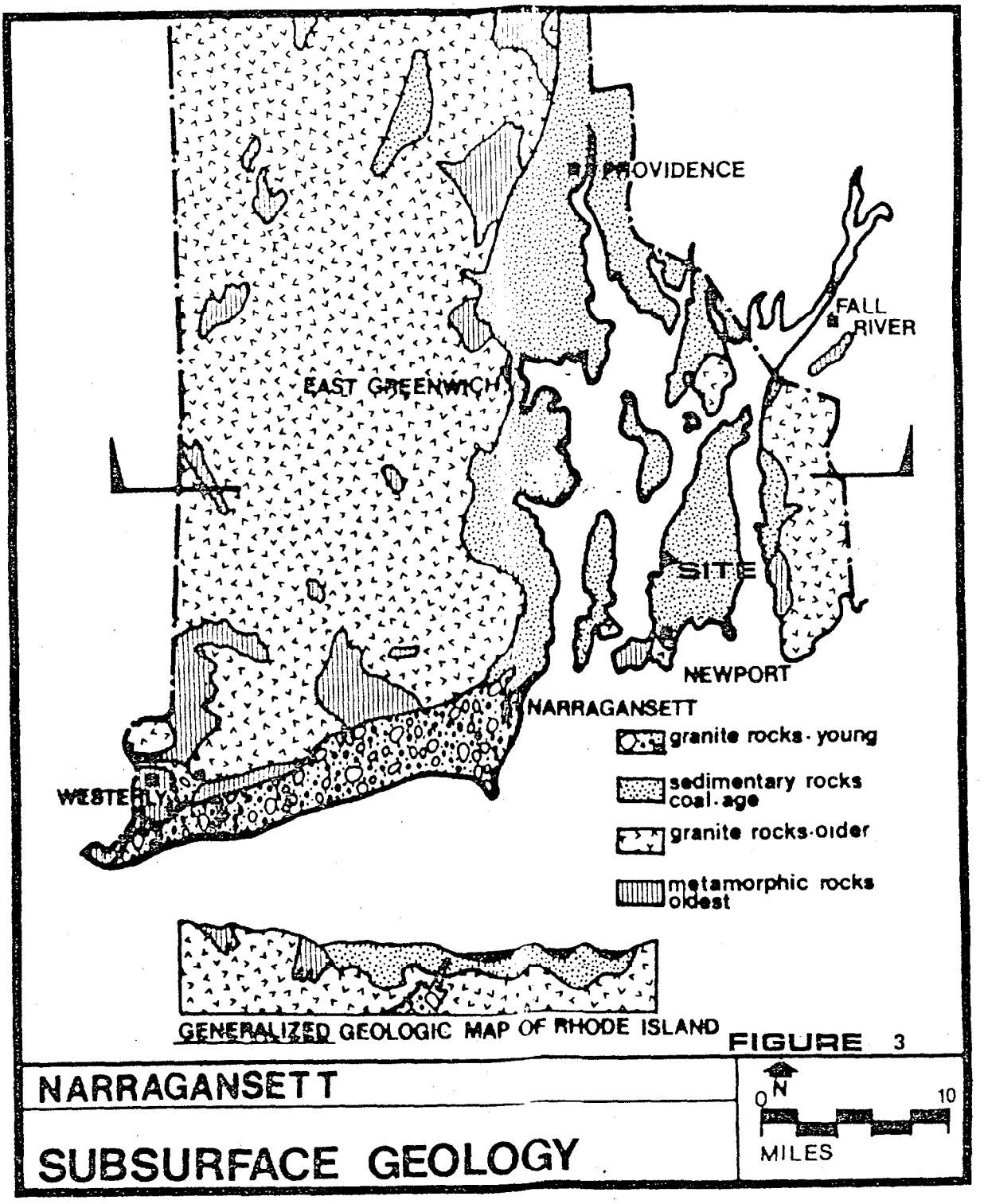
* Source: U. S. Department of the Navy, Draft Environmental Impact Statement for Preferred Alternative Location for a Fleet Ballistic Missile (FBM) Submarine Support Base, Kings Bay, Ga., 1977.


PROVIDENCE
FALL RIVER
EAST GREENWICH
SITE
NEWPORT
NARRAGANSETT
WESTERLY
granite rocks - young
sedimentary rocks coal-age
granite rocks-older
metamorphic rocks oldest
GENERALIZED GEOLOGIC MAP OF RHODE ISLAND
FIGURE 3
NARRAGANSETT
SUBSURFACE GEOLOGY
N
0
10
MILES

Sediments. Sediment deposition presently occurs along the west passage and particularly off Warwick Point and Mint Bay of the west passage. Shallow depths and sand beaches, which indicate that shelling may take place, occur along the coast of the west passage. Depths as shallow as 15 feet are encountered approximately 1 mile off shore. In the east passage, channel depths in excess of 80 ft. exist from Gould Island seaward. Classification of these sediments are sandy silt to gravel silt-clay for the lower bay; silty-sand to sandy silt-clay for the mid bay; and sand to silty-sand for the upper bay. General sediment and sand distribution have also been detailed for parts of the bay and adjacent coast lines.

Sediments of Narragansett Bay are predominantly sand, gravel and silt. Sediment composition is greater than 75% sand in Rhode Island Sound and at the mouth of the Bay (Figure 8). Similiarly, surface sediments dredged from the Providence River mouth from 1968 to 1970 showed a 12% organic content. Sediments in several areas of Narragansett Bay and Rhode Island Sound are contaminated with toxic pollutants including hydrocarbons, heavy metals and sludge.

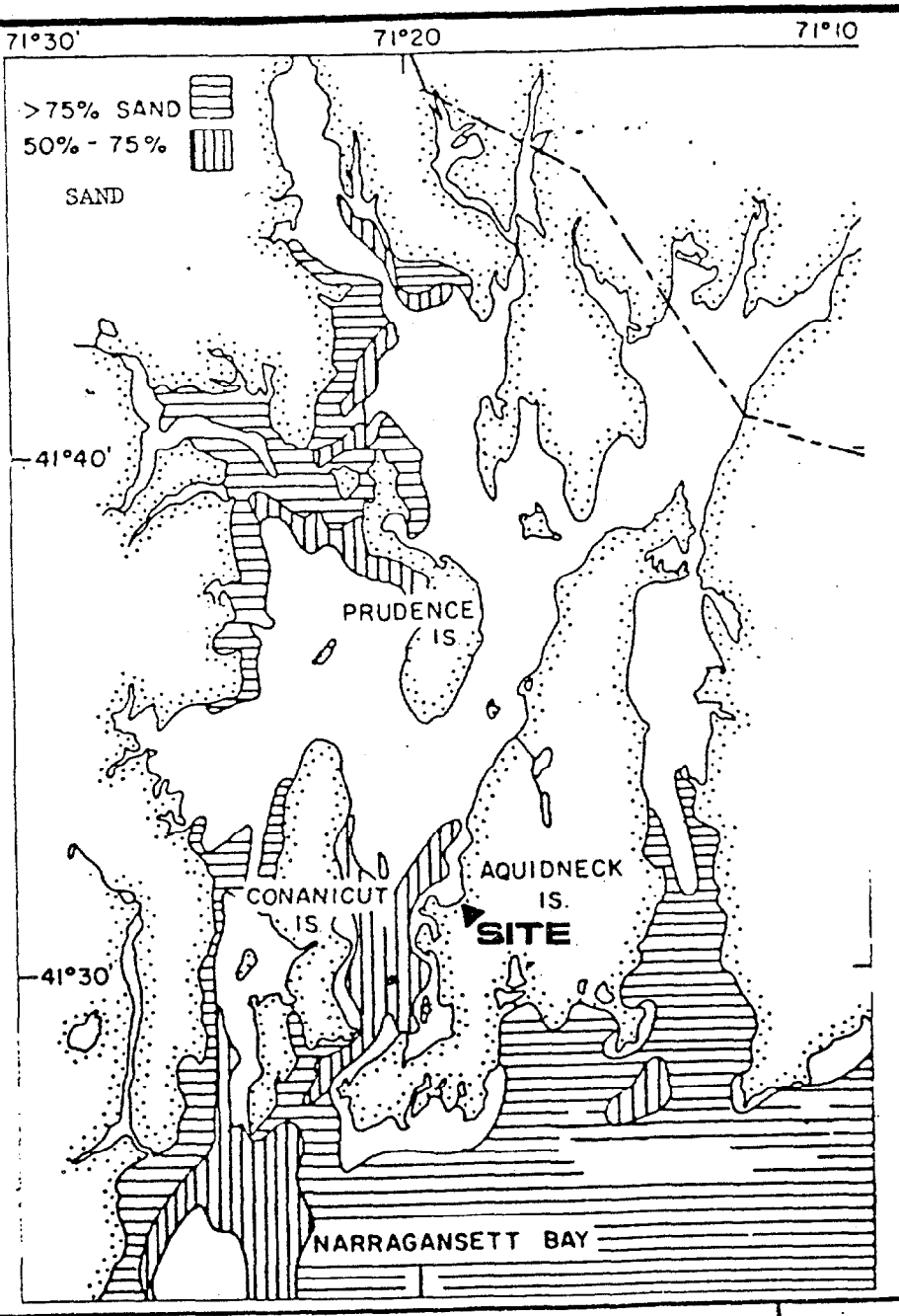
A survey conducted by the Environmental Protection Agency (EPA 1975) has shown the presence of heavy metal concentrations and bottom sediments interstitial waters and bottom waters north of the site. The highest values reported for sediment interstitial waters were 7,048 mg/l Mn, 2,351 mg/l Zn, 559 mg/l Fe, 55 mg/l Pb, 46 mg/l Ni, 44 mg/l Cu and less than 1 mg/l Cd.

WATER USES. Narragansett Bay is an economically important shellfishing area. Bay waters are used for contact (swimming, water skiing) and non-contact (boating, fishing) recreation. Further use includes navigation and waste disposal. Greenwich Bay is one of the major recreational areas in Narragansett Bay, with its coves harboring numerous pleasure boat marinas.

Rhode Island water quality standards are contained in regulations of the Department of Health, Division of Water Supply and Pollution Control, and were revised in 1973. The water use classes for fresh and seawaters in the state are described in Table 1. Figure 9 shows the water use classification of waters throughout Narragansett Bay. Table 2 is a summary of the water quality criteria for each of these use classes.

BAY WATER QUALITY. The Narragansett Bay drainage includes the southeastern one-third of the State of Rhode Island and adjacent areas in Massachusetts. Twenty-three communities lie within the basin (Rhode Island Statewide Planning Commission, 1976). The relatively small freshwater imput and large tidal volume of the Bay results in a well-mixed water column and slight salinity gradients down the Bay. Salinities range from 24 ppt at the head of the Bay to 33 ptt at the mouth of the Bay. Seasonal variations near the site are minor.

Information concerning the quality of Bay waters is available from the Rhode Island Department of Public Health (unpublished), the University of Rhode Island Bay Watch Project (unpublished), the U.S. Environmental Protection Agency (1975), and the U.S. Army Corps of Engineers (1959). An assessment

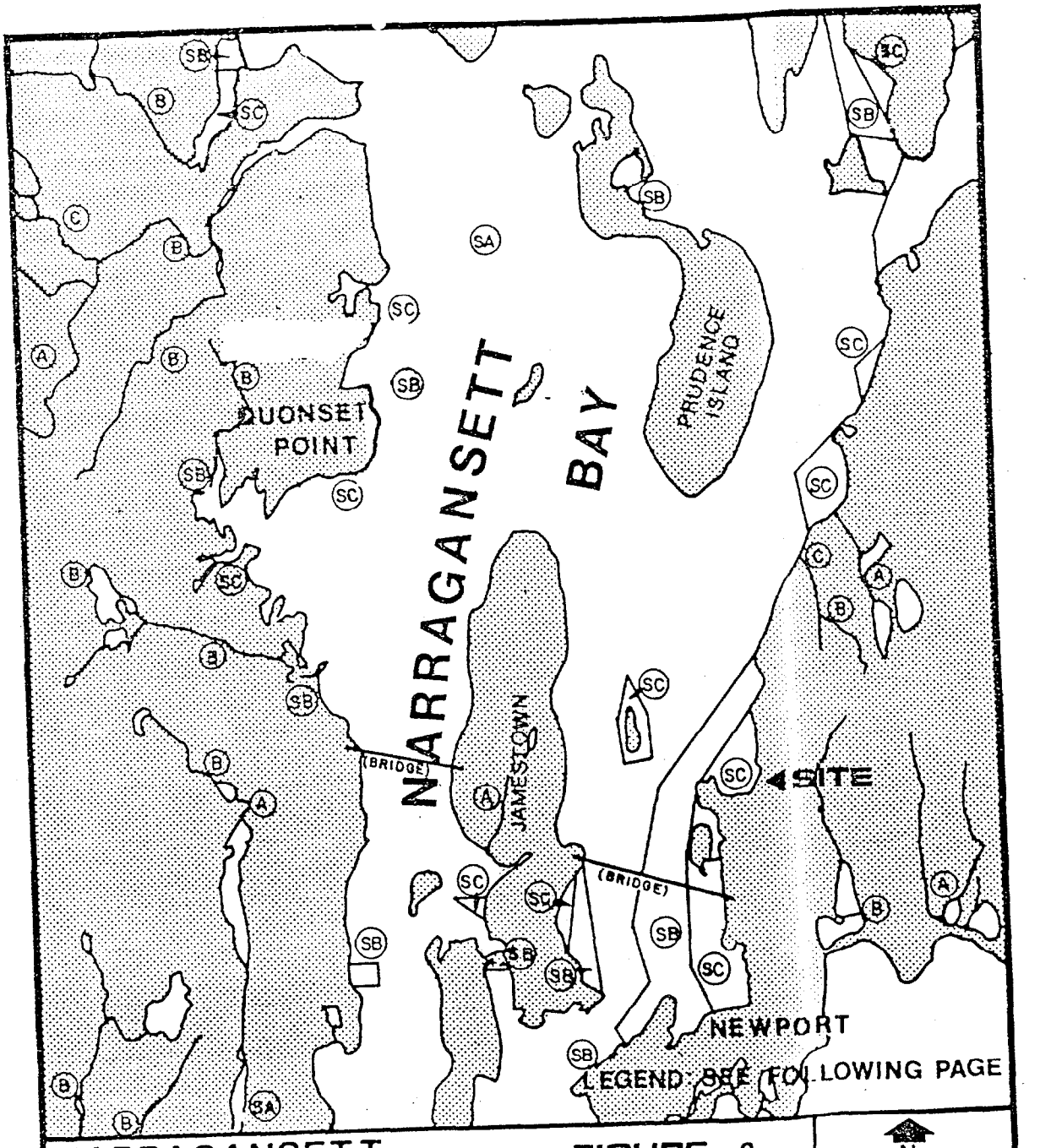


NARRAGANSETT FIGURE 8

BOTTOM SEDIMENT COMPOSITION

TABLE 1 Rhode Island Water Use Classes

FRESH WATER	SEA WATER
Class A	Class SA
Suitable for water supply and other water uses; character uniformly excellent.	Suitable for all sea water uses including shellfish harvesting for direct human consumption (approved shellfish areas), bathing, and other water contact sports.
Class B	Class SB
Suitable for bathing, other recreational purposes, agricultural uses, industrial processes and cooling; excellent fish and wildlife habitat; good aesthetic value; acceptable for public water supply with appropriate treatment.	Suitable for bathing, other recreational purposes, industrial cooling and shellfish harvesting for human consumption after depuration (restricted shellfish area); excellent fish and wildlife habitat; good aesthetic value.
Class C	Class SC
Suitable for fish and wildlife habitat, recreational boating, and industrial processes and cooling; good aesthetic value.	Suitable fish, shellfish and wildlife habitat; suitable for recreational boating, and industrial cooling; good aesthetic value.
Class D	Class SD
Suitable for navigation, power, certain industrial processes and cooling, and migration of fish; good aesthetic value.	Suitable for navigation, industrial cooling, and migration of fish; good aesthetic value.
Class E	Class SE
Nuisance; unsuitable for most uses.	Nuisance; unsuitable for most uses.



NARRAGANSETT FIGURE 9

EXISTING WATER QUALITY

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Table 2 Rhode Island Water Quality Criteria

WATER USE CLASS	FRESHWATER			
	A	B	C	D
Dissolved Oxygen (mg/l)	5	5	4	2
Dissolved Oxygen Saturation (%)	75 (16 hrs/day)	75 (16 hrs/day)	---	---
Sludge deposits	none	none	none	none
Color	none other than natural	none that would impair usage	none that would impair usage	none that would impair usage
Turbidity (JTu)	5	10	15	---
Coliform Bacteria (#100 ml)	100 (median) 500 (maximum)	1000 (median) 2400 (maximum)	none that would impair usage	---
Taste and odor	none	none that would effect fish taste	none that would effect fish taste	none that would effect fish taste
pH	as naturally occurs	6.5-8.0	6.0-8.5	6.0-9.0
Temperature increase	none other than natural	increase <4°F max 83°F	increase <4°F max 83°F	max 90°F
Chemical constituents	See Note (1)	See Note (1)	See Note (1)	See Note (1)
Fecal Coliform Bacteria	200 (median) 200 (maximum)	200 (median) 500 (maximum)	---	---

Table 2 Rhode Island Water Quality Criteria (continued)

WATER USE CLASS	SEAWATER			
	SA	SB	SC	SD
Dissolved Oxygen (mg/l)	6.0	5.0	4.0 (5.0 at least 16 hrs/day)	2.0
Sludge deposits	none	none	none untreated	none untreated
Color and Turbidity	None that would impair usages specified for this class			
Coliform Bacteria (#100 ml)	70 (median) 330 (maximum)	700 (median) 2300 (maximum)	none that would impair usage specified for this class	
Taste and odor	None that would impair usage or cause taste and odor in fish			
pH	6.8-8.5	6.8-8.5	6.5-8.5	6.5-8.5
Temperature increase	<1.5°F (Jul-Sep) <4°F (Oct-Jun) 83°F (max)	<1.5°F (Jul-Sep) <4°F (Oct-Jun) 83°F (max)	<1.5°F (Jul-Sep) <4°F (Oct-Jun) 83°F (max)	Based on most sensitive water use
Chemical constituents	None that would be harmful to human, animal or aquatic life			
Radioactivity	None that would be harmful to human, animal or aquatic life			
Fecal Coliform Bacteria	15 (median) 50 (maximum)	50 (median) 500 (maximum)	---	---

Table 2 Rhode Island Water Quality Criteria (continued)

Notes: (1) Chemical Constituents (Freshwater)

a. Waters shall be free from chemical constituents and radioactive materials in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate most sensitive and governing water class use.

b. In areas where fisheries are the governing considerations and approved limits have not been established, bioassays shall be performed as required by the appropriate agencies. The latest edition of the federal publication Water Quality Criteria will be considered in the interpretation and application of bioassay results.

c. Phosphorus Concentration--none in such concentration that would impair any uages specifically assigned to said class. New discharges of wastes containing phosphates will not be permitted into or immediately upstream of lakes or ponds. Phosphates shall be removed from existing discharges to the extent that such removal is or may become technically and reasonably feasible.

d. For public drinking water supplies, the limit prescribed by the United States Public Health Service will be used where not superceded by more stringent signatory state requirements.

(2) These standards do not apply to conditions brought about by natural causes.

(3) Class D and SD will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized. Appropriate waste treatment shall be secondary treatment with disinfection or the equivalent.

(4) All sewage treatment plant effluents shall receive disinfection before discharge into a watercourse.

(5) Any water falling below the standards of quality for a given class shall be considered unsatisfactory for the uses indicated for that class. Waters falling below the standards of quality for Class D or SD shall be Class E or SE and considered to be a nuisance condition.

Table 2 Rhode Island Water Quality Criteria (continued)

Notes (continued):

(6) No new waste discharges will be allowed into Class A, SA, B, or SB waters.

(7) In the case of thermal discharges, where mixing zones are allowed, the mixing zone will be limited to no more than 1/4 of the cross sectional area and/or volume of flow of stream or estuary, leaving at least 3/4 free as a zone of passage.

of present water quality conditions has recently been conducted by the Rhode Island Statewide Planning Program (1976).

Water quality in Narragansett Bay is generally very good. It is suitable for shellfish harvesting and both contact and non-contact recreation in most areas. Severe water quality problems exist, however, in the Upper Bay, including the Providence River and Seekonk River, resulting from municipal and industrial pollution. Mt. Hope Bay on the eastern side of Narragansett Bay is adversely affected by municipal wastes.

FRESH WATER QUALITY. Many fresh water streams and ponds in the Narragansett Bay Basin are adversely effected by waste water discharges. Eighty waste water discharges have been identified by the Rhode Island Statewide Planning Program (1976) in the Narrangansett Bay Basin. Non-point source discharges of water pollution in the Narrangansett Bay Basin include land fills, private sewage systems, urban run-off erosion, marinas and ship traffic. A large percentage of the households in the basin are not serviced by public sewage treatment systems and must rely on septic tanks. Poorly performing systems lead to pollution of the nearby surface waters. Urban run-off is frequently of poor quality and serves to degrade receiving waters.

GROUNDWATER QUALITY. Groundwater supplies in the State of Rhode Island are generally provided by the glacial aquifer. This aquifer is replenished by local rainfall which easily penetrates glacial outwash materials that overlie the bedrock. The average depth to groundwater is approximately 14 ft.. Water is soft and generally of good quality, but in some areas may contain excessive concentrations of iron and manganese. Maximum well yields are approximately 1,000 gpm.

AIR QUALITY. The ambient air quality of a region can be qualified with data on air pollutants for which National Ambient Air Quality Standards (NAAQS) have been promulgated. NAAQS consistant with those promulgated with the EPA have been adopted by the State of Rhode Island, Department of Health, Division of Air Pollution Control (DAPC). The DAPC has been operating and maintaining a comprehensive and an ambient air monitoring network in Rhode Island since 1968. Data from up to a total of 25 stations are available for total suspended particulates (TSP), sulfur dioxide, nitrogen oxide, carbon monoxide, and photochemical oxidents. Federal standards for these pollutants are listed in Table 3.

Ambient air quality for 1975 in the Providence area was observed to be well below existing standards for total suspended particulates and sulfur dioxide. Air pollution potential for the region and Eastern United States is presented in Figure 10.

Eighty violations in 1975 of the primary NAAQS for carbon monoxide have been recorded in the vicinity of major traffic arteries in Providence. While data from other areas of the state are not available, it is reasonable to expect

Table 3 National Primary and Secondary Ambient Air Quality Standards

Pollutant	Type of Standard	Annual maximum for avg. time, ug/m^3					Annual geom. mean of 24-hr averages ug/m^3
		1 hr	3 hr	8 hr	24 hr	1 yr	
Carbon monoxide	Primary and secondary	40,000$^{\alpha}$		10,000$^{\alpha}$			
Hydrocarbons (nonmethane)	Primary and secondary		160$^{\alpha}$ (6-9 a.m.)				
Nitrogen dioxide	Primary and secondary					100	
Oxidants	Primary and secondary	160$^{\alpha}$					
Particulate matter	Primary				260$^{\alpha}$		75
	Secondary				150$^{\alpha}$		60
Sulfur dioxide	Primary				365$^{\alpha}$	80	
	Secondary		1300$^{\alpha}$				

$^{\alpha}$ Not to be exceeded more than once per year.

Transportation. The major route traversing Rhode Island is I-95, which follows a southwest-northeast route from New London, bisecting the West Bay area; passes through Providence, and continues to Boston. I-295 bypasses Providence. Several multi-lane divided state highways, beginning at Davisville, provide access via State Route 114 and U S Route 1 from the site and to nearby communities. These are the primary roads which would disperse traffic from the site to other destinations, and offer good access to all areas of the state (Figure 11).

Over 40 interstate truck lines serve the state, primarily from Providence. Interstate bus service is also available at Providence.

The Penn-Central Railroad operates a major north-south line approximately two miles west of the site. This line provides a passenger and freight service and, at Providence, connects with other lines serving all parts of the country.

The nearest civilian airport, Theodore F. Green Airport in Warwick, is approximately ten miles north of the city. The airport functions as the major general aviation facility for the entire state of Rhode Island. Five airlines (Allegheny, Eastern, American, National, and United) provide over 75 scheduled flights daily.

SITE OF PROPOSED ACTION. The lands proposed for leasing in the Coddington Cove area encompass approximately 44 acres and includes all of Pier 1 and the south side of Pier 2 (Figure 2). The Rhode Island Port Authority, and Economic Development Corporation, proposes to sublease the area to Robert E. Director, Inc. The north side of Pier 2 will continue to be used by the Navy.

Structures. The following major structures are included in the area to to be leased (Figure 12):

Structure	Area Square Feet	Former Use
Pier 1	157,500	Berthing pier
2	315,000	Berthing pier
Bldg 2	30,591	Warehouse
3	30,591	Warehouse
4	34,000	Warehouse
5	32,869	Trans-shipment Building & Office
6	30,591	Warehouse
40	80,040	Equipment Service Building
41	80,040	Maintenance Shop
42	53,523	Cold Storage
68(located on Pier 2)	87,600	Storehouse
234	26,563	Transit Shed
TOTAL	814,908	

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MAJOR STRUCTURES - CODDINGTON COVE

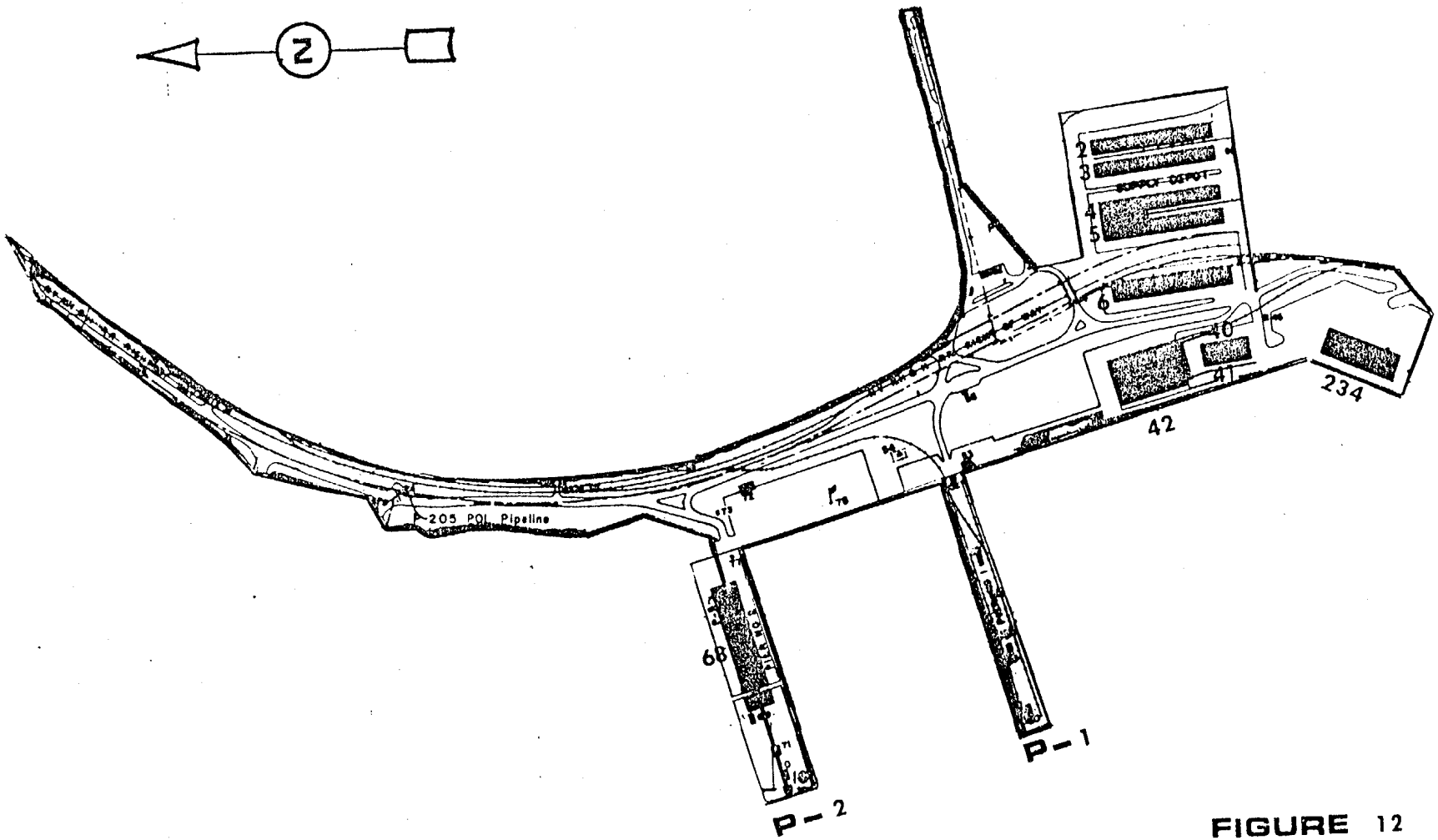

FIGURE 12

Pier 1 is 100 feet wide and 1,575 feet long. Pier 2 is 200 feet wide. and 1,575 feet long. Both piers are constructed of reinforced concrete and supported by concrete pilings with wooden fenders. Load bearing capacity of the pier decks is 600 psf (Figure 12).

Rail spurs on either side of Pier 1 connect the pier to the main Aquidneck Island Line. Electric, steam and water service are provided to both piers. However, both of the piers and utility service lines are in need of repairs.

Pier 1 is presently used by the Navy as a berthing pier for Naval Reserve homeported ships. Pier 2 is not being used by the Navy. The channelward end of Pier 2 is licensed to the Department of Commerce, National Oceanic and Atmospheric Administration for berthing a research vessel.

The Naval Underwater Systems Center has shown a requirment for the use of the north side of Pier 2. However there has been no indication on the part of the Navy as concerns the fate or relocation of the reserve ships homeported at Pier 1.

Building 4 is currently occupied and licensed to Eastern Telephone Supply and manufacturing Company. This company buys and overhauls obsolete American telephone systems and sells these systems to foreign countries.

Building 40 is presently occupied and licensed to Coddington Yachts Inc.; a small family-owned yacht building concern.

Building 53 (not listed above) is a very small building unsuitable for license or lease and is currently serving as the Pier Master Shop. This is the only building in the area proposed for leasing and presently occupied by Navy personnel. This function is to be transferred to the north side of Building 68 (located on Pier 2) after building 68 is renovated.

Buildings 2, 3, 5, 6, 41, 42, 68, and 234 are now vacant. Most of these buildings will require repairs prior to use.

The Proposed lease (Appendix A) requires the lease to provide a lift station and connection to the sanitary sewer or to provide portable sewage facilities.

Utilities. The present sewage system is a combination of gravity and force flow lines with a series of pumping stations that move the flow to the municipal treatment plant. The City of Newport sewage treatment plant is a primary treatment facility that is operating under a permit granted by the Enviornmental Protection Agency with an extension to 1977. Designs for a new secondary treatment facility are now underway. The capacity of a portion of the existing sewer lines serving the Coddington Cove area is sufficient to handle the users now occupying the base. However, a bottleneck currently exists on this line due to insufficient pipe capacities from the Coddington Cove area of the base to the Newport city sewage treatment plant. Additional pipe capacity is required to alleviate the bottleneck condition.

Buildings 6, 40, 41, 42 and 234 are not connected to the sanitary sewer system and in most cases discharge sanitary wastes to the bay.

PROPERTY DESCRIPTION

The property consists of the former Newport Naval Station's shore establishment for logistic support and berthing for its cruiser destroyer fleet. This is a 56-acre site containing eight major buildings plus two large piers for berthing of the fleet. The piers project into a deep water harbor, Coddington Cove, protected by Coddington Point and by a break-water to the north. The pier support area is unfortunately hemmed in on all sides by continuing Navy operations. On the northeast is the Navy Underwater Systems Center (NUSC), a large, self-contained operation which also retains the small craft basin north of Pier 2. On the southeast is the consolidated portion of the Navy's Supply Depot, containing numerous warehouses and retaining the use of small craft basin south of Pier 1. To the east is the supply Depot Administration Building, being retained; and also the Public Works Center, to be retained.

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CODDINGTON COVE

Structure	Description	Square Feet
Pier 1	Berthing pier with rail and power	157,500
Pier 2	Berthing pier with building #68 located on it	315,000
Bldg. 2	General warehouse	30,591
3	General warehouse	30,591
4	General warehouse	34,000
5	General warehouse	32,867
6	General warehouse	30,591
40	Quonset-type storage shed	8,400
41	Quonset-type storage shed	8,400
42	Cold storage warehouse with 32,300 sq. ft. cold storage	53,523
68	Pier cargo storage building	86,000
234	Transit Shed	30,000

Piers 1 and 2

These piers are the major ship piers at Newport. Pier 1 is 1575 feet long and 100 feet wide. It is made of reinforced concrete construction supported by concrete pilings with wooden fenders. Rail spans are on either side of the pier connecting to the main Aquidneck Island line. Electric power is located at the piers. Load bearing capacities at both piers is 600 psf.

Pier 2 is 1575 feet long and 200 feet wide and is constructed similarly to Pier 1. There are no rail spans on this pier.

A large single structure (Building 68) is located along the centerline of this pier, starting out 100 feet from the pier, base. This building, described herein is 860 feet long. The piers are in need of repair.

At present, the fresh water and the sewer systems serve the main Cove area, though not all of the buildings located here are hooked up to these systems.

Buildings 2, 3, 4, 5 and 6

These similar buildings are designated as storehouse and shipping facilities located next to one another in the land area behind the piers. The buildings are uniformly approximately 500 feet long and 60 feet wide, and each has a floor space of about 29,286 square feet. They were built in 1942 and and are of a concrete masonry construction. The interiors are divided by 20 foot by 15 foot bay sizes due to the interior support stanchions for the roof. There is an overhead garage-type door at the front of each building and interior lighting levels are good. They are heated by interior space heaters. Interior clear space is about 12 feet to the pipe and ductwork along the ceiling. Rail spans currently exist between buildings 2 and 3, 4 and 5 and along 6. Loading dock spaces are limited and appear to be in disrepair. These buildings are in generally fair condition.

Buildings 40 and 41

These are 40 foot by 375 foot Quonset-Huts located alongside one another. They provide about 15,000 square feet of floor space each. There is electricity available but no sewer hook-ups.

Building 42

This is a one story, brick cold storage building complete with ammonia-brine refrigeration plant. Cold storage includes 6100 square feet of general refrigerated cool space, 3,800 Sq. Ft. of butter, egg and fruit storage floor space and 22,400 sq. ft. of freezer storage space. The building is of brick masonry and concrete construction and has side loading space on one side. The refrigeration equipment is in need of repair.

Building 68

This is a steel frame building with masonry walls located on Pier 2. It consists of four sections partitioned off from one another and is 100 feet wide. The sections are 240 feet, 200 feet and 220 feet long, respectively. Each section contains at least four roll-up doors 12 ft. wide by 14 ft. high. The building is in fair condition, with both interior and exterior sections in need of repair. The building has electricity and water connections.

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Buildings 234

This is the so-called transit shed building which features a continuous roof skylight, steel roof deck, and 12 foot wide by 14 foot high roll-up doors at either end. The building measures 300 feet long by 100 feet wide and has 30,000 sq. ft. of interior space. There are approximatley two acres of parking area surrounding this building. It is presently being used by Newport Shipyard, Inc.

Existing Utility System

Utilities at the Newport Naval Base are presently provided by the Navy through their purchasing of outside utility service, such as electricity and sewerage treatment, or they are provided directly to the user through site utility infrastructure shared with the Navy, such as the fresh water system.

APPENDIX E

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN, JUNE 1987, REVISION A, MAY 1989

SPILL PREVENTION CONTROL

AND

COUNTERMEASURE PLAN

Prepared for:

Robert E. Derecktor of RI Inc.
Coddington Cove
Middletown, RI 02840

Prepared By:

Applied Environmental Technologies Corporation
7 Belver Avenue, Suite 210
Quonset Point, RI 02852

June, 1987

Revision A - Prepared May 1989

By Karen Augeri/Paralegal/REDRI

SPILL PREVENTION CONTROL AND
COUNTERMEASURE PLAN

Derecktor Shipyard
Middletown, Rhode Island

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2.00	General Facility Information	1
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B 40 CFR 112 Oil Pollution Prevention

C Oily Water Separator Maintenance

MANAGEMENT APPROVAL

I, the undersigned, having the necessary authority to commit Derecktor Shipyard to the implementation of this plan, hereby certify that this SPCC Plan will be implemented as herein described.

Authorized Signature: Mark S. Donahue

Name: Mark S. Donahue

Title: Vice-President

Date: 5/26/89

Name and Address of Owner/Operator:

Name: Robert E. Derecktor of Rhode Island Inc.

Address: Coddington Cove

Middletown, RI 02840

Designated Person Accountable for Oil Spill Prevention at Facility:

Name: Robert G. Chipman

Title: Hazardous Material Controller

Engineer's Certification

I, the undersigned, hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR Part 112, attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Name: Ralph S. Carr Jr.

Signature: Ralph S. Carr Jr.

Date: 5/25/89 Registration No. 2556 State R.I.

RALPH S. CARR, JR.

No. 2556

SPILL PREVENTION CONTROL AND
COUNTERMEASURE PLAN

1.00 PURPOSE

The purpose of this plan is to discuss how the discharge of oil from storage and transfer activities at Derecktor Shipyard into the navigable waters of the United States will be prevented. The plan is written in accordance with Title 40 of the code of Federal Regulations Part 112 (40 CFR Part 112) entitled Oil Pollution Prevention (See Appendix B). Physical containment structures, routine inspections, testing procedures and spill countermeasures designed to achieve such prevention are described in the following text.

Robert Chipman, Hazardous Materials Controller, is the designated person responsible for oil spill prevention and clean up. It is his responsibility to implement this plan if required and to ensure that key personnel at the shipyard have an adequate understanding of the plan.

2.00 GENERAL FACILITY INFORMATION

Derecktor Shipyard (REDRI) is located in Middletown, Rhode Island on Coddington Cove, as shown in the locus sketch (Figure 1). The shipyard covers approximately 44 acres of land.

The primary operations at REDRI are shipbuilding and ship maintenance. These include such operations as blasting; painting; welding; inspections and maintenance of various tanks; and installation of a variety of mechanical, electrical and hydraulic equipment. These are performed at several locations: within building, on dry docks, on ships which are afloat, and in open land areas outside buildings.

Oils may be found ashore at the shipyard in several tanks on-site. The locations are shown in Figure 2. Most of these tanks hold Number 2 fuel oil for on-site heating. Two tanks store waste oils removed from ships in port. The total storage capacity of the onshore tanks is approximately 62,000 gallons. Table 1 in Section 4.10 shows the capacity and construction of each tank.

Ships which come into the shipyard for maintenance often contain fuel oils and oily bilge water which must be pumped out before work can begin. The type and amount of oil may vary with each ship depending upon its particular characteristics. Usually, the oils are transferred into a tank truck or small portable tank while the ship is on the dry dock or docked alongside the pier. These operations are discussed in detail in Section 4.00.

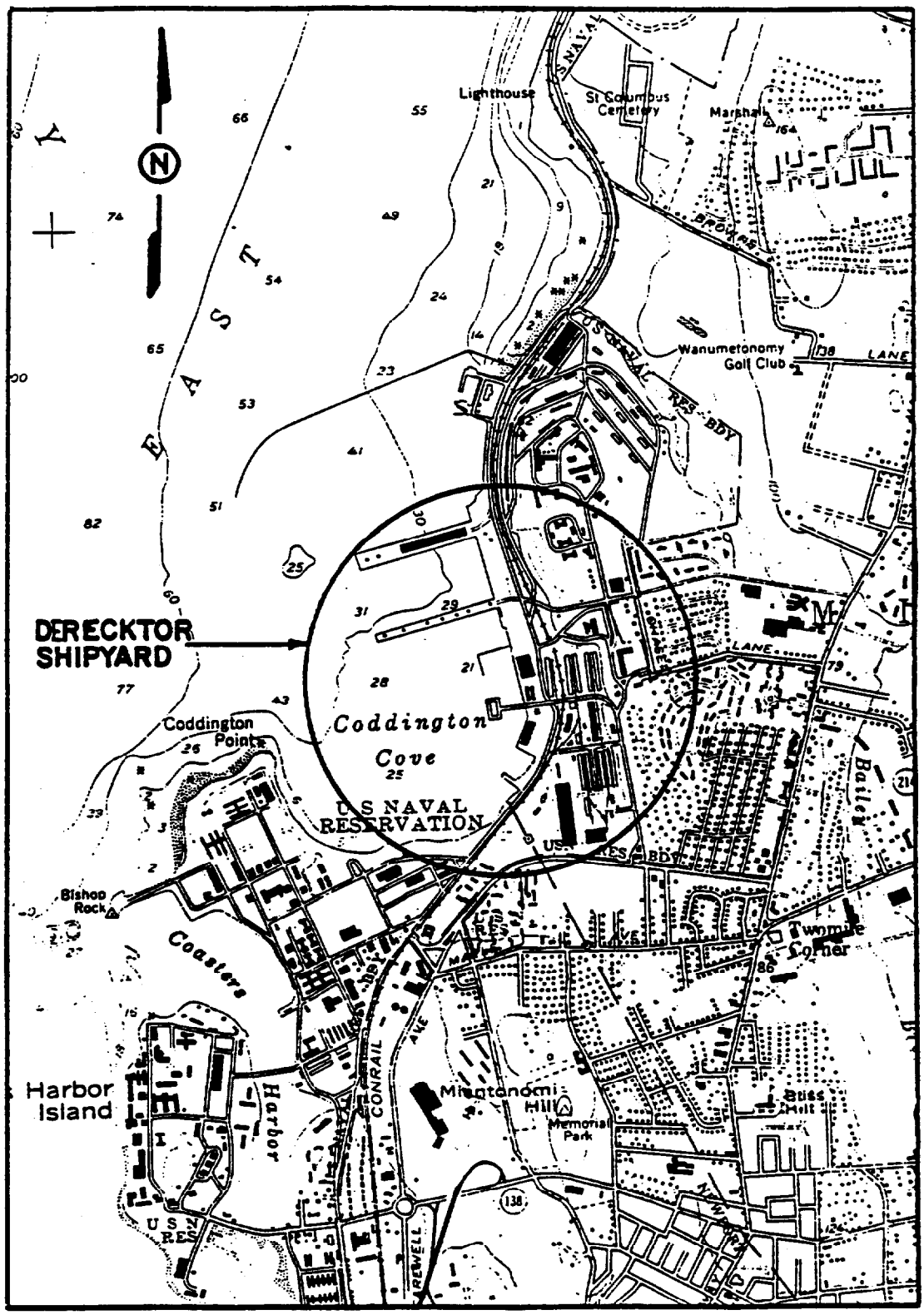

FIGURE 1 - Locus Map, Derecktor Shipyard
Taken from Prudence Island
Quadrangle dated 1955 and
photorevised in 1970 and 1975.

3.00 SPILL HISTORY

3.10 RECORD OF PAST SPILLS

No Major oil spills have been reported into navigable waters, but several smaller spills have occured. Each of these is described below.

1) Date: 10-27-87 Volume: 100 Gallons

Cause: Subcontractor refueling compressor tank overflow.

Corrective Action Taken: McDonald & Watson called in for clean up.

Plans for Preventing Recurrence: All subcontractors instructed/copy SPCC Plan.

2) Date: 10-31-87 Volume: 50 Gallons

Cause: Overflow during ship to shore transfer.

Corrective Action Taken: Activated SPCC Plan.

Plans for Preventing Recurrence: Increase training for employees.

3) Date: 11-2-87 Volume: Estimated 100 Gallons

Cause: Subcontractor bilge cleaning.

Corrective Action Taken: McDonald & Watson called in for clean up.

Plans for Preventing Recurrence: Review subcontractor permit with DEM before allowing discharge.

4) Date: 12-21-88 Volume: 100 Gallons

Cause: Fuel Oil Delivery to portable tank for Pier boilers overflow.

Corrective Action Taken: Drew Oil responsibility. REDRI activated SPCC Plan - Drew called Jet-Line.

Plans for Preventing Recurrence: All Subcontractors required to stand-by lines during fuel transfer.

3.20 SPILL REPORTING REQUIREMENTS

Any oil discharges from the Derecktor Shipyard greater than 1,000 gallons or in harmful quantities (to cause a visible film on the water's surface) in a two month period into Coddington Cove shall be reported to the Regional Administrator of the United States Environmental Protection Agency within 60 days of such as avent. The spill report should include the following information:

1) Name of facility

2) Name(s) of owner or operator of facility

3) Location of the facility

4) Date and year of initial facility operation

5) Maximum storage or handling capacity of the facility and normal daily throughput

6) Description of the facility, including maps, flow diagrams and topographical maps.

7) A complete copy of the SPCC plan with any ammendments.

8) The cause(s) of such spill, including a failure analysis of system or subsystem in which the failure occured.

9) The corrective actions and/or countermeasures taken including an adequate description of equipment repairs and/or replacement.

10) Additional preventive measures taken or contemplated to minimize the possibility of recurrence .

11) Such other information as the Regionl Administrator may reasonably require pertinent to the spill event or SPCC.

4.00 SPILL POTENTIAL AND PREVENTION

4.10 OIL STORAGE TANKS

Oil stored at the Derecktor Shipyard is located as shown in Figure 2. A list of oil storage tanks and their locations, capacities, construction and material stored is given in Table 1 below. Releases may occur due to leaks or ruptures.

4.20 OIL TRANSFER OPERATIONS

Ships that are docked for repairs and maintenance may require several oil transfer operations. The three main oil transfer operations are fuel oil, oily bilge water and lubricating oil transfer. The way these materials are transferred from the ship to shore depends on where the ship is located, ie. pierside or on the dry dock. The three dry docks are accessed from Pier 1 via individual ramps. Vehicles such as small tanks trucks and forklifts can drive onto the dry docks.

Larger equipment is placed directly on the ships or on the dry dock using one of several cranes available throughoput the shipyard.

4.21 FUEL OIL TRANSFER

Before the ship's oil tanks may be inspected and, if necessary, repaired, they must be emptied and cleaned as described as follows.

First, the ships oil transfer lines (size varies [approximately 4" to 6" diameter]) are connected from the ships fuel oil tanks to a tank truck or barge. These tanks trucks are never used for storage of oil, only transfer, the barges may be used for storage. The truck, which typically has a capacity of 8,000 to 12,000 gallons, will be parked on a pier or driven onto dry dock A. Next, the ships oil pumps transfer most of the fuel oil to the tank truck. Barge size varies, but unloading is similar to truck. An oil boom is deployed around the ship. A residual of 100 to 200 gallons of fuel oil cannot be pumped out using this method. To remove the remaining oil, an air driven diaphram pump is used in place of the ships pumps.

If the oil is to be reused, the tank truck delivers the oil to an off-site storage facility from where it is brought back when the ship is ready to depart. If it is waste oil, it is transferred to tank A-7 or A-8 for storage.

If tank repair is necessary, the tank will be air purged and steam cleaned or pressurewashed. The oily water is handled as waste oil described in section 4.22. REDRI has aquired an oily water separator for the recycling of oily water solutions. The entire pumping operation may take several days depending on the tank and pump capacities.

4.22 BILGE WATER TRANSFER

Bilge water containing small amounts of oils is treated by the shipyards oil water separator and the oil is disposed of off sight. The effluent is discharged into the cove. The effluent flow from this activity is limited to 8,000 gallons per day. The RIPDES Permit for this activity requires monitoring of the effluent. Parameters to be tested include; Total suspended solids, Oil and grease, volatile organics, polynuclear aromatic hydrocarbons and lead. Th above limitations and monitoring requirements apply to each separately unique cleaning operation. If more than one tank is being cleaned and is separate and self contained from other tanks the water from that tank must be monitored as a separate discharge.

The bilge water removal procedure is described in the following paragraphs.

Either a 500 gallon mobile oil tank , a 1000 gallon portable tank or a 2000 gallon vacuum truck, which are only used to transfer oils, not store them, is brought to the appropriate pier on a fork lift. The forklift either drives onto dry dock A or puts one of these tanks on the pier near the ship. The tank is then moved from the pier by crane.

After the transfer lines are connected from the ships hull to one of these tanks, an air driven diaphram pump transfers the bilge water to the tank. The tank is placed back onto the pier using the crane or driven by forklift off the dry dock and is then moved to the waste oil storage tank area. The manhole cover on top of the waste oil tank is removed by a person on the top of the tank. The oil and water is run through an oil/water separator. The oil is transferred off site by New England Industrial Waste (or a similar company) and disposed of. The water is discharged into the contiguous waters of Coddington Cove, in accordance with the recently issued RIPDES Permit modification RI0021539. If for any reason during testing of this effluent it is determined to be unacceptable for discharge a waste oil company will remove it from the yard for proper disposal.

4.23 HANDLING OF LUBRICATING OILS

Lubricating oils collected from servicing ships on the dry docks are drained via a rubber hose to a 55 gallon drum or the waste oil tank. Once a drum is filled, the valve on the hose is closed to stop the flow of oil and the drum is closed. The drums are then moved from the ship or dry dock by forklift or crane and transported to the hazardous waste storage area by forklift.

4.30 LOADING AND UNLOADING OPERATIONS

During the winter months, tanks A-6, U-1, U-2 and U-3 are filled on a fairly routine basis by an off- site oil delivery truck. These tanks are used for heating and are not filled during other seasons. Deliveries are made to the other fuel oil storage tanks using a 3000 gallon capacity on-site tank truck. These on-site deliveries are made approximately every other day during the winter only. The wate oil tank is empties of approximately 3000 gallons once or twice per month. Typically these trucks park in the areas indicated in Figure 1.

4.40 CONTAINMENT MEASURES

4.41 ABOVE GROUND TANKS

Secondary containment is provided for two large aboveground tanks, A-6 and A-7 and also for some of the smaller tanks. The containment structure and potential for release of each tank excluding loading and unloading is described below.

Tank Number	Comments
A-1	100% Secondary containment provided by the ships bilges.
A-2 and A-3	These two tanks are located in a small room on the North side of Building 18. Higher berms have been added to allow for containment of 250 gallons.
A-4	No secondary containment, however, a bag of speedi-dri will be maintained in Building #6 to confine any spill to the inside of this building.
A-5	No secondary containment, but bags of speedi-dri will be kept in nearby Building #2 and #3 in order to dike any spills.
A-6	This tank is located within a welded steel secondary containment system capable of containing approximately 10,000 gallons. Although this would not be sufficient containment if the tank were full, the tank is not maintained full. No more than 10,000 is stored at time. This tank will be inspected weekly and the level checked and recorded to ensure there is no more than 10,000 within it at any given time.

A-7 and A-8	These tanks are located within a welded steel secondary containment system capable of fully containing a spill.

4.42 UNDERGROUND TANKS

U-1 and U-2	The two underground tanks are identical 10,000 gallon steel tanks; U-3 is a 2,500 gallon steel tank. They were installed in 1987 by the Donatelli Construction. No secondary containment has been provided. In the event that a spill reaches navigable waters booms will be used to contain and sorbent material may be employed to remove the oil from the water.

4.43 DRY DOCK TANKS

D-1	This tank stores diesel fuel which is used to power the backup generator on the large dry dock. It is a freestanding tank located in a sidewall compartment . The compartment appears to be fully self contained.
D-2 and D-3	These two tanks are located on the new Dry Dock. They are both self-contained with complete secondary containment trays. Both tanks are used to store diesel fuel which is used to power the dry dock generators. D-2 has a capacity 1000 gallons and D-3 has an estimated capacity of 500 gallons. These amounts are estimated as the dock was built in Europe and tank capacity is metric.

4.44 PORTABLE TANKS

There are several tanks classified as portable by the shipyard. These are described below.

P-1 through P-5	These tanks are on trailers with wheels which are usually kept outside of Building 41. They are all used to store gasoline. The gasoline in these tanks is used to fuel various on-site equipment. The trailers are parked on asphalt with no storm drains in the vicinity. No secondary containment is provided, but all tank sides are visible. Bags of speedi-dri are kept in Building 41 to be employed in the event of a spill.
P-6 through P-9	These tanks are located on Pier One.

Former listing of tanks had D-2 through D-5 listed. D-2 has been removed from service and D-3, D-4 and D-5 have been relocated as portable tanks, for yard wide service.

4.50 INSPECTION/TESTS

In order to prevent the discharge of oils from the above and below ground storage tanks, the following inspections and tests (below ground only) are proposed to be carried out by REDRI. The following procedures represent preventative measures and the maintenance for the oil storage tanks:

1) Weekly visual inspections will be made of all tanks and containment areas for any signs of leakage or possible structural damage which may lead to a spill.

2) Weekly inspections will be carried out under the supervision of the Hazardous Material Controller with accurate written records being kept which include at least the date, time of day, weather conditions, inspectors remarks and inspectors initials. (See Appendix A for sample inspection log).

3) Each below ground tank will be taken out of service every three years for tanks less than fifteen years old and once every year for tanks over fifteen years old, to be hydrostatically tested to design pressure and to insure the tanks integrity. All filling and emptying lines which are below ground shall be similarly tested at this time. Test procedures are discussed below.

4) Adequate lighting levels shall be maintained in tank storage areas during night hours so that a spill could be observed.

5) Any deficiency discovered by the above listed procedures shall be given immediate attention with proper resources and manpower committed to assure adequate repair or replacement of said deficiency.

6) In particular, tank A-6 will be checked to be sure that it is never more than half full. During weekly inspections, the level of this tank will be checked and recorded. There will never be more than 10,000 gallons in this tank because the containment for this tank will only hold 10,000 gallons.

The following represent preventative measures for oil deliveries at the storage tanks.

1) All deliveries should be made during daylight working hours, when possible.

2) All drivers shall check in at the guard house and be met by personnel who are familiar with the SPCC Plan prior to any unloading operations.

3) The status (amount of oil in tank) of all tanks should be given to the driver prior to filling to avoid overfills.

4) Trucks are to be parked within the designated loading/unloading areas.

5) Truck containment areas are to be free of standing precipitation during loading/unloading operations, to ensure spill containment volume is available.

6) Truck wheels should be chocked in both directions during loading or unloading to insure that premature vehicular departure does not occure before the complete disconnection of transfer lines.

7) Shipyard personnel will be at filling stations to prevent any spillage during or after filling operations.

8) The driver and maintenance personnel shall be present during these operations.

9) Prior to filling or departure of any truck the driver shall check the lower most drain and all outlets of the truck for tightness or leakage and retighten, readjust or replace any of these to prevent oil leakage.

4.52 HYDROSTATIC TANK TESTING

Hydrostatic testing of inground tanks is necessary to determine if these tanks have developed leaks from the corrosion of the metal tank shell. Inground tank rates of corrosion will vary depending on the ground water table conditions and upon the corrosion protection measures taken. Since the exterior of the underground tanks at REDRI cannot be visually checked for leaks and internal inspection might be capable of detecting a leak, routine pressure testing is proposed. The tests are proposed to be conducted every three years for inground tanks less than fifteen years old and annually for older tanks. The increased frequency is due to the fact that tanks over fifteen years of age are more likely to develop corrosion problems. Petro Tite or Leak Lokator tests will be used to test the integrity of each tank to within .05 gallons per hour.

A leaking tank must be emptied and removed from service. The area about and beneath the tank should be inspected for evidence of leakage. Any oil contaminated sand should be properly disposed of at a licensed facility.

In the event of a fuel oil storage tank leak or rupture from a tank with secondary containment, it is anticipated that the oil will be contained with the retaining wall structure of the appropriate secondary containers. The party who discovers this type of spill shall report it immediately to the Hazardous Material Controller. He, in turn, will survey the area and notify one of the spill control companies and request their immediate assistance, describing the nature of the spill in order that proper equipment can be dispatched. The clean-up operations to follow should consist of pumping dry the area within the retaining walls or the removal of any oil laden soil contaminated from the spill. The necessary repair work will then take place as required, including the replacement with clean fill of any soils removed duirng the clean-up process.

Should a major leak or rupture occur during loading or unloading of oil tanks or from a tank without secondary containment this spill would not be expected to be retained by any structures. In the event of this type of spill, the following procedure shall be followed:

1) The personnel who discovered the leak or who was present duirng the tank loading/unloading operation shall immediately notify the Hazardous Material Controller (See Section 1.00, Purpose)

2) If the leak is not contained within the walls of the secondary containment structure or if a threat of release from the secondary containment structure in question exists, bags of speedi dri will be deployed immediately to the area in which there is a threat of a release from a container.

Once this action is taken and it is assured that any spilled material will wholly be contained within the plant site, the spill area shall be surveyed and Jet Line Services will be called for immediate assistance. The clean-up operation should include vacuuming of surface oil into trucks, and removal of oil laden absorbant. A thorough inspection of the area will be conducted by the Hazardous Material Controller and qualified personnel of Jet Line Services immediately after the clean-up activities to be sure all the oil was removed.

3) Any necessary repair work may now take place including replacing soils removed during the spill clean-up with clean fill.

4) If the spill meets the conditions specified in section 3.20, Spill Reporting Requirements, it shall be reported as specified in that section.

5) In the event that an oil spill reaches the water at the shipyard, REDRI shall employ their 500 foot boom using the yard launch to locate it in order to contain as much of the spill as possible. Jet Line Services will be utilized as a spill control company. Clean-up activities will include spill containment and oil skimming.

5.00 SPILL COUNTERMEASURES

REDRI has used and will continue to use Jet-Line Services as their spill clean up contractor. Jet-Line Services is a local New England firm highly qualified as a spill clean up contractor. In the event Jet-Line is not available, another qualified company, such as McDonald & Watson may be employed. The addresses and telephone numbers for these firms are listed below.

1) Jet-Line Services (800) JET-LINE
   441 R. Canton Street
   Stoughton, Ma

2) MacDonald & Watson Waste Oil Company
   Pole 12 - Green Hill Rd.
   Johnston, RI (401) 946-0200

6.00 PLAN AMMENDMENTS AND REVIEW

REDRI shall amend its SPCC Plan in accordance with the published regulation guidelines whenever there is a change in the following:

a) Facility Design,

b) Construction,

c) Operation, or

d) Maintenance

which materially affects the facility's potential for the discharge of oil or upon a navigable waterway or adjoining shoreline. Such ammendments shall be fully implemented as soon as possible, but not later than six months after such change occurs.

A complete review and evaluation shall be made of the SPCC Plan at least once every three years by the owner or operator. The Plan shall be ammended if more effective prevention and controll technology exist which would significantly reduce the likelihood of a spill event from the facility. Such technology must have been field-proven at the time of review.

No ammendment by an owner or operator shall be incorportaed into their SPCC Plan unless it has been certified by a Professional Engineer in accordance with the aforementioned Federal Regulations.

TABLE 1

Tank Number	Approx. Size Gals.	Location at Shipyard	Construction	Material Stored
A-1	10,000	Greenport Ferry	Steel	# 2 Fuel Oil
A-2	250	Building 18	Steel	# 2 Fuel Oil
A-3	250	Building 18	Steel	# 2 Fuel Oil
A-4	250	Building 6	Steel	# 2 Fuel Oil
A-5	250	Between Bldgs. 2 & 3	Steel	# 2 Fuel Oil
A-6	20,000	Building 41	Steel	# 2 Fuel Oil
A-7	5,500	North End of Shipyard	Steel	Waste Oil
A-8	5,500	North End of Shipyard	Steel	Waste Oil
U-1	10,000	Building 234	Steel	# 2 Fuel Oil
U-2	10,000	Building 234	Steel	# 2 Fuel Oil
U-3	2,500	Building 234	Steel	# 2 Fuel Oil
D-1	550	Dry Dock	Steel	Diesel Fuel
D-2	1,000	Dry Dock III	Steel	Diesel Fuel
D-3	500	Dry Dock III	Steel	Diesel Fuel
P-1	250	Trailer near Building 41	Steel	Gasoline
P-2	250	Trailer near Building 41	Steel	Gasoline
P-3	250	Trailer near Building 41	Steel	Gasoline
P-4	250	Trailer near Building 41	Steel	Gasoline
P-5	350	Alongside Building 41	Steel	Gasoline
P-6	8,500	Pier 1	Steel	# 2 Fuel Oil
P-7	275	Pier 1	Steel	Diesel Fuel
P-8	275	Pier 1	Steel	Diesel Fuel
P-9	275	Pier 1	Steel	Diesel Fuel

Notes:

1) The following abbreviations are used:

A - Aboveground tanks
U - Undergound tanks
D - Dry Dock tanks
P - Portable tanks

2) Tanks A-4 and A-5 are located on trialer trucks used to house oil fired boilers.

APPENDIX C - SPCC PLAN

MAINTENANCE OF OILY WATER SEPARATOR

CONTENTS

Pg. 1 Section 7.00 General and Indicators that maintenance is required.
Section 7.10 Detergent Washing

Pg. 2 Section 7.1.1 Basic Steps/Washing

Pg. 3 Section 7.1.2 Water for Washing
Section 7.1.3 Additives

Pg. 4 Section 7.2.0 Acid Washing
Section 7.3.0 Lay Up

Pg. 5 Section 7.4.0 Sampling
Section 7.5.0 Laboratory Analysis

Pg. 6 Section 7.5.0 continued and
Section 7.6.0 Trouble Shooting

Pg. 7 Section 7.6.0 Trouble Shooting

Pg. 8 Section 7.7 Manufacturers Information

7.00 MAINTENANCE OF OILY WATER SEPARATOR

In general the operation of this unit will require maintenance in three areas; the Strainer, Bag Filter and Membranes. Any change in unit operation will be caused by the fouling of one of the above. There are three indicators provided which will allow the maintenance staff to determine what maintenance is required.

1) Vacuum Gage - mounted on the Primary Separator.

2) Pump Loop Pressure Gage - mounted between the Pump and Membrane Housing.

3) Flow Meter - mounted in water discharge piping.

The action corresponding to each of these indications is given below:

Indication	Action Required
High Vacuum	Check inlet strainer Check Bag Filter
Low Output, normal pump loop & tank vacuum	Wash Membrane

7.1 DETERGENT WASHING

The basic rule of washing Membranes is to always use the most gentle method which will do the job. Following this basic guide will minimize the chance of damaging the membrane due to an error in selection of a cleaning agent and will ensure the longest service life for the membranes.

7.1.1 BASIC STEPS

a) Washing involves repeated steps of filling, draining and rinsing as described below. During each step, set valves to the positions indicated in Schematic Piping Diagram P2 - Attached.

b) To drain the pump loop, press the Power OFF pushbutton, set valves, set the Selector switch to DRAIN/WASH and press the Power ON pushbutton.

The Vent Valve will open to allow the Pump to take suction. The Membrane Housing, Resevior and Piping will be pumped out in about 20 seconds. When finished, press the Power OFF pushbutton.

c) Adding Detergent; The amount of Membrane Cleaner required for an efficient wash is specified below. Less is not enough. More is not needed.

Gallon	0.6	Use one measure ONLY. With the Pump Loop empty
Cups	9.6	open the Funnel Valve and add detergent. Close
Quarts	2.4	the Funnel Valve and fill Pump Loop with water.

d) FILL: To fill the Pump Loop, set valves per the table, set Selector Switch to FILL and press the Power ON pushbutton.

As the Piping, Reservior and Membranes housing fill, the Vent Valve will allow the entrained air to escape. When the Pump Loop pressure gage stabilizes at 15 PSI, the Pump Loop is filled. Press the Power OFF pushbutton.

e) WASH: After adding the membrane cleaner/detergent, set valves per the table, set Selector Switch to DRAIN/WASH and press the Power ON pushbutton. Let the unit run on WASH for about five minutes. Then, turn the Selector Switch to FILL and top off the Pump Loop. This may be required to eliminate air from the Pump Loop which was contained in the detergent foam. Restart the WASH. As the wash proceeds, the energy introduced by the Pump will cause the temperature of the washwater to rise. A wash temperature of 100 to 120 degrees F. is normal.

A wash of 60 minutes will be adequate for regular cleaning. The RINSE process is the same as WASH, EXCEPT no Detergent is required. Normally a 5 minute rinse is all that is required.

7.1.2 Water

Even if seawater is used for ejection of oil, fresh water MUST be used for washing the membranes.

7.1.3 Additives

If the foulant resists removal, Membrane Cleaner can be used together with caustic. A detergent wash at pH 12 is extremely effective at removing paraffin and like materials from the membrane. Always, use the pH test kit to verify the amount of caustic to be added. WARNING: CAUSTIC IS DANGEROUS. USE EYE PROTECTION , GLOVES AND PROTECTIVE CLOTHING. HANDLE WITH CARE AND FOLLOW ALL INSTRUCTIONS CONTAINED IN MATERIAL SAFETY DATA SHEET.

7.2 Acid Washing

General. If dissolved minerals remain in solution they will pass through the membranes. If they precipitate out in solid form, some of the precipitate will coat the membranes and reduce flow. These minerals can be washed off with acid. For materials and procedure please refer to the Operating Manual. The Operating Manual is located in the REDRI Library , Building 5.

7.3 LAY UP

When temperatures are above freezing the following steps should be followed; 1) Clean the Membranes, and eject all oil from the Primary Separator. 2) Refill with water so that the Membrane Housing is full. The Membranes must be kept wet.

If temperatures fall below freezing 1) Clean the Membranes and eject oil from the Primary Separator. 2) Drain the Primary Separator and all Piping using the Pump. 3) Close all valves except the Pump Discharge Valve to the Membrane Housing and the Wash Bypass Valve. 4) Using the Funnel, fill the Pump Loop with a mixture of 50% permanent antifreeze and water. For this model S-3 the total approximate amount of mixture required is: 30 gallons. 5) Turn the Selector Switch to Wash and run the Pump for a few minutes to thoroughly mix the antifreeze with the water. 6) Turn all switches to OFF and close all valves. 7) The antifreeze mixture can be left in the system when it is started up after the lay up period is over.

7.4.0 SAMPLING

To take a Sample; Set the Pump selector switch to RUN. Wait sixty seconds. Flush the sample cock for a few seconds before taking the sample. Use a clear and clean glass jar. Jars can be obtained in building 6 at REDRI, from the Damage Control Officer or Hazardous Material Controller.

Visual Analysis; If the separator is processing chemical emulsions, the sample may be cloudy due to the presence of detergent in the water. Otherwise the water should be clear.

Allow the sample to stand for 15 minutes. Any oil should rise to the surface during this period. Although only laboratory analysis is certain, the following rough guide can be used during operations as an indicator of proper system function.

a) Solid film of oil across surface = oil content 10 PPM or higher.

b) Isolated patches of thin film across surface = normal permeate of approximately 5 PPM or lower.

c) No oil visible or in only pinpoints = probably under 2 PPM.

THIS IS A GUIDE ONLY. THE DISCHARGE MUST BE ANALYZED IN ACCORDANCE WITH THE RIPDES PERMIT # RI0021539. Laboratory Analysis must be conducted for this discharge , designated outfall 004 of the Permit.

7.5 LABORATORY ANALYSIS

Effluent limitations are set forth in the RIPDES Permit #0021539 at page 4. Monitoring requirements apply separately to each unique cleaning operation.

If more than one tank or compartment is being cleaned and that water does not mix with water in other tanks or compartments, then that tank must be monitored as a separate discharge. The effluent limits for each discharge as established by the Permit MUST NOT exceed 15 mg/l. Therefore, if the condition of the visual sample indicates condition (a) contact the Hazardous Material Controller or Damage Control Officer AT ONCE. Use radio contact if available or Dial "0". If the visual sample indicates conditions (b) or (c) operations may continue.

TROUBLESHOOTING

Most of the trouble you will encounter will be caused by the following installation and operation problems:

1) Low input due to heavy solids loading on an inlet strainer not intended for heavy loading.

TO RESOLVE: Suction level may be too close to collection tank bottom. Tank may require desludging. Additional solids removal eqiupment may be required. Contact FAST Systems for assistance.

2) Rapid falloff in throughput due to fouling of inlet Strainer and Membranes by bacterial slimes.

TO RESOLVE: Shock the Collection Tank with five (5) gallons of laundry bleach per 1000 gallons of water actually in tank at time of dosing. Then add approximately two tenths (0.2) gallons of laundry bleach every day to maintain a small chlorine residual in the permeate. Do Not overchlorinate! If this is a recurring and common problem, contact the manufacturer.

3) Rapid fall off in throughput due to processing a large scum and oil layer in the Collection Tank. Often, considerable separation takes place in large Collection Tanks.

TO RESOLVE: This layer and the oil above it should be drained separately and not run through the unit. It is unlikely that the unit will be able to dewater the oil any further.

4) Entrained Air Light always on. You have a vacuum leak somewhere.

TO RESOLVE: First, make sure all fittings are tight and properly sealed. Check the installation against the drawing. The most common leak is through the Oil Discharge Valve failing to seat properly. A few feet of head above the check valve helps its seal and remain sealed. If head room is not available contact manufacturer for recommendations on alternative valves.

5) Excessive water in the dirty oil tank.

TO RESOLVE: First, check the installation drawing. The most common cause is water siphoning through the unit and directly into the tank. Check and clean the ground. Installation piping is the most likely cause. Contact the manufacturer.

6) Oil in the Permeate.

TO RESOLVE: Make sure the unit has run a while. Once in a while a tiny amount of oil will collect in the back side of the membranes and burp when the pump starts. Check and replace all O-rings in Membrane Housings. Don't be in a hurry to replace the membranes. Nine times out of ten they are not the problem.

8.0.0 MANUFACTURERS INFORMATION

For additional information contact:

FAST Systems Inc.
1717 Sublette Avenue
St. Louis, MO 63110

Telephone: (314) 781-3278

Telex: 44-7224

Fax: (314) 781-5568

The manufacturer maintains complete records of all units and will be pleased to answer your questions or assist you at any time. They also maintain a complete inventory of repair parts, Membrane Cleaner and Acid Wash. Qualified Service Personnel are available.

In-house, in building 5, the REDRI Library has a comprehensive Operating Instructions and Maintenance Manual. For drawings and detailed information not contained in this Maintenance Plan consult the manual.

APPENDIX F

LETTER FROM RIDEM TO ROBERT DERECKTOR DESCRIBING FACILITY INSPECTION, MAY 1983

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
75 Davis Street
Providence, R.I. 02908

6 May 1983

Mr. Robert E. Derecktor
Robert E. Derecktor of Rhode Island, Inc.
Coddington Cove
Middletown, RI 02840

Dear Mr. Derecktor:

This letter will serve to summarize the results of an inspection I conducted of your facility on 2 May 1983, in response to an anonymous complaint received by this office. Specifically:

1. Oil leaking from a transformer west of building 6 - No evidence was found of any transformers immediately west of building 6. The complainant may have been referring to water condensate under the liquified gas tanks.

2. Asbestos pipe insulation at end of Peir 1 - This material has apparently been removed, in compliance with our regulations. (Manifest numbers 8200 and 8201).

3. Covered-over oil-filled pits south of building 234. No evidence was found of this.

4. Oil-filled pits north of building 42 - Two large pits filled with liquid were found at the northeast corner of building 42. It was determined that this material was liquid pumped out of the dry dock wells; consisting of rust flakes, a tar-like preservative, and water. This material is being stored to allow the solids to settle and/or evaporate, thereby reducing the total volume which must be disposed. You should take a representative sample of this material, and have it tested for the following metals according to the EPA Extraction Procedure Toxicity test-arsenic, barium, cadmium, chromium, lead, mercury, copper, and zinc - and flammability. The sample should have the expected water content of the material after settling/evaporation. The results of this test will determine whether the material is a hazardous waste, and how it should be handled.

   Five drums filled with waste oil surrounded by oil-contaminated soil were also found in this area, but we believe those to be the responsibility of Coddington Ice Company.

The above-mentioned lab analysis results should be submitted to this office by 31 May 1983. If you have any questions, please call me at 277-2797.

Sincerely,

Thomas Epstein, Engineer
Division of Air and Hazardous Materials

TE/km

Phone Conversation 4/29/83 T. Epstein and Marty Dwyer, NETC 10 a.m.

I called Mr. Dwyer for information about an annonymous complaint we received regarding the dumping of oily sludge into pits by Derecktor Shipyard (copy attached). Mr. Dwyer checked with someone and called back. His informant substantially confirmed the complaint. Specifically:

1. There is oil in pits north of building 42.
2. There was a pit with oil in it south of building 234, which was later covered over.
3. There is oil leaking from transformers west of building 6.
4. There is pipe insulation (asbestos?) at the end of Pier 1.

I talked to Water Resources, and Don Squires and I will visit the site on 5/2.

Thomas Epstein, Engineer
Division of Air and Hazardous Materials

RIXE000485

Environmental Mgt. Dept.
83 Park Ave.
Prov. R.I

To whom It may concern,

It has been brought to my attention that Robert E. Derector shipyard in Middletown Rhode Island has been and is envolved in ilegal dumping of hazardous waste. An outside firm has been contracted to pump out oily sludge from there property and has disposed of this waste in open pits less then 300 feet from open water of Narragansett Bay.

I am reporting this in hope of your department to put a stop to this polution. Thank You

A concerned citazen

F-4

RIXE000486

APPENDIX G

ANALYSIS OF SAND BLAST GRIT BY DERECKTOR

Dolce, Spirito & Associates, Inc.

ENGINEERS • CONSULTANTS • SURVEYORS

7 Belver Avenue, Room 210
Quonset Point, Rhode Island 02852

Telephone: (401) 294-339

August 20, 1984

RECEIVED
AUG 24 1984

Mr. Thomas Michel, Engineer
US EPA
JFK Building
Boston, MA 02203

Re: Derecktor Shipyard - Analytical Results

Dear Mr. Michel:

Enclosed please find a copy of the latest testing results of the sand blast grit pile at Derecktor.

Based on the lab report, the material is non hazardous under current regulation.

Please give me a call if you have any questions.

Very truly yours,

Thomas J. Dolce, P.E.
Principal Engineer

TJD/pb

Enclosure

cc: J. Spirito
F. Ottilige
T. Epstein, DEM

Chemical Waste Management
Of Massachusetts, Inc
Five Strathmore Road
Natick, MA 01760
617/431-7942 617/655-8860

REPORT OF ANALYSIS

Sample Ident./Parameter: Composite of Waste Grit

Dolce, Spirito and Associates, Inc.
7 Belver Avenue, Room 210
Quonset Point, Rhode Island 02852

Date Received: July 1984 Sampling

Attn: Mr. Thomas Dolce

CWM Lab #: 12350

Re: Robert E. Derecktor of Rhode Island, Inc.
Middletown, RI
Analysis of Waste Samples

P. O. #: R4-2147

Parameter	Sample Identification Composite of Waste Grit
EP Toxicity	
Arsenic*	<0.002
Barium *	0.3
Cadmium*	0.03
Chromium*	<0.05
Lead*	1.1
Mercury*	<0.0002
Selenium*	<0.002
Silver*	<0.02

1. The sample was evaluated by the EPA's EPA Toxicity method as described in "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods," Office of Solid Waste, U. S. EPA, Washington, D.C. SW-846-1982.

Grit Pile Sampling Procedure

The pile was gridded, using approximately three foot distances between grid lines. A 1 1/4" ID pipe was driven through the pile at each grid line intersection. The individual samples taken in this manner were then emptied into a 55 gallon drum and thoroughly mixed. A composite of the mixture was then transferred to a five gallon pail. The pail content was thoroughly mixed and an aliquot taken for the EP Toxicity test.

Notes

Per/Date: David E. Newton 7/31/8

David E. Newton
Laboratory Supervisor

A SUBSIDIARY OF CHEMICAL WASTE MANAGEMENT, INC.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

INTER-OFFICE MEMO

TO: Thomas Getz, Acting Chief
Division of Air & Hazardous Materials
DEPT: Department of Environmental Management

DATE: 24 June 1985

FROM: Stephen Majkut, Principal Engineer
Division of Air & Hazardous Materials
DEPT: Department of Environmental Management

SUBJECT: Black Beauty and Manifesting at Derecktor Shipyard

I did some research on the toxic effects of Berylliun, which I understand is present in Black Beauty. The available data indicates Berylliun is rather toxic from inhalation and skin contact. There were no data on oral toxicity. Attached is an analysis of the Black Beauty waste at Derecktor. The material tested is not a hazardous waste, although lead was found at 1.1 ppm (5 ppm is our limit).

In response to our inspections of April 1983, Derecktor began serious efforts to comply with our regulations in about May 1984. Regular manifesting of waste started about August of 1984.

Waste regulated generally are oil, paint, paint thinner, and stripping solution. The manifests have been fairly regulated since August 1984.

SM/jap

attch.

cc: Tom Wright

APPENDIX H

CONTAMINATED SOIL EXCAVATION CONTAINERIZATION AND DISPOSAL PLAN

CONTAMINATED SOIL EXCAVATION
CONTAINERIZATION AND DISPOSAL PLAN
FOR
ROBERT E. DERECKTOR, INC.
MIDDLETOWN, RHODE ISLAND

PREPARED FOR:

ROBERT E. DERECKTOR, INC.
CODDINGTON COVE
MIDDLETOWN, RI

PREPARED BY:

DOLCE, SPIRITO AND ASSOCIATES
ADMINISTRATION BLDG. 7, RM. 210
QUONSET POINT, RI 02852

REVISED JULY 19, 1984

CONTAMINATED SOIL EXCAVATION
CONTAINERIZATION AND DISPOSAL PLAN

Robert E. Derecktor of Rhode Island, Inc.
Coddington Cove
Middletown, Rhode Island

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CONTAMINATED SOIL EXCAVATION, CONTAINERIZATION AND DISPOSAL PLAN

Robert E. Derecktor of Rhode Island, Inc.
Coddington Cove
Middletown, Rhode Island

1.10 INTRODUCTION

Robert E. Derecktor of Rhode Island, Inc. (REDRI) operates and maintains a shipyard at Coddington Cove, Middletown, Rhode Island. REDRI manufactures, fabricates and repairs ships at this facility. The facility generates various paint, solvent and oil wastes.

REDRI had been storing these wastes in 55 gallon drums and 4 gallon containers in two primary areas. These areas are referred to as the "north" and "south" storage areas. The north storage area is located north of the firm's ship repair yard. The south storage area is located south of the firm's main assembly building.

During recent inspections of the firm by USEPA and RIDEM, it was determined that some of the containers have leaked their contents onto the ground surface. Subsequently, EPA ordered the excavation and disposal of soil in the two storage areas onto which waste had been spilled.

Wastes stored in these areas were tested and identified to include: waste oil, oily water, paint thinning solvents, and paint sludges. Hazardous properties include flammability and E P toxic lead and chromium. Waste oils were found to be free of PCB contamination. (The results of testing are enclosed in Appendix A).

This plan will describe the procedures for the excavation and disposal of contaminated soil in these storage areas. This plan (revised from original May 25, 1984 plan) includes specific recommendations made by USEPA/RIDEM officials at a joint meeting at the site on 7/13/84. The EPA/DEM officials were concerned that the plan must include core samples at several locations and to depths greater than originally proposed; that these core samples be scanned in the field (with a portable analyzer (e.g. photoionization detector) to determine if contamination zones exist; and that sampling of contamination zones be carried out for volatile organic compounds and metals. These and other concerns voiced by the USEPA/RIDEM officials have been incorporated into this plan.

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1.20 SOILS SAMPLING AND TESTING

1.21 PROCEDURES OUTLINE:

1) Survey each area to define limits of possible contamination (completed see Section 1.22).
2) Describe and locate proposed boring locations (completed see Section 1.23).
   a) Provide boring at center (area of suspected highest contamination). Establish water table depth below storage areas.
   b) Provide a boring outside of the area of suspected contamination to establish background conditions. (To be selected in field by supervising engineer.)
3) Record soil descriptions during boring (excavations) (see Section 1.24).
4) Scan all soil columns with Photoionization Analyzer. Establish depth of volatile organics contamination.
5) Metals Sampling:
   a) From both the background excavation and the center (area of highest contamination) boring locations, obtain composite soil samples of each one foot interval to a depth of three feet, then composite each two foot interval to the water table (in background excavation - stop at three feet).

b) Obtain samples of all zones of visually discolored or stained (signs of suspect contamination) soils for EP toxic metals analysis - from all soil cores (split spoon samples and excavation faces).

c) Obtain soil samples (for EP toxic metals analysis) in the areas identified as surface sampling Sites 1 and 2 (see Figures A and B). These areas were identified by T. Michel of the USEPA. Samples are to be obtained from the upper six inches of unconsolidated soil - compositing three samples over the area of suspected contamination.

6) Volatile Organics Sampling:

a) Obtain a composite sample from the background excavation - combining soil from each identified soil layer.

b) Obtain samples of soil if volatile organic levels are detected (with photoionization analyzer) at depths exceeding two feet. Sample the zones of contamination.

c) Obtain a sample of soil from all zones of heavily contaminated soil as identified with the photoionization analyzer.

7) Analysis of Collected Samples:

a) Analyze all soil samples (metals) obtained from the center boring location (N1 and

S1), the background boring (compositing the individual samples from background boring into one for analysis) and the two surface sampling sites (#1 and 2) for the E P toxic metals listed in Table 1.

b) Analyze soil samples (metals) identified as being visually contaminated for the E P toxic metals listed in Table 1. Analysis to be performed to define the limits of required excavation. Testing may be conducted in staged manner, under supervising engineers direction to limit the number of tests which must be run. All metals samples will be saved for additional analysis until a soil removal plan is approved by the USEPA and RIDEM.

c) Analyze soil samples (volatile organics) from depths greater than three feet, where the photoionization analyzer has indicated levels above instrument detection ~~(0.1~~ 1.0 ppm). Selection of samples to be analyzed to be made by supervising engineer based upon a review of photionization analyzer results (see discussion in Section 1.25). Test results to be submitted with recommendation for soil removal to USEPA/RIDEM.

TABLE 1

Soil Excavation Monitoring Parameters(a)

Parameter(b)	Analysis Method(c)	MAXIMUM ACCEPTABLE CONCENTRATION Remaining Soil (ppm)(d)	Removed Soil (e)
Tetrachloroethylene	8010 or 8240	.2	(e)
Trichloroethylene	8010 or 8240	.8	(e)
1,1,1-Trichloroethane	8010 or 8240	10	(e)
Methylene Chloride	8010 or 8240	15	(e)
Methyl Isobutyl Ketone	8015 or 8240	(assumed .2)	(e)
Benzene	8020 or 8240	.7	0.1%
Toluene	8020 or 8240	34	(e)
Xylene	8020 or 8240	62	(e)
Methyl Ethyl Ketone	8015 or 8240	75	(e)
pH	9040 (f)	4-11	3-12(g)
EP Toxicity for:	2.1.4 & 1310	As mg/l in extract	As mg/l in extract
- Arsenic	7060 or 7081	(i)	5.0
- Barium	7080 or 7081	(i)	100.0
- Cadmium	7090 or 7091	(i)	1.0
- Lead	7420 or 7421	(i)	5.0

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TABLE 1 (continued)

Parameter(b)	Analysis Method(c)	MAXIMUM ACCEPTABLE CONCENTRAT Remaining Soil (ppm)(d)	Stockpiled Soil (e)
- Chromium	7190 or 7191	(i)	5.0
- Mercury	7470 or 7471	(i)	0.2
Flash Point	2.1.1 & 1010 or 1020	No Flash	Over 100 °F

Table 1 - Footnotes

(a) Monitoring parameters may be modified if anything unusual (PCB's, cyanides, etc.) are detected upon the completion of testing of container contents by Chemical Waste Management, Inc.

(b) Parameters were selected by reviewing wastes expected to be present and material Safety Data Sheets provided by Derecktor, in conjunction with the list of hazardous constituents listed in Appendix VIII of 40 CFR 261.

(c) Analytical methods as delineated in EPA's "Test Methods for Evaluating Solid Waste", SW-846, 2nd Edition, July 1982.

(d) Levels specified are the long term (years) (except for MEK - which is a 10 day exposure figure) Health Advisory Limits multiplied by a factor of 100. Source of Health advisory Data - personal communications with RI Health Dept. Officials. The Health Advisory's were multiplied by a factor of 100 using the same reasoning applied by the USEPA in developing the EP toxic limits. A limit was not available for methyl isobutyl ketone.

Levels for metals from 40 CFR 261.24, Table 1.

pH range as deemed relatively safe for short term human contact.

Table 1 - Footnotes (continued)

(e) Total of organics (except benzene) must not exceed a total 1%. This limit selected since the "Rhode Island Extremely Hazardous Waste Rules and Regulations" generally specify a 1% concentration limit for certain similar organics.

For Benzene the above referenced regulation specifies a limit of 0.1%.

(f) pH of solid samples will be determined by mixing 50% by weight with distilled water, and measuring pH on aqueous portion.

(g) pH range of 3-12 selected based on definition of a corrosive waste as provided in RI Generator Rule 1.34(b).

(h) Criteria for flash point limit of 100 ^{o}F based on definition of a slightly flammable solid and/or semi-solid as provided in RI Generator Rule 1.33(b).

(i) See Section 1.30 (2). Soil layers containing metal concentrations above background sample levels or primary drinking water standards whichever is greater will be removed.

8) Follow proper chain of custody procedures and sample preservation procedures on all samples (see Section 1.26).

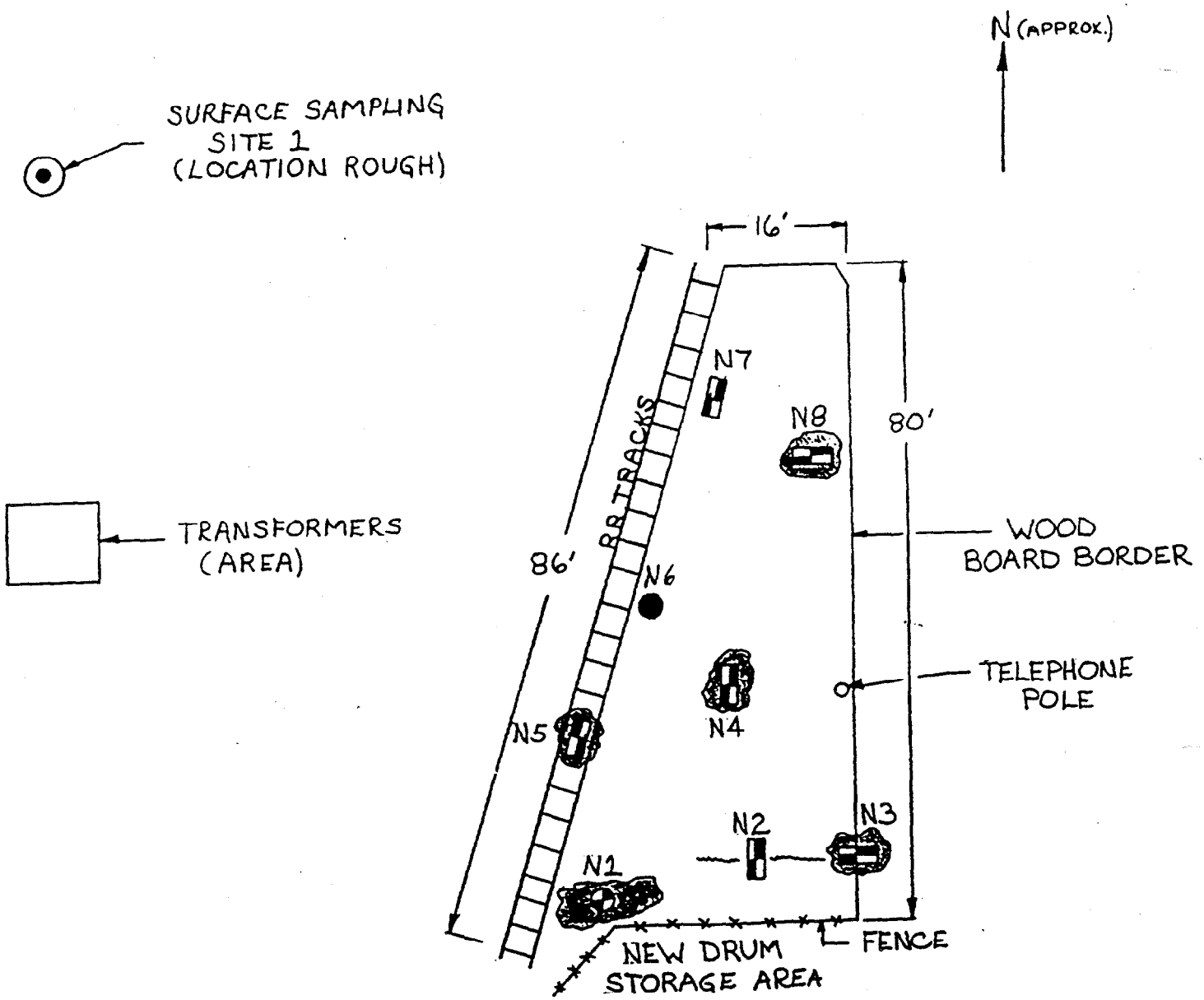
9) Submit all test results to USEPA/RIDEM with recommendations for extent of soil removal (see Section 1.30).

10) Following acceptance of recommendations (subject to any necessary revisions), supervise soil removal and proper disposal.

1.22 LIMITS SURVEY

On July 13, 1984, engineers from this firm and USEPA officials (accompanied by RIDEM and Derecktor personnel) taped out the limits of possible contamination. These areas are shown in Figures A and B for the North and South Storage Areas respectively. The overall location of the storage areas on the facility are shown on the enclosed Site Plan (Figure 1.2; Facility Layout and Evacuation Plan).

The delineated investigation areas extend beyond the areas where containers were located when Derecktor was cited. In the South Storage Area, containers of waste were located directly on the ground surface in a rectangular area measuring approximately 22 feet by 23 feet. The surveyed limits are about 80 x 50 feet. In the North



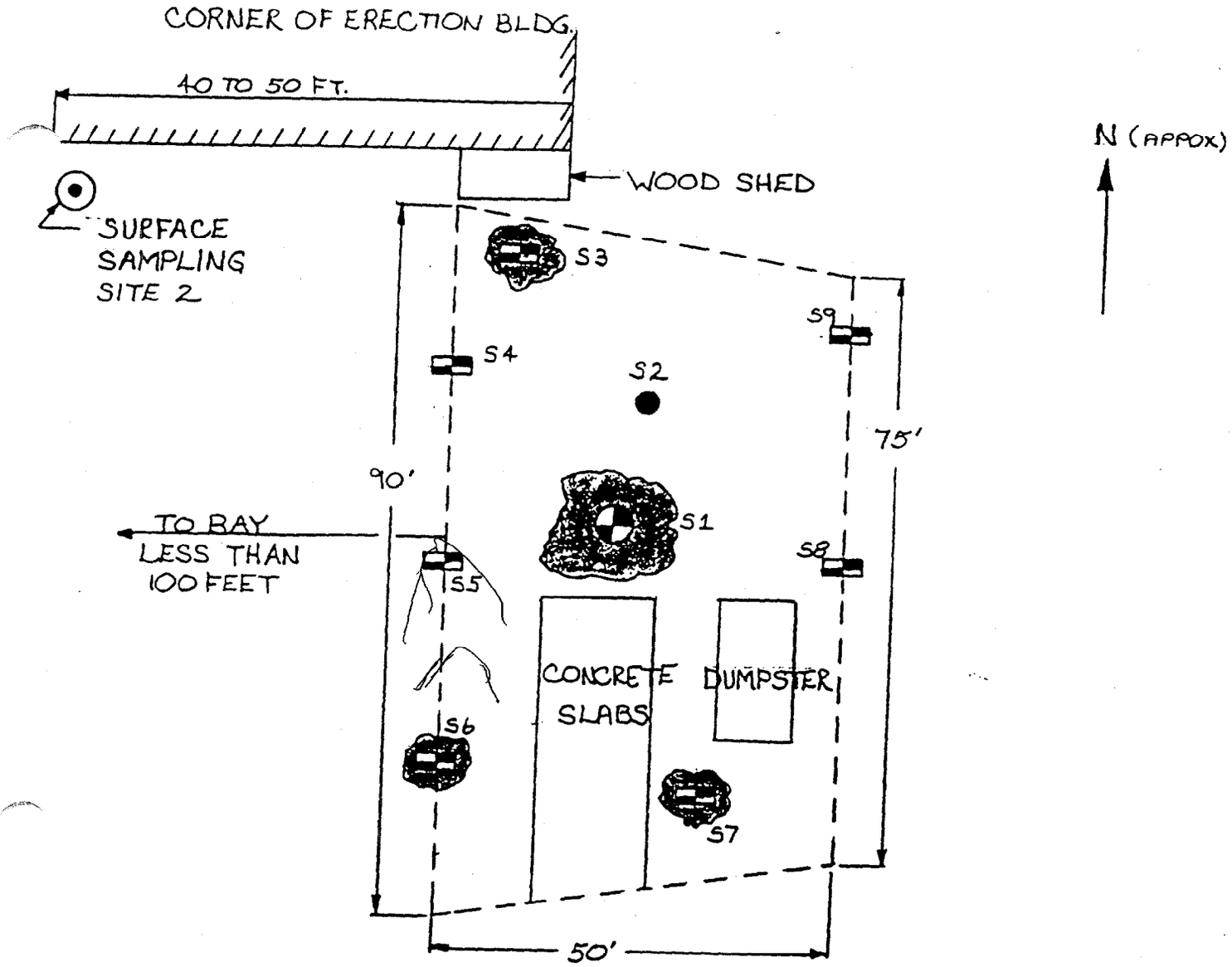
NOTES:

1) Areas shown is that identified as limits of current investigation. Former drum storage was within smaller area within area delineated.
2) The location of the storage (former) area on the facility is shown on Figure 1.2 (Site Plan).
3) Boring locations are described in text of soil plan.

LEGEND:

- PROPOSED BACKHOE BORING
- PROPOSED SPLIT SPOON BORING
- VISIBLE DISCOLORATION
- CRACK IN ASPHALT
- PROPOSED BACKHOE BORING AND OBSERVATION WELL

FIGURE A: FORMER (NORTH) DRUM STORAGE AREA - LOCATION OF SOIL BORING (PROPOSED)



NOTES: SAME AS FIGURE A
LEGEND: SAME AS FIGURE A

FIGURE B: FORMER (SOUTH) DRUM STORAGE AREA - LOCATION OF SOIL BORINGS (PROPOSED)

Dolce & Spirito

Storage Area, containers (of waste) were located on asphalt in a triangular area measuring 59 by 47 by 75 ft. The surveyed limits are about 50 x 80 x 86 feet.

Two additional minor locations have been identified for surface sampling during the July 13, 1984 joint site survey. These are shown as Surface Sampling Sites 1 and 2 on Figures A and B respectively.

1.23 PROPOSED BORING LOCATIONS AND DESCRIPTIONS

The location of the proposed borings are shown in Figures A and B and are described in Table 2. Two types of boring methods are proposed: use of a split spoon sampler (with hollow stem auger drilling rig) and the use of a backhoe to excavate a broad section of soil which will then be exposed with a shovel or spade.

The split spoon sampling locations (one for each storage area) were selected in the areas suspected to have the highest levels of contamination (see figures for locations). The hollow stem auger will also be used to install a shallow observation well (2" PVC - slotted) to establish the depth to water table beneath each site. The use of the hollow stem auger and split spoon sampler will allow for sampling to depths greater than would be

TABLE 2

DESCRIPTION OF BORING LOCATIONS

Identification #	Type	Location (see Figure A and B)	Required Depth
< < < < < < < NORTH STORAGE AREA > > > > > > >			
N1	Split Spoon[a]	In center of darkened oil stained soil. South east portion of delineated area (whole area)	To the water ta surface.
N2	Backhoe	Across crack in asphalt	Minimum 3 ft.[b]
N3	Backhoe	Along rear of delineated area adjacent to crack and in area of soil staining.	Minimum 3 ft.[b]
N4	Backhoe	Center of delineated area-asphalt surface heavily stained.	Minimum 3 ft.[b]
N5	Backhoe	Between railroad lines in area of soil staining.	Minimum 3 ft.[b]
N6	Observation Well and Backhoe	As shown in Figure A	Minimum 3 ft.[b]
N7	Backhoe	As shown in Figure A	Minimum 3 ft.[b]
N8	Backhoe	As shown in Figure A in the area of surface staining.	Minimum 3 ft.[b]
< < < < < < < SOUTH STORAGE AREA < < < < < < <			
S1	Split Spoon	In center of area known to have had leaked material present.	To the water table surface.
S2	Observation Well and Backhoe	As shown in Figure B	Minimum 3 ft.[b]

TABLE 2 (continued)

Identification #	Type	Location (see Figure A and B)	Required Depth
S3, S7 S6	Backhoe	As shown in Figure B in areas of stained soils.	Minimum 3 ft.[b]
S4, S5, S6, S8, S9	Backhoe	As shown in Figure B.	Minimum 3 ft.[b]

Footnotes:

a - The excavation and scanning is to be repeated in this area using the backhoe to a depth of 3 ft. to verity it is at least equivalent.

b - Minimum depth of 3 feet - greater depths required where contaminati[illegible] detected below 1.5 foot level.

possible with the backhoe (necessary <u>if</u> the water table is <u>not</u> encountered at less than six foot depths - due to practical limitations imposed by handling of excavated volume).

Backhoe excavations are to be made in all other areas shown in the figures and described in Table 2. These excavations will be approximately three feet wide and five to six feet long. All excavations will be made to at least three feet and to greater depths where the photo-analyzer detects volatiles within eighteen inches of the bottom of the excavation. Excavation will not be considered complete until at least 1.5 feet of clean soil is detected (with minimum of three feet excavated). Locations were chosen to include all areas which showed signs of heavy soil staining (observed with USEPA officials).

1.24 SOIL DESCRIPTION/BORING LOCATIONS:

The supervising engineer shall record complete soil descriptions for each boring location. At a minimum this shall include soil color, organic material content, odor, grain size (e.g. fine sand, gravel with percentages of each), and compaction. Any unusual patterns of staining shall be recorded. Photographs will be taken of soil profiles wherever light conditions permit.

Depth to the water table shall be established through the installation of an observation well at locations #N6 and #S2. The reading (depth from ground surface) shall be made at least forty eight hours after well installation.

The supervising engineer shall survey the precise location of borings from a fixed benchmark(s) and shall prepare an accurate scale plan following all testing and sampling.

1.25 SCANNING FOR VOLATILE ORGANICS

A portable photoionization analyzer equipped with a lamp capable of detecting at least the volatile parameters listed in Table 1 (contaminants of concern at this site) shall be used to scan all soil profiles. The instrument "typical limits of detection are 1.0 ppm" and the "useful range typically extends to 2,000 ppm" according to the instrument mfg. (hnu systems, inc.; Model Pl 101).

Soil sampling equipment (backhoe, split spoon sampler, shovels, etc.) which will come into contact with the soil to be scanned shall be checked with the analyzer to ensure they are "clean" (scanned - below detection). If equipment is not "clean" a steam cleaning unit will be used to decontaminant the equipment prior to use.

The scanning of split spoon samples shall be completed as follows:

1) Clean sampler shall be driven to depth limit of spoon. Supervising Engineer to record depth (sampling interval).
2) Immediately upon splitting open sampler, the entire sample length shall be slowly scanned. (Instrument response: <5 sec to 90% full scale).
3) Maximum instrument readings in each half foot interval shall be recorded.
4) Following recording of readings (and soil description), required samples shall be taken (see Section 1.21 (5)) and the sampler shall be emptied and wiped clean with a clean cloth (clean - zero reading on scanner and free of any visually contamination).
5) Auger out hole to depth at which sample was taken and prepare split spoon sampler.
6) Continue sampling and scanning as in above steps - to depth one foot below the water table (saturation). Auger to three feet below apparent saturation and set observation well screen.
7) Record depth at which scanner no longer detected volatiles (less than 1.0 ppm).

The scanning of <u>backhoe</u> <u>excavation</u> shall be completed as follows:

1) Verify that sampling equipment which will contact soil to be scanned is clean (backhoe bucket will not contact soil to be scanned). Steam clean equipment if scanner detects volatiles.
2) Remove the soil in half foot layers - placing the removed soil on an impervious surface (e.g. plastic). cover removed piles to prevent blowing of material or runoff if rainfall occurs.
3) Segregate soil removed from each half foot layer - to allow for placing the soil back in the excavation after scanning and sampling.
4) After a three foot depth has been reached, remove (using clean sampling equipment) approximately two inches of soil from the face of the excavation side. Do this one foot depth intervals at a time, across the length of the excavation face. Ensure equipment used to remove the soil face is clean before proceeding to next (lower) one foot interval.
5) Scan each one foot depth interval slowly in at least three locations (vertical profiles) across the face of the excavation.

Record maximum instrument readings in each half foot interval.

6) Obtain all required samples as described in Section 1.21 (5) and (6) based upon the analyzer scan and visual profile inspection. A soil augar or coring device will be used to obtain core samples from the excavation face.

7) Continue sampling and scanning until at least eighteen inches of continuous clean soil has been encountered. Clean refers to zero visual or analyzer detected zones of contamination.

8) Record depth at which scanner no longer detected volatiles (less than 1.0 ppm).

9) Each excavation location will be covered with a plastic covering after all sampling has been completed.

1.26 SAMPLING AND ANALYSIS PROCEDURES (QA/QC):

1.26.1 SAMPLING

All samples are to be collected and handled in accordance with the Environmental Protection Agency's criteria documents, SW-846, "Test Methods For Evaluating Solid Waste" and SW-616, "Procedures Manual For Groundwater Monitoring At solid Waste Disposal Facilites" where applicable. All sample containers must be new and will be supplied by Dolce, Spirito & Assoc., Inc. Container type and sample preservation procedures are provided in Table 3, for the analytical parameters to be sampled for.

All samples will be labeled, sealed with a chain of custody tape, and cooled to 4 ^{o}C prior to its transportation to the laboratory in accordance with the applicable labeling, sealing and chain of custody procedures given in the above referenced EPA documents. Each sample will be accompanied by a chain of custody sheet as per EPA procedures. Field blanks will be carried to the site and analyzed with the actual samples (this will be done for volatile organics only).

TABLE 3

ENVIRONMENTAL SAMPLES
CONTAINERS AND PRESERVATION

Parameter	Container	Preservation
Volatile Organics (Priority Pollutants) Analysis-Soil Sample	Glass Containers with teflon lined screw caps.	Packed in ice or refrigerated at 4°C.
EP toxic metals - Soil Sample	Glass wide-mouth jar.	Non required

1.26.2 ANALYSIS OF SAMPLES

Collected samples are to be sent to a qualified lab. (recognized by RIDEM) for analysis in accordance with the procedures referenced in Table 1. Chain of custody procedures are to maintained throughout the transport and transfer to the laboratory. The laboratory shall analyze trip blanks (volatile organics). All laboratory testing will be in accordance with appropriate analytical methods indicated in, USEPA's, "Test Methods for Evaluating Solid Waste", SW-846, 2nd Edition, July 1982.

1.30 DETERMINATION OF EXTENT OF SOIL EXCAVATION REQUIRED

The results of soil scanning and testing shall be submitted to the USEPA (and RIDEM) and shall be accompanied by recommendations by the supervising engineer as to the required soil removal. The recommendations shall be based on the criteria described in this section. Soil excavation shall be carried out in accordance with the procedures described in Section 1.40 but shall only be started after USEPA/RIDEM written approval of the recommendations.

The recommendations for soil removal shall be made as follows:

1) All soil layers found to contain detectable levels (>1.0 ppm) of volatile organics (as detected on photoionization analyzer) shall be removed up to a depth of two feet.

2) All soil layers found to contain EP toxic metal concentrations above the background sample EP toxic metal concentrations or primary drinking water stds. whichever is greater shall be removed.

3) Samples from soil layers found to contain detectable levels of volatile organics on the photoionization analyzer below a 2 foot depth will be analyzed for the volatile compounds listed in Table 1. All soil layers found to have concentrations of these compounds in excess of the indicated values (100 x the Health Advisory - long term limit) in Table 1 shall be removed.

Note: If based upon the above criteria, the removal depths required exceed four feet, the supervising engineer may petition (USEPA/RIDEM) that the limits specified be revised, thereby revising the required extent of excavation.

Where patterns of contamination are highly irregular, the supervising engineer will use some practical judgement in developing the recommendation with respect to the excavation depths required across the site. All recommendations shall be subject to USEPA/RIDEM review and approval.

1.40 SOIL REMOVAL

All soil shall be removed under the review of the supervising engineer. The removal shall be carried out in accordance with the excavation plan (recommendations in accordance with Section 1.30 procedures) approved by USEPA/RIDEM.

All soil identified as a hazardous waste shall be stockpiled in a secure area (dust, runoff control and on an impervious base) prior to off-site transport. Hazardous wastes shall only be transported by a licensed transporter - to a permitted facility licensed to handle the waste material.

All other removed soil (not known to be hazardous) shall be stockpiled in an area designated for contaminated soil sampling and testing. A composite sample of each pile will be collected. The composite must be representative of the entire pile. This will be achieved by dividing the pile into a three-dimensional grid system with an aliquot obtained from the approximate middle of each grid segment. The actual number of aliquots will be determined based on the size of the pile. Generally however, the pile will be subdivided into grid segments of not more than 5 cubic yards of soil each.

Composited samples so obtained will be managed as described in Section 1.31, and analyzed for the

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parameters indicated in Table 1 under the heading, "Maximum Acceptable Concentrations - Stockpiled Soil". If all parameters tested for fall below those indicated in the table, the stockpiled soil will be considered to be non-hazardous and disposed of as a Rhode Island Solid Waste at a permitted sanitary landfill. If any of the parameters are exceeded, the stockpile will be disposed of as a hazardous waste at a permitted secure landfill or other acceptable facility. In the latter case, the soil would be shipped in lined and covered dump trucks permitted by RIDEM to transport hazardous waste.

1.50 STOCKPILE CONTAINERIZATION

Prior to commencement of soil excavation in either the south or north storage areas, an area adjacent to the particular storage area will be selected on which the excavated soil will be stockpiled. The base of the selected stockpile area will be provided with two layers of 6 mil thick continuous plastic liner.

Following each excavation operation, the excavated soil which has been placed on the double liner will be completely covered with a continuous (whenever possible) sheet of the same liner as described above. This cover will be weighted down to hold it in place, and will prevent precipitation from leaching any hazardous constituents from the excavated soil.

hazardous constituents from the excavated soil.

The stockpile will be so maintained until it has been sampled, tested and disposed of in accordance with Section 1.40.

1.60 SUPERVISION OF SOIL EXCAVATION, SAMPLING AND TESING

All phases of contaminated soil excavation, sampling and testing will be supervised by an independent registered engineer. USEPA and RIDEM will be notified prior to soil excavation and sampling so they can be present if they desire.

Following the completion of soil excavation and testing, the supervising engineer will submit a summary of all analyses and his/her certification that the work has been completed in accordance with this plan.

1.70 WORK SCHEDULE FOR SOIL INVESTIGATION AND REMOVAL AT THE SOUTH AND NORTH STORAGE AREAS

Proposed Schedule:

Day	Description of Activity
0	Notice of impending approval from USEPA/RIDEM subject to minor revisions. (requested ASAP)
7	Contact drilling rig firm (split sppon sampler) to arrange for start of soil

	sampling (two weeks notice required).
14	Start of soil sampling and testing.
28	Completion of soil sampling.
32	Completion of sample analysis by laboratory.
37	Submission of soil removal recommendations by Dolce, Spirito & Assoc., Inc. (DSA) to USEPA/RIDEM.
44	Anticipated receipt of USEPA/RIDEM acceptance of recommendations.
51	Start of soil excavation removal and disposal.
65	Completion of soil excavation removal and disposal.
70	Certification of completion by supervising prof. engineer.

It is believed that this is a reasonable estimate of the time which will be required to complete the work. If the soil investigation reveals little or no contamination, time frames may be greatly reduced.

APPENDIX I

RESULTS OF SOIL SAMPLING IN NORTH AND SOUTH STORAGE AREAS

Dolce, Spirito & Associates, Inc.
ENGINEERS • CONSULTANTS • SURVEYORS

7 Belver Avenue, Room 210
Quonset Point, Rhode Island 02852

Telephone: (401) 294-3391

NOV 6 1984

November 1, 1984

Mr. Thomas Michel
USEPA
JFK Building
Boston, MA 02203

Re: Robert E. Derecktor - Determination of Extent of Soil Excavation Required.

Dear Mr. Michel:

In accordance with the approved "Contaminated Soil Excavation, Containerization, and Disposal Plan" (dated Revised July 19, 1984; for R.E. Derecktor, Inc.), we are hereby submitting to your office the results of soil scanning and testing and our recommendations for soil removal. This letter is broken down into the following sections:

Basis for Recommendations, Soil Testing Methodology, Results & Recommendations.

Two sets of recommendations for soil removal are made in this letter, one based upon the specific criteria in the approved soil plan and the other based upon revised criteria discussed in this letter. In either case, the amount of excavation work required is limited, since the scanning and test results showed the soil to be virtually free of the suspected contaminants (the volatile organics and EP toxic metals listed in Table 1 of the approved plan, copy in Appendix A). Recommendations based on the approved plan criteria are given on page 14. The revised criteria recommendations are given on page 16.

If you require additional information or if a meeting would be helpful, in order to complete your office's review of these recommendations, please contact us.

Copies of all laboratory certificates are attached as Appendix B.

BASIS FOR RECOMMENDATIONS:

As stated in the approved plan (Section 1.30), the recommendations for soil removal were to be made as follows:

1) All soil layers found to contain detectable levels (>1.0 ppm) of volatile organics (as detected on the photoionization analyzer) were to be removed up to a depth of two feet.

2) All soil layers found to contain EP toxic metal concentrations above the background sample EP toxic metal concentrations or primary drinking water standards whichever is greater, were to be removed.

3) Samples from soil layers found to contain detectable levels of volatile organics on the photoionization analyzer below a 2 foot depth will be analyzed for the volatile compounds listed in Table 1 (copy provided with this letter in Appendix A). All soil layers found to have concentrations of these compounds in excess of the indicated values (100 x the Health Advisory - long term limit) in Table 1 (Appendix A) shall be removed.

The following note was provided to allow for revisions to these criteria:

"Note: If based upon the above criteria, the removal depths required exceed four feet, the supervising engineer may petition (USEPA/RIDEM) that the limits specified be revised, thereby revising the required extent of excavation."

In addition it was stated that, "Where patterns of contamination are highly irregular, the supervising engineer will use some practical judgement in developing the recommendation with respect to the excavation depths required across the site."

All recommendations were to be subject to USEPA/RIDEM review and approval.

SOIL TESTING METHODOLOGY

With the exception of some minor modifications in soil "testing" procedures, all of the procedures specified in the approved plan (Section 1.20) were followed. All modifications were done with USEPA review and approval. None of these changes were judged to effect the accuracy or effectiveness of the scanning and sampling program.

These modifications were, as follows:

1) A sample from surface sampling site 2 (see Figure B of approved plan) adjacent to the South Storage Area was not collected because a trailer has been located over the sampling location. This change in the plan was approved by the US EPA field representative.

2) Additional samples were taken from oil stained material on the surface of the asphalt from the North Storage Area at the request of the US EPA field representative. These new sample locations are shown on Figure 1 (attached) - identified as NSS#1M, N4M3, and NF#1M, respectively.

3) Due to the presence of a high voltage line under the north part of the North Storage Area excavation N7 was carried out adjacent to N6 (see Figure 1). This effectively eliminated the need for a second excavation next to N6 (see Page 1-13 of the plan). Therefore, only an observation well was installed at the N6 location.

4) Excavation N5 was carried out under an oil stained area along the edge of the railroad tracks rather than between the tracks (see Page 1-11 of the plan). Again this was approved of in the field.

5) At the final depths of excavations N1A, N3, and N5 (3.5, 4.5 and 5.0 feet respectively) the readings from the photoionization analyzer (P.I.), were over the specified criteria of 1.0 ppm.

   N1A testing was only conducted to confirm that the backhoe method was at least as sensitive as was the split spoon method. The adjacent bore hole (N1) was sufficient to establish the P.I. pattern, therefore it (N1A) was not extended to greater depths.

   N3 and N5 excavation was not extended as required by the plan, due to <u>practical limitations</u>. The quantity of soil removed became unmanageable given the restrictions imposed on its handling. A decision was made to first obtain the results of Volatile Organics Analysis to determine if the 1.0 ppm criteria was too low for the parameters of concern.

   If the Volatile Organics and EP toxic metals analysis showed the P.I. readings to indicate that any of the Parameters in Table 1 of the approved plan were <u>over the specified limits</u>, these excavations <u>would have had to be extended to</u>

NORTH STORAGE AREA

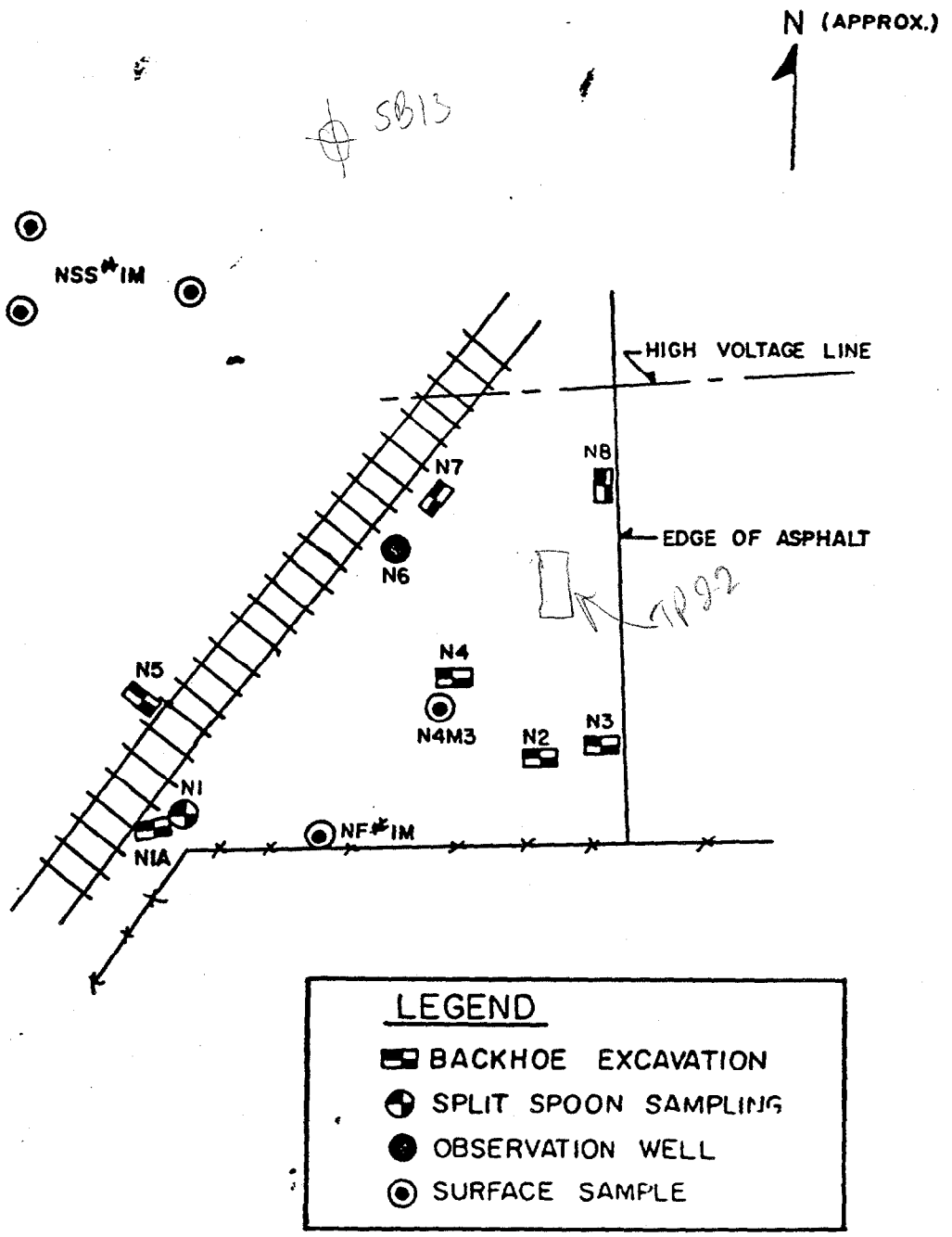

FIGURE 1:

LOCATION OF EXCAVATIONS, BORINGS AND SURFACE SAMPLES AT NORTH STORAGE AREA.

SCALE: 1" = 20'

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greater depths. If the analysis of volatile organics and EP toxic metals showed levels below the specified limits, there would be no need to extend these excavations. Preliminary tests had indicated that the tests would probably fall below the limits (Subsequent tests confirmed this - see results and recommendations).

RESULTS

NORTH STORAGE AREA

The location of the soil excavations, borings, observation well and surface sampling locations are shown in Figure 1. The results from field testing of the excavations and split spoon boring samples with the photoionization analyzer are summarized in Table 1. Only the highest readings from each excavation at the depth intervals shown are reported in Tabel 1. Also included in Table 1 are the depths from each excavation/boring at which samples were taken. A summary of the volatile organic results of all the soils analyzed in the North Storage Area are shown in Table 2. A summary of the E.P. Toxicity metal results from the soil samples obtained from the North Storage Area test holes are shown in Table 3.

The drilling logs and laboratory certificates of analysis are in Appendix B.

The water table was measured to be 13.4 feet below the top of the PVC pipe on 9/28/84. The top of the PVC pipe is three (3) feet above grade.

SOUTH STORAGE AREA

The location of the soil excavations, borings, observation well and surface sample are shown in Figure 2. The results from field testing of the excavations and split spoon boring samples with the photoionization analyzer are summarized in Table 4. Only the highest readings from each excavation at the depth intervals shown, are reported in Table 4. Also included in Table 4 are the depths from each excavation/boring at which samples were taken. A summary of the volatile organic results of all the soils analyzed out of the South Storage Area are shown in Table 5. A summary of the E.P. Toxicity metal results from the soil samples from the South Storage ARea and background excavation are shown in Table 6.

The drilling logs and laboratory certificates of analysis are in Appendix A.

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TABLE 1

SUMMARY OF SAMPLING AND
PHOTO IONIZATION ANAYLIS OF SOIL - NORTH STORAGE AREA

	EXCAVATION - LOCATIONS SHOWN ON FIGURE 1																	
	N1		N1A		N2		N3		N4		N5		N6		N7		N8	
Depth Interval	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**	P.I.*	Sample**
0'-0.5'	1.7	MA, VA	2.4		1.2		1.2		0.0	MA	15.0	MA, V	N R		0.0		0.0	
0.5'-1.0'	3.2	0'-1'	4.5		1.4		2.0	MA	0.0	0'	20.0	0'-0.5'	O E		0.0		0.0	
1.0'-1.5'	1.6	MA, V	8.0		1.0	M	1.8	0.5'-1'	0.0	M	19.6		M G		0.0		0.0	
1.5'-2.0'	0.1	1'-2'	4.0		0.4	0'-1'	4.0		0.0	0.5'-2'	19	M,V	E U		0.0		0.0	
2.0'-2.5'	0.3	MA, V	1.5	VA	0.6		2.0	VA	0.0		15	1'-2'	I		0.0		0.0	
2.5'-3.0'	0.1	2'-3'	1.0	2'-2.5'	0.4		2.8	2'-3'	0.0	M, V	19.8	M, VA	R		0.0		0.0	
3.0'-3.5'	0.8		1.2	VA			0.8	V		2'-3'	20	2'-4'	E					
3.5'-4.0'	0.3	MA		3'-3.5'			2.2	3'-4'			20		D					
4.0'-4.5'	0.0	3'-5'					3.0	V			8.5	M, V						
4.5'-5.0'	0.1							4'-4.5'			5.5	4'-5'						
5.0'-5.5'	0.5																	
5.5'-6.0'	0.2																	
6.0'-6.5'	0.3	MA																
6.5'-7.0'	0.5	5'-7'																
7.0'-7.5'	2.3	MA, V																
7.5'-8.0'	1.8	7'-8.5'																
8.0'-8.5'	1.6																	
8.5'-9.0'	1.2																	
9.0'-9.5'	0.0																	
9.5'-10.0'	0.2	MA																
10.0'-10.5'	0.1	9.5'-10.5'																

* Highest reading from photoionization analyzer in excavation or boring for depth interval indicated, in ppm.

** M - Metals sample, V - Volatile sample, A-sample analyzed. Samples taken in accordance with soil removal plan. Depth interval of sample indicated below sample designation.

TABLE 2 SUMMARY OF VOLATILE ORGANIC ANALYSIS FROM SOIL
NORTH STORAGE AREA
RESULTS IN PPM

Parameter Analyzed	SAMPLE NUMBER AND DEPTH INTERVAL* N1V1 0'-1'	N1V6 7-8.5'	N1AV2/N1AV2 2'-2.5'/3'-3.5'	N3V1 2.0'-3.0'	N5V3 2.17'-3.83'
Tetrachloroethylene	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethylene	<0.005	<0.005	<0.005	0.028	0.035
1,1,1-Trichloroethane	<0.005	<0.005	<0.005	<0.005	<0.005
Methylene Chloride	<0.005	<0.005	<0.005	0.090	0.036
Methyl Isobutyl Ketone	<0.005	<0.005	0.074	<0.005	<0.005
Benzene	<0.005	<0.005	<0.005	0.014	<0.005
Toluene	<0.005	<0.005	<0.005	0.023	<0.005
Xylenes	<0.005	.020	<0.005	0.062	0.275
Methylethyl Ketone	<0.010	<0.010	<0.010	<0.010	<0.010

* First two digits of sample number represent the excavation/boring location shown on Figure 1.

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TABLE 3 SUMMARY OF E.P. TOXIC METAL ANALYSIS FROM SOIL - NORTH STORAGE AREA RESULTS IN MG/L FOR EXTRACT

EP TOXIC METAL CONCENTRATIONS (mg/l)

Parameter Analyzed	SAMPLE NUMBER AND DEPTH INTERVAL*								
	N1M1 0'-1'	N1M2 1'-2'	N1M3/N1M4 2-3'/3-5'	N1M5/N1M6/N1M7 5'-7'/7'-8.5'/ 8.5-10.5'	NSS#1M on surface of asphalt	N4M3 on surface of asphalt	NF#1M on surface of asphalt	N3M3 0.5'-1.0'	N5M1 0.0-0.5'
E.P. Toxicity for:									
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	<0.0005	0.0014	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001

* First two digits of sample number represent the excavation/boxing location shown on Figure 1.

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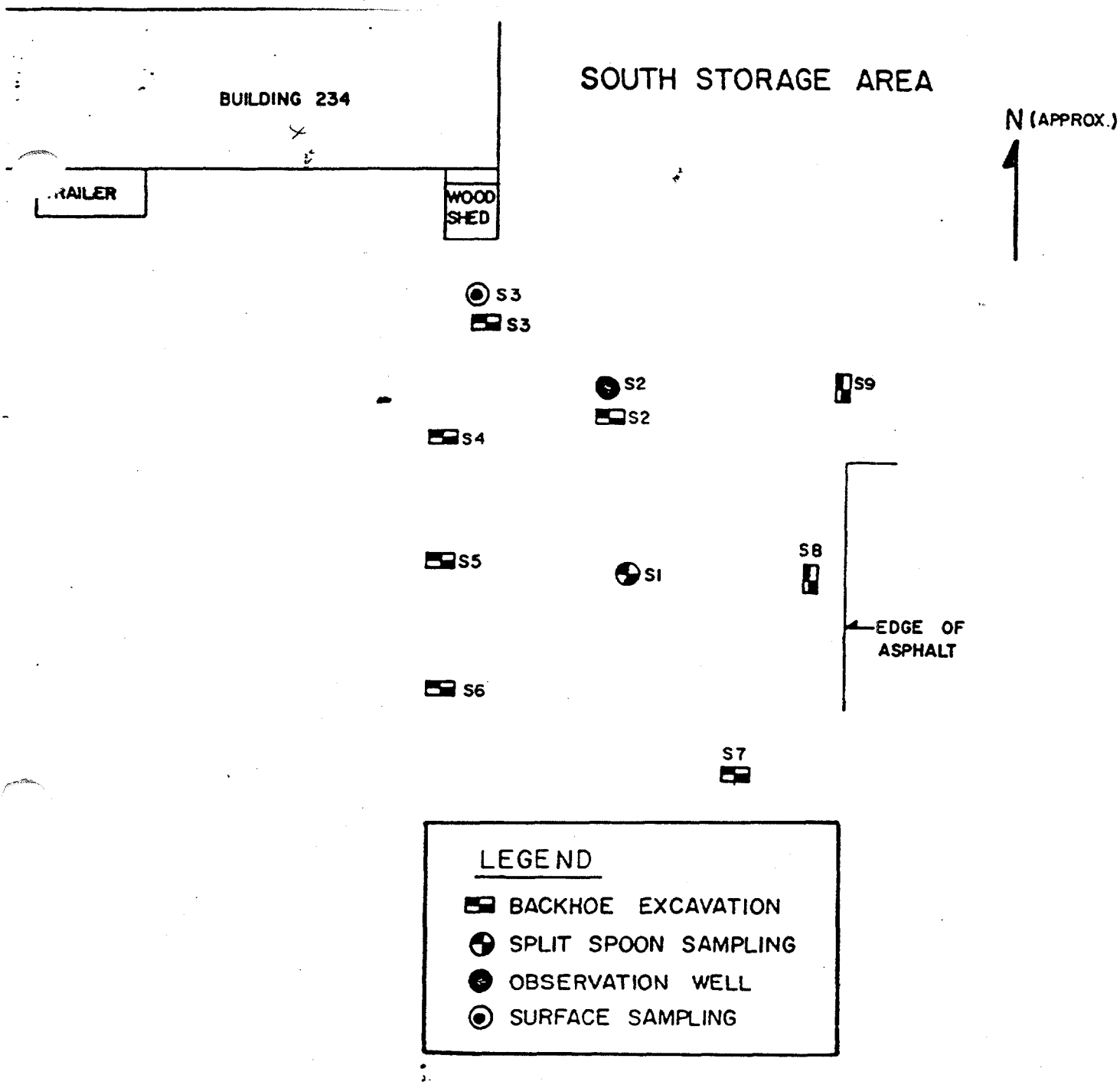

FIGURE 2:

LOCATION OF EXCAVATIONS, BORINGS AND SURFACE SAMPLES AT SOUTH STORAGE AREA.

SCALE: 1" = 20'

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TABLE 4 SUMMARY OF SAMPLING AND
PHOTOIONIZATION ANALYSIS OF SOIL - SOUTH STORAGE AREA AND BACKGROUND

	EXCAVATIONS - LOCATIONS SHOWN ON FIGURE 2																					
	S1		S2		S3		S4		S5		S6		S7		S8		S9		Back.	
Depth Interval	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**	P.I.*	Samples**
0'-0.5'	1.2	MA, V	0.2		4.5	MA	0.0		0.0		0.0		0.0	M	0.0		0.0		0.0	MA, V
0.5'-1.0'	3.0	0'-1'	0.2	N	4.2	0'-.3'	0.0	N	0.0	N	0.0	N	0.0		0.0	N	0.0	N	0.0	0'-1'
1.0'-1.5'	6.5	MA,V	0.0	O	6.0	VA	0.0	O	0.0	O	0.0	O	0.0		0.0	O	0.0	O	0.0	MA, V
1.5'-2.0'	1.5	1'-2'	0.0	N	6.0	1'-2'	0.0	N	0.0	N	0.0	N	0.0		0.0	N	0.0	N	0.0	1'-2'
2.0'-2.5'	3.0	MA,VA	0.0	E	4.5	V	0.0	E	0.0	E	0.0	E	0.0		0.0	E	0.0	E	0.1	MA, V
2.5'-3.0'	1.0	2'-3'	0.0		3.0	2'-3'	0.0		0.0		0.0		0.0		0.0		0.0		0.1	2'-3'
3.0'-3.5'	0.6				3.5	VA														
3.5'-4.0'	0.5	MA			0.8	3'-3.5'														
4.0'-4.5'	0.2	3'-5'			0.8	V														
4.5'-5.0'	0.2				1.0	3.5'-5'														
5.0'-5.5'	0.0																			
5.5'-6.0'	0.0	MA																		
6.0'-6.5'	0.0	5'-6.5'																		
6.5'-7.0'	0.0																			
7.0'-7.5'	0.0																			
7.5'-8.0'	0.0	MA																		
8.0'-8.5'	0.0	6.5'-8.5'																		
8.5'-9.0'	0.0																			
9.0'-9.5'	0.0	MA																		
9.5'-10.0'	0.0	9'-10'																		
10.0'-10.5'	0.0																			
10.5'-11.0'	0.0																			
11.0'-11.5'	0.0	MA																		
11.5'-12.0'	0.0	10'-12'																		
12.0'-12.5'	0.0																			
12.5'-13.0'	0.0	MA																		
13.0'-13.5'	0.0	12'-13.5'																		
13.5'-14.0'	0.0																			
14.0'-14.5'	0.0	MA																		
14.5'-15.0'	0.0	13.5'-15'																		

* Highest reading from photionization analyzer in excavation or boring for depth interval indicated, in ppm.

** M-metals sample, V-volatile sample, A-sample analyzed. Samples taken in accordance with soil removal plan. Depth interval indicated below sample designation.

TABLE 5 SUMMARY OF VOLATILE ORGANIC ANALYSIS FROM SOIL SOUTH STORAGE AREA RESULTS IN PPM

Parameter Analyzed	SAMPLE NUMBER AND DEPTH INTERVAL* S1V3 2'-3'	S3V1 1'-2'	S3V2 3'-3.5'
Tetrachloroethylene	<0.005	<0.005	<0.005
Trichloroethylene	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	<0.005	<0.005	<0.005
Methylene Chloride	<0.005	<0.005	<0.005
Methyl Isobutyl Ketone	1.3	0.061	0.039
Benzene	<0.005	<0.005	<0.005
Toluene	<0.005	<0.005	<0.005
Xylenes	0.47	<0.005	<0.005
Methylethyl Ketone	0.075	<0.010	0.071

* First two digits of sample number represent the excavation/boring location shown on Figure 2.

TABLE 6. SUMMARY OF E.P. TOXIC METAL ANALYSIS FROM SOIL - SOUTH STORAGE AREA AND BACKGROUND

RESULTS IN MG/L FOR EXTRACT

	EP TOXIC METAL CONCENTRATION (mg/l)						
	SAMPLE NUMBER AND DEPTH INTERVAL*						
PARAMETER ANALYZED	S1M1 0'-1'	S1AM2 1'-2'	S1M3/S1M4 2'-3'/3'-5'	S1M5/S1AM10/S1M6 5'-6.5'/6.5'-8.5'/ 9'-10'	S1M7/S1M8/S1M9 0'-12'/12'-13.5'/ 13.5'-15'	S3M1 0'-2'	BACM1/BACM2/ BACM3 0'-1'/1'-2'/2'-3'
E.P Toxicity for:							
Arsenic	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	2.4 10	<0.5
Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	0.074	<0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	0.008

*First two digits of sample number represent the excavation/boring locations shown on Figure 2.

The ground water table was measured at a depth of 15 feet below the ground surface at S2 on 9/24/84.

RECOMMENDATIONS (ANALYSIS OF RESULTS):

The results of soil scanning and testing indicate the following:

1) Only at the following test excavations did the P.I. (HNU) readings exceed the instrument detection level of 1.0 ppm:

   a) N1
   b) N2
   c) N3
   d) N5
   e) S1
   f) S3

   At none of the locations in the north storage area did the volatile organics or EP toxic metals exceed the specified limits.

   In the South Storage Area, at only one location and depth did an EP Toxic metal exceed the drinking water standard. The sample from the ground surface at excavation S3 (Sample S3M1) had an EP Toxic Cadmium concentration of 0.084 ppm which is over the 0.01 ppm standard.

   With the exception of one parameter, none of the locations exceeded the volatile organic specified limits. The exception is Methyl Isobutyl Ketone (MIBK) which was detected at 1.3 ppm in one sample (S1V3) from the 2 to 3 ft. interval at excavation S1. MIBK was detected at 1.3 ppm (mg/kg of soil) which is over the 0.2 ppm limit (assumed). The 0.2 ppm limit had been conservatively adopted even though there was no health advisory limit available from the RI Health Dept.

REQUIRED RECOMMENDATIONS

As dictated by the criteria specified in the approved plan the following recommendations are required with the above cited results:

1) North Storage Area: Remove the upper two feet of soil from the area bounded by test excavations N1,

NORTH STORAGE AREA

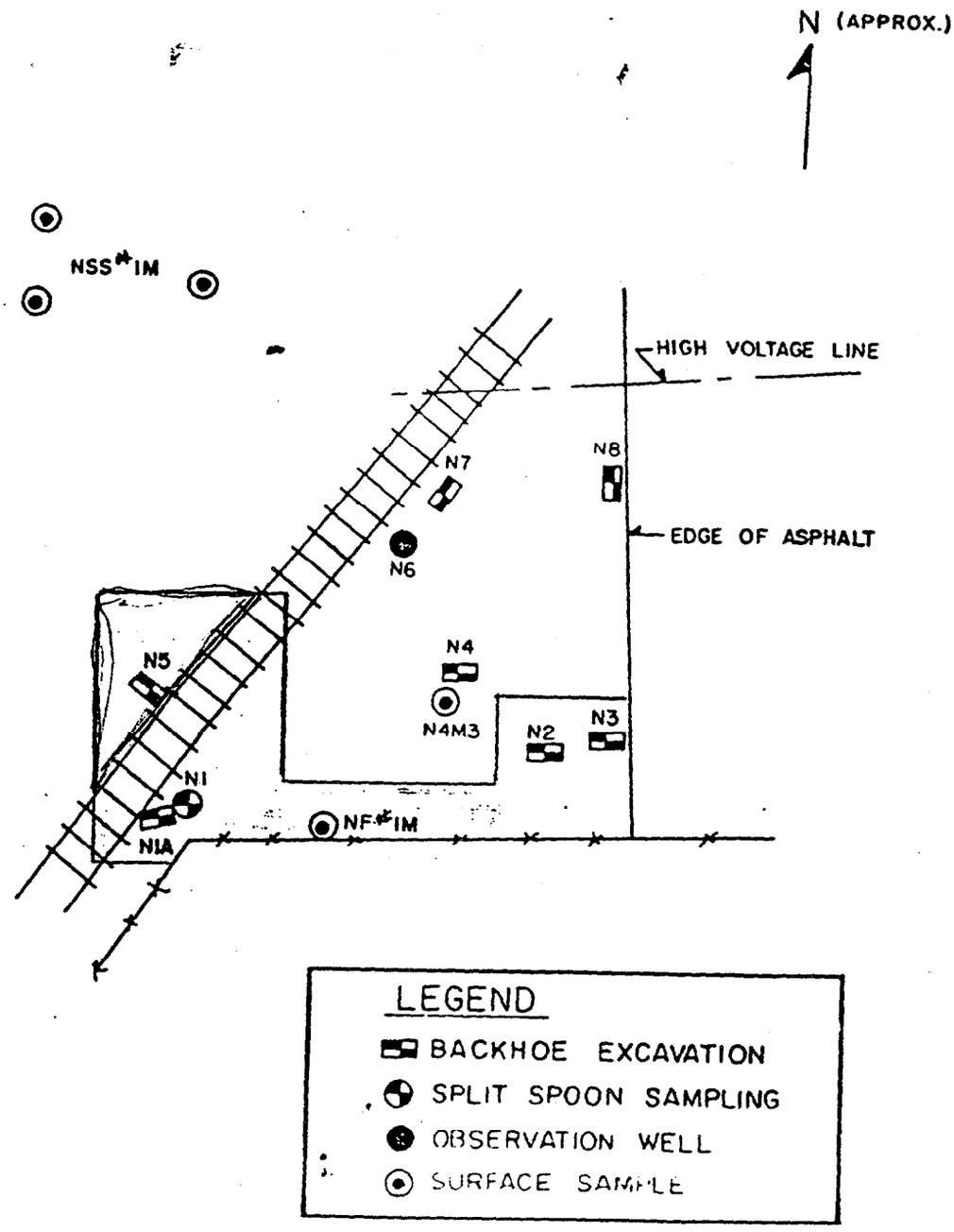

FIGURE 3:

AREA TO BE EXCAVATED (shaded) IN NORTH STORAGE AREA

SCALE: 1" = 20'

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N2, N3 and N5 and the borders of the former storage area. Area to be excavated is shaded on Figure 3.

Since none of the sites tested in the North Storage Area had levels of test parameters over the specified limits, even though P.I. readings were above detection at depths >2 feet, no excavation is required below the two foot depth.

Note: A visible oil staining was noted in excavations N1, N2, N3, and N5.

2) South Storage Area: Remove the upper two feet of soil from the areas shown as shaded on Figure 4. These areas enclose areas about excavations S1 and S3. In the area about S1 extend this excavation to a depth of 3 feet, the depth at which MIBK was detected at a level over 0.2 ppm (the specified limit).

No additional excavation is required by the criteria called for in the approved plan.

All soil would be removed and managed as described in Sections 1.40, 1.50, and 1.60 of the approved soil plan.

PROPOSED REVISED RECOMMENDATIONS:

The preceeding section outlined the soil excavation work required by the criteria specified in the approved soil plan, for the below listed reasons we wish to revise the plan criteria and therefore the recommendations:

1) All testing has shown the soil to be virtually free of the suspected contaminants (the volatile organics and EP toxic metals listed in Table 1 of the approved plan).

Only one of the parameters, Methyl Isobutyl Ketone (MIBK) was detected over the specified max. acceptable limits. However, this was an assumed limit of 0.2 ppm which was adopted since there was no available health Advisory Limit for MIBK. It was adopted since the lowest limit for the other volatile organics was 0.2 ppm and it was therefore deemed acceptable as a conservative value.

We submit that the detected level of 1.3 ppm of MIBIK at excavation S1 (at the 2-3 ft. level) is not an indication of contamination requiring soil excavation since:

- The "Registry of Toxic Effects of Chemical Substances," Volume Two, 1979, lists the lowest published toxic concentrations for MIBK to be 25 ppm.

- The OSHA standard in air is 25 ppm for MIBK.

- The aquatic toxicity rating is listed as 10 to 100 ppm. (Listed in the "Registry of Toxic Effects of Chemical Substances," Volume Two, 1979.)

The only other test parameter which exceeded the limit, is the EP toxic Cadmium concentration on the ground surface at excavation S3. EP Toxic analysis of the soil yielded a Cadmium concentration of 0.074 ppm. This is well below the concentration of 1.0 ppm which would make this a hazardous waste.

2) The application of drinking water standards and the Health Advisory limits (X 100) are extremely conservative since the storage areas are not in a public drinking water area and the small quantities of material coating soils in the storage areas do not represent an exposure risk to workers (all below grade).

   [As noted - with two minor exceptions - even these extremely conservative criteria are being met.]

3) Visually oil stained soils in the north storage area are judged not to be a significant concern - warranting soil excavation and removal since:

   - Retained (pellicular) oil is subject to gradual biological degradation and the oil coating is judged to be <u>largely immobile</u>.

     Therefore, the oil coated soil (portions of the north storage area where there are openings in asphalt) are judged not to represent a threat to the environment at this site.

Given the above reasons we <u>propose that none of the soils be excavated or removed from either of the storage areas</u>. <u>The removal of the soil</u> is not warranted by the levels and types of contaminants detected nor by the site locations (not a drinking water area and not a "pristine wildlife area").

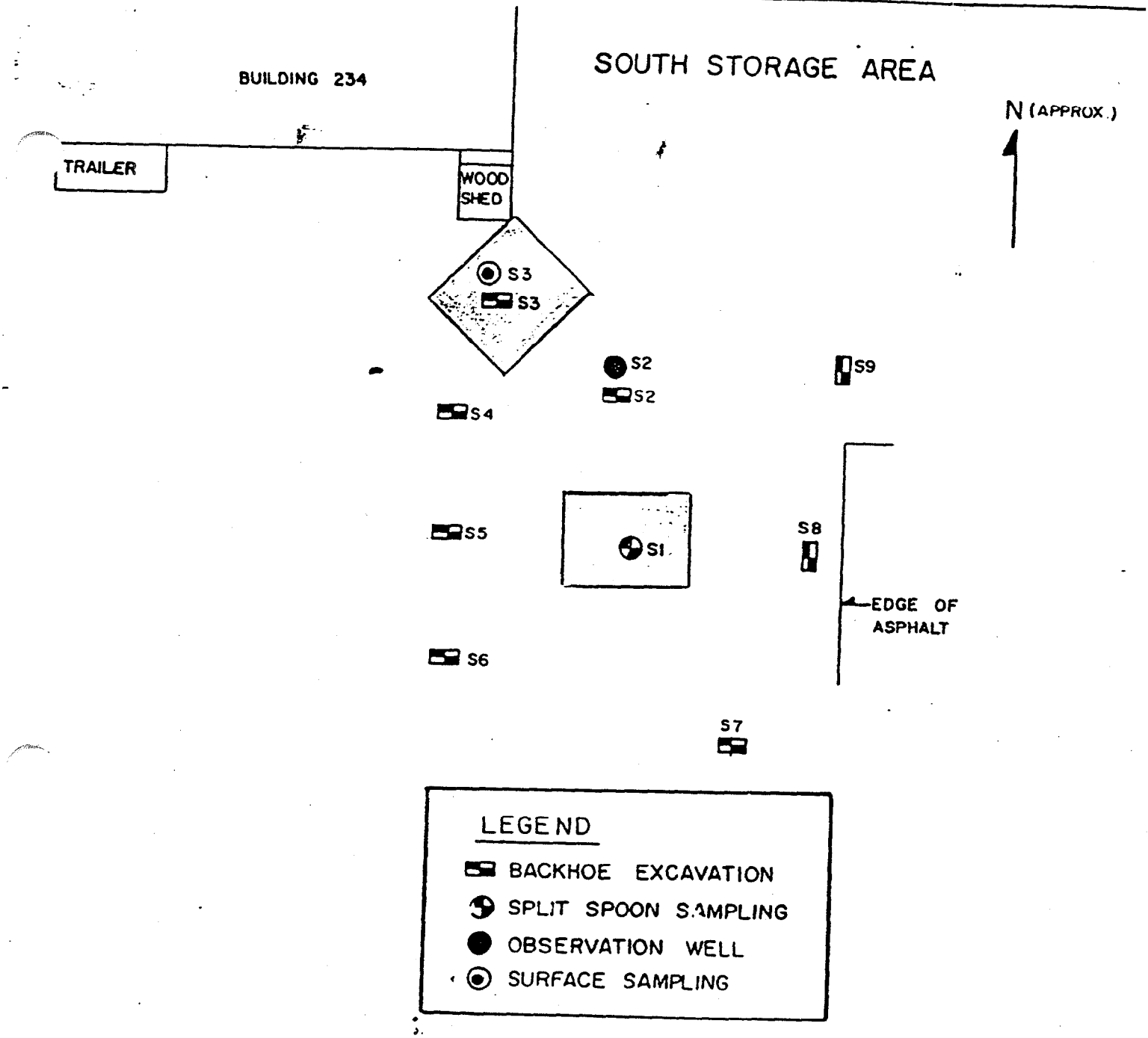

FIGURE 4:

AREA TO BE EXCAVATED (shaded) IN SOUTH STORAGE AREA

SCALE: 1" = 20'

BAC

DSA

As stated at the outset of this letter, please contact us if you require additional information to complete your review of the soil removal recommendations.

Sincerely,

John Spirito, P.E.
Principal Engineer

Thomas J. Dolce, P.E.
Principal Engineer

JS/TJD/pb

Enclosures: Appendix A and B
Figures, Tables

cc: J. Grace
J. Crawford
A. Gaynor
J. Lopes

APPENDIX A

TABLE 1

Soil Excavation Monitoring Parameters(a)

Parameter(b)	Analysis Method(c)	MAXIMUM ACCEPTABLE CONCENTRATION Remaining Soil (ppm)(d)	Removed Soil (e)
rachloroethylene	8010 or 8240	.2	(e)
chloroethylene	8010 or 8240	.8	(e)
,1-Trichloroethane	8010 or 8240	10	(e)
:hylene Chloride	8010 or 8240	15	(e)
thyl Isobutyl Ketone	8015 or 8240	(assumed .2)	(e)
nzene	8020 or 8240	.7	0.1%
luene	8020 or 8240	34	(e)
lene	8020 or 8240	62	(e)
thyl Ethyl Ketone	8015 or 8240	75	(e)
	9040 (f)	4-11	3-12(g)
Toxicity for:	2.1.4 & 1310	As mg/l in extract	As mg/l in extract
- Arsenic	7060 or 7081	(i)	5.0
- Barium	7080 or 7081	(i)	100.0
- Cadmium	7090 or 7091	(i)	1.0
- Lead	7420 or 7421	(i)	5.0

LE 1 (continued)

Parameter(b)	Analysis Method(c)	MAXIMUM ACCEPTABLE CONCENTRATION Remaining Soil (ppm)(d)	Stockpiled Soil (e)
Chromium	7190 or 7191	(i)	5.0
Mercury	7470 or 7471	(i)	0.2
ash Point	2.1.1 & 1010 or 1020	No Flash	Over 100 °F(h)

Table 1 - Footnotes

(a) Monitoring parameters may be modified if anything unusual (PCB's, cyanides, etc.) are detected upon the completion of testing of container contents by Chemical Waste Management, Inc.

(b) Parameters were selected by reviewing wastes expected to be present and material Safety Data Sheets provided by Derecktor, in conjunction with the list of hazardous constituents listed in Appendix VIII of 40 CFR 261.

(c) Analytical methods as delineated in EPA's "Test Methods for Evaluating Solid Waste", SW-846, 2nd Edition, July 1982.

(d) Levels specified are the long term (years) (except for MEK - which is a 10 day exposure figure) Health Advisory Limits multiplied by a factor of 100. Source of Health advisory Data - personal communications with RI Health Dept. Officials. The Health Advisory's were multiplied by a factor of 100 using the same reasoning applied by the USEPA in developing the EP toxic limits. A limit was not available for methyl isobutyl ketone.

Levels for metals from 40 CFR 261.24, Table 1.

pH range as deemed relatively safe for short term human contact.

Table 1 - Footnotes (continued)

(e) Total of organics (except benzene) must not exceed a total of 1%. This limit selected since the "Rhode Island Extremely Hazardous Waste Rules and Regulations" generally specify a 1% concentration limit for certain similar organics.

For Benzene the above referenced regulation specifies a limit of 0.1%.

(f) pH of solid samples will be determined by mixing 50% by weight with distilled water, and measuring pH on aqueous portion.

(g) pH range of 3-12 selected based on definition of a corrosive waste as provided in RI Generator Rule 1.34(b).

(h) Criteria for flash point limit of 100 ^{o}F based on definition of a slightly flammable solid and/or semi-solid as provided in RI Generator Rule 1.33(b).

(i) See Section 1.30 (2). Soil layers containing metal concentrations above background sample levels or primary drinking water standards whichever is greater will be removed.

APPENDIX B

GUILD DRILLING CO., INC.
100 WATER STREET EAST PROVIDENCE, R.I.

TO Dolce Spirito Assoc.
PROJECT NAME Monitor Well Installation
REPORT SENT TO... above / @ Derector Shipyard
SAMPLES SENT TO Taken at Site

ADDRESS North Kingstown, R.I.
LOCATION Middletown, R.I.
PROJ. NO
OUR JOB NO 85-136

DATE
HOLE NO. S-1
LINE & STA.
OFFSET
SURF. ELEV.

GROUND WATER OBSERVATIONS
At 15' after — Hours
At — after — Hours

	CASING	SAMPLER	CORE BAR
Type	H/S	S/S	
Size I.D.	Auger	1 3/8"	
Hammer Wt		140#	BIT
Hammer Fall		30"	

	Date	Time
START	9/14/84	
COMPLETE	9/14/84	
TOTAL HRS		
BORING FOREMAN	T. Pacuette	
INSPECTOR		
SOILS ENGR.		

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	12-18	Moisture Density or Consist	Strata Change Elev.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock - color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No	Pen	Rec
		0'-1'	D	12	15				Brown fine to medium Sand & Silt, some fine to med. gravel - FILL	1	12"	11"
		1'-2'	D	15	21					2	12"	10"
		2'-3'	D	7	9					3	12"	9"
		3'-5'	D	7	6	5				4	24"	19"
						5						
		5'-6.5'	D	3	5	5				5	18"	16"
		6.5'-8.5'	D	6	5	6				6	24"	-
						7						
		8.5'-10'	D	5	6	6		10'		7	18"	18"
		10'-12'	D	2	2	3			Brown silty fine to medium SAND	8	22"	20"
						5		12.5'		9	18"	18"
		12'-13.5'	D	46	47	69			Brown fine to medium SAND & Silt, some gravel (Till)			
								15'		10	18"	
		13.5'-15'	D	16	22	27			Bottom of Boring 15'			

Earth Boring 15'
Rock Coring
Samples
HOLE NO.

100 WATER STREET EAST PROVIDENCE R I

TO Dolce Spirito Assoc.
PROJECT NAME Monitor Well Installation
REPORT SENT TO above / @ Derector Shipyard
SAMPLES SENT TO Taken at Site

ADDRESS North Kingstown, R.I.
LOCATION Middletown, R.I.
PROJ. NO.
OUR JOB NO 85-136

HOLE NO. S-1A
LINE & STA.
OFFSET
SURF. ELEV.

GROUND WATER OBSERVATIONS
At _____ after ____ Hours
At _____ after ____ Hours

	CASING	SAMPLER	CORE BAR
Type	H/S Auger	S/S	
Size. D		1 3/8"	
Hammer Wt		140#	
Hammer Fall		30"	

	Date	Time
START	9/14/84	a.m. p.m.
COMPLETE	9/14/84	a.m. p.m.
TOTAL HRS		

BOR NO FOREMAN T. Pacquette
INSPECTOR
SOILS ENGR.

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	12-18	Moisture Density or Consist.	Strata Change Elev.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No	Pen	Rec
		1'-2'	D	14	16				Brown silty fine to medium Sand, little fine to medium gravel - FILL	1	12"	9"
		6.5'-8.5'	D	3	5	4				2	24"	12"
						6		8.5'				
									Bottom of Boring 8.5'			

GROUND SURFACE TO _____ USED _____ CASING _____ THEN _____

Sampler Type
D Split Barrel Auger
UP Undisturbed Piston
VT Vane Test

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%

140 lb Wt 30" Fall on 1 3/8" O.D. Sampler
Consistency Density Cohesive Strength
Loose
Med Dense
Dense
Very Dense
30 + Hard

SUMMARY
Earth Boring
Rock Coring
Samples

HOLE NO. S-1A

100 WATER STREET EAST PROVIDENCE

TO Dolce Sprirto Assoc. ADDRESS North Kingstown, R.I.

PROJECT NAME Monitor Well Installation LOCATION Middletown, R.I.

REPORT SENT TO above / @ Derector Shipyard PROJ NO

SAMPLES SENT TO Taken at Site OUR JOB NO 85-136

HOLE NO. S-2

LINE & STA.

OFFSET

SURF. ELEV.

GROUND WATER OBSERVATIONS @ Comp.

At 22.5' after ___ Hours

At 15' after 12 Hours

	CASING	SAMPLER	CORE BAR.
Type	H/S	S/S	
Size. D	Auger	1 3/8"	
Hammer Wt		140#	BIT
Hammer Fall		30"	

	Date	Time
START	9/13/84	a.m.
COMPLETE	9/13/84	p.m.
TOTAL HRS.		
BORING FOREMAN	T. Paquette	
INSPECTOR		
SOILS ENGR.		

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	12-18	Moisture Density or Consist	Strata Change Ele.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc	SAMPLE No	Pen	Rec
		2'-4'	D	27	48	45			Brown silty fine to medium SAND, little coarse to fine gravel (Possible Fill)	1	24"	13"
						18						
		7'-9'	D	5	6	6				2	24"	18"
						6		10'				
		12'-14'	D	19	23	27			Brown fine to medium SAND & Silt, some coarse to fine gravel (Till)	3	24"	20"
						34						
		17'-19'	D	16	38	47				4	24"	22"
						88						
		22'-23'	D	44	105					5	12"	12"
								25'				
									Bottom of Boring 25'			
									Installed Observation Well @ 25'			
									15' of 2" Slotted PVC			
									10' of 2" Solid PVC			
									200# of Ottowa Sand			
									One large Gate Box			
									½ Bag of Cement			

GROUND SURFACE TO 25' USED H/S/A CASING THEN

Sample Type

Proportions Used

Consistency

Relative Density

SUMMARY

Earth Borings

Rock Borings

Samples

HOLE NO S-2

SPECIALIZING IN ENVIRONMENTAL ANALYSIS

231 ELM STREET
WARWICK, R. I 02888

PHONE (401) 467-2452

CERTIFICATE OF ANALYSIS

Dolce, Spirito & Associates
7 Belver Avenue
North Kingstown, RI 02852
Attn: Mr. John Grace

DATE RECEIVED 10/12/84
DATE REPORTED 10/25/84
PURCHASE ORDER NO
SERIAL INV NO D2545

SAMPLE DESCRIPTION Six (6) liquid samples labelled EP extract plus blank

Subject samples have been analyzed by our laboratory with the following results:

PARAMETER	NSS#1M	N4M3	NF#1M	S3M1	N3M3	N5M1
Arsenic	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium	<0.5	<0.5	<0.5	2.4	<0.5	<0.5
Cadmium	<0.02	<0.02	<0.02	0.07	<0.02	<0.02
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

	BLANK
Arsenic	<0.2
Barium	<0.5
Cadmium	<0.02
Chromium	<0.05
Lead	<0.1
Mercury	<0.001

Note: results in mg/l

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd edition.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

PREPARED BY Anthony P. Ferrotti

SPECIALIZING IN ENVIRONMENTAL ANALYSIS

231 ELM STREET
WARWICK, R.I. 02888

PHONE: (401) 467-2452

CERTIFICATE OF ANALYSIS

Dolce, Spirito & Associates
7 Belver Avenue
North Kingstown, RI 02852
Attn: Mr. John Grace

DATE RECEIVED 10/05/84
DATE REPORTED 10/25/84
PURCHASE ORDER NO
SERIAL NO D2518

Eleven (11) liquid samples labelled EP Extract

Subject samples have been analyzed by our laboratory with the attached results.

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd edition.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

Stephen P. Parrotti

FEAL Inc.
Certificate of Analysis
Dolce Spirito, Assoc.
D-518
October 24, 1984

PARAMETER	DIST. WATER BLANK	N1M~~X~~ 12	N1M2	N1M3 & N1M4	N1M5, N1M6 and N1M7	S1M1
Arsenic	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	<0.0005	<0.0005	0.0014	<0.0005	0.0005	<0.0005

	S1AM2	S1M3 & S1M4	S1M5, S1AM10 and S1M6 10	S1M7, S1M8 and S1M9	BACM1, BACM2 and BACM3
Arsenic	<0.2	<0.2	<0.2	<0.2	<0.2
Barium	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<0.02	<0.02	<0.02	<0.02	<0.02
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	<0.001	<0.001	<0.001	<0.001	0.008

Note: results expressed in mg/l

K. I. Analytical Laboratories, Inc.

SPECIALIZING IN ENVIRONMENTAL ANALYSIS

231 ELM STREET
WARWICK, R.I. 02888

PHONE: (401) 467-2482

CERTIFICATE OF ANALYSIS

EPORT TO: Dolce, Spirito & Assoc.
7 Belver Avenue
North Kingstown, RI 02852
Attn: Mr. John Grace

DATE RECEIVED: 10/9 & 10/12/84
DATE REPORTED: 11/02/84
PURCHASE ORDER NO.:
R.I.A.L. INV. NO.: D2718

SAMPLE DESCRIPTION: Eighteen (18) liquid samples

Subject samples have been reanalyzed by our laboratory to acheive lower detection limits than those previously reported. The results are attached.

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd ed.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

·rtificate of Analysis

ılce, Spirito & Assoc.
ıvember 1, 1984
ımber D2718
ıge -2-

RAMETER	NSS #1M	N4N3	NF #1M	S3M1	N3M3	N5M1
senic	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
dmium	0.007 "	<0.005 "	<0.005 "	0.074 "	<0.005 "	<0.005 "
ad	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "

RAMETER	BLANK (For Above)	DIS. WATER BLANK	NIM1 J.B.	NIM2	N1M3 & N1M4	N1M5, N1M6 and N1M7
senic	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
dmium	<0.005 "	<0.005 "	0.006 "	<0.005 "	<0.005 "	<0.005 "
ad	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "

RAMETER	S1M1	S1AM2	S1M3 & S1M4	S1M5, S1AM10 and S1M6 J.B.	S1M7, S1M8 and S1M9	BACM1, BACM2 and BACM3
senic	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l
dmium	<0.005 "	<0.005 "	<0.005 "	<0.005 "	<0.005 "	<0.005 "
ad	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "	<0.05 "

R.I. ANALYTICAL LABORATORIES, INC.

100 WATER STREET EAST PROVIDENCE, R.I.

TO Dolce Spirito Assoc.
PROJECT NAME Monitor Well Installation
REPORT SENT TO above / @ Derector Shipyard
SAMPLES SENT TO Taken at Site

ADDRESS North Kingstown, R.I.
LOCATION Middletown, R.I.
PROJ. NO
OUR JOB NO 85-136

DATE
HOLE NO. S-1
LINE & STA.
OFFSET
SURF. ELEV.

GROUND WATER OBSERVATIONS
15' after — Hours
after — Hours

	CASING	SAMPLER	CORE BAR
Type	H/S Auger	S/S	
Size I.D		1 3/8"	
Hammer Wt		140#	BIT
Hammer Fall		30"	

	Date	Time
START	9/14/84	
COMPLETE	9/14/84	
TOTAL HRS.		
BORING FOREMAN	T. Pacquette	
INSPECTOR		
SOILS ENGR.		

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	6-12	12-18	Moisture Density or Consist	Strata Change Elev	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No	Pen	Rec
		0'-1'	D	12	15				Brown fine to medium Sand & Silt, some fine to med. gravel - FILL	1	12"	11"
		1'-2'	D	15	21					2	12"	10"
		2'-3'	D	7	9					3	12"	9"
		3'-5'	D	7	6	5				4	24"	19"
						5						
		5'-6.5'	D	3	5	5				5	18"	16"
		6.5'-8.5'	D	6	5	6				6	24"	-
						7						
		8.5'-10'	D	5	6	6		10'		7	18"	18"
		10'-12'	D	2	2	3			Brown silty fine to medium SAND	8	24"	20"
						5		12.5'				
		12'-13.5'	D	46	47	69			Brown fine to medium SAND & Silt, some gravel (Till)	9	18"	18"
								15'		10	18"	
		13.5'-15'	D	16	22	27			Bottom of Boring 15'			

GROUND SURFACE TO ___ WELD ___ CASING THEN ___

Equipment Used
Hole Size
Time 0'-20'
Volume 20'-35'

Consistency
Loose
Dense

Consistency
Soft
Stiff

30 - Hard

SUMMARY
Earth Boring 15'
Rock Coring
Samples 10

HOLE No. S-1

100 WATER STREET EAST PROVIDENCE, R. I.

TO Dolce Spirito Assoc.
PROJECT NAME Monitor Well Installation
REPORT SENT TO above / @ Derector Shipyard
SAMPLES SENT TO Taken at Site

ADDRESS North Kingstown, R.I.
LOCATION Middletown, R.I.
PROJ. NO.
OUR JOB NO 85-136

HOLE NO S-1A
LINE & STA.
OFFSET
SURF. ELEV.

GROUND WATER OBSERVATIONS
At ____ after ____ Hours
At ____ after ____ Hours

	CASING	SAMPLER	CORE BAR
Type	H/S	S/S	
Size - D	Auger	1 3/8"	
Hammer Wt		140#	
Hammer Fall		30"	

	Date	Time
START	9/14/84	a.m. p.m.
COMPLETE	9/14/84	a.m. p.m.
TOTAL HRS		

BOR NO FOREMAN T. Pacciotto
INSPECTOR
SOILS ENGR.

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	12-18	Moisture Density or Consist	Strata Change Elev	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No	Pen	Rec
		1'-2'	D	14	16				Brown silty fine to medium Sand, little fine to medium gravel - FILL	1	12"	9"
		6.5'-8.5'	D	3	5	4				2	24"	12"
						6		8.5'				
									Bottom of Boring 8.5'			

GROUND SURFACE TO ____ FEET ____ CASING THEN ____

Sampler Type
Cohesionless Consistency
Undisturbed Piston
Penetration Test & Auger Advance Test

Blows per foot
Very Loose
Loose
Dense
Very Dense

40 blows per 6" to 1 foot Sampler

Very Soft
Soft
Medium
Stiff
Very Stiff
Hard

SUMMARY
Earth Boring 8.5'
Rock Coring
Samples

HOLE NO S-1A

100 WATER STREET EAST PROVIDENCE

TO Dolce Sprirto Assoc.
PROJECT NAME Monitor Well Installation
REPORT SENT TO above / @ Derector Shipyard
SAMPLES SENT TO Taken at Site

ADDRESS North Kingstown, R.I.
LOCATION Middletown, R.I.
PROJ NO.
OUR JOB NO 85-136

DATE
HOLE NO. S-2
LINE & STA.
OFFSET
SURF. ELEV.

GROUND WATER OBSERVATIONS @ Comp.
At 22.5' after ____ Hours
At 15' after 12 Hours

	CASING	SAMPLER	CORE BAR.
Type	H/S	S/S	
Size. D	Auger	1 3/8"	
Hammer Wt		140#	BIT
Hammer Fall		30"	

	Date	Time
START	9/13/84	a.m. p.m.
COMPLETE	9/13/84	a.m. p.m.

TOTAL HRS.
BORING FOREMAN T. Paquette
INSPECTOR
SOILS ENGR.

LOCATION OF BORING

DEPTH	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	12-18	Moisture Density or Consist	Strata Change Elev.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc Rock-color, type, condition, hardness, Drilling time, seams and etc	SAMPLE No	Pen	Rec
		2'-4'	D	27	48	45			Brown silty fine to medium SAND, little coarse to fine gravel (Possible Fill)	1	24"	13"
						18						
		7'-9'	D	5	6	6				2	24"	18"
						6		10'				
		12'-14'	D	19	23	27			Brown fine to medium SAND & Silt, some coarse to fine gravel (Till)	3	24"	20"
						34						
		17'-19'	D	16	38	47				4	24"	22"
						88						
		22'-23'	D	44	105					5	12"	12"
								25'				
									Bottom of Boring 25'			
									Installed Observation Well @ 25'			
									15' of 2" Slotted PVC			
									10' of 2" Solid PVC			
									200# of Ottowa Sand			
									One large Gate Box			
									½ Bag of Cement			

GROUND SURFACE TO 25' USED H/S/A CASING THEN

Sample Type

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%

140 lb Auto 30" Drop 2" O.D. Sampler
Cohesive Consistency
I-34 Loose
Dense
30-50 Dense
Very Dense

Cohesive Consistency
Soft
30 + Hard

SUMMARY
Earth Boring 25'
Rock Coring
Samples 5

HOLE NO S-2

Dolce, Spirito & Associates, Inc.
ENGINEERS • CONSULTANTS • SURVEYORS

7 Belver Avenue, Room 210
Quonset Point, Rhode Island 02852

Telephone: (401) 294-339

FILE COPY

TD

TD
JGV

Novermber 7, 1984

Mr. Thomas Michel
US EPA
JFK Building
Boston, MA 02203

Re: R.E. Derecktor - Recommendations (Soil Excavation)

Dear Mr. Michel:

Please insert the attached page (page 15 (R-11/7/84)) in place of the original page submitted to your office on November 1, 1984. An error was made in the original page (15). Reference was made to excavation S3 as being the location with MIBK levels over the specified limit. It should have referenced excavation S1 which had the MIBK level over the specified limit. The revised page corrects this error.

Sincerely,

John Spirito, P.E.
Principal Engineer

JS/sco

Attachment

cc: T. Dolce
J. Grace
J. Crawford
A. Gaynor
J. Lopes

N2, N3 and N5 and the borders of the former storage area. Area to be excavated is shaded on Figure 3.

Since none of the sites tested in the North Storage Area had levels of test parameters over the specified limits, even though P.I. readings were above detection at depths >2 feet, no excavation is required below the two foot depth.

Note: A visible oil staining was noted in excavations N1, N2, N3, and N5.

2) South Storage Area: Remove the upper two feet of soil from the areas shown as shaded on Figure 4. These areas enclose areas about excavations S1 and S3. In the area about S1 extend this excavation to a depth of 3 feet, the depth at which MIBK was detected at a level over 0.2 ppm (the specified limit).

   No additional excavation is required by the criteria called for in the approved plan.

   All soil would be removed and managed as described in Sections 1.40, 1.50, and 1.60 of the approved soil plan.

PROPOSED REVISED RECOMMENDATIONS:

The preceeding section outlined the soil excavation work required by the criteria specified in the approved soil plan, for the below listed reasons we wish to revise the plan criteria and therefore the recommendations:

1) All testing has shown the soil to be virtually free of the suspected contaminants (the volatile organics and EP toxic metals listed in Table 1 of the approved plan).

   Only one of the parameters, Methyl Isobutyl Ketone (MIBK) was detected over the specified max. acceptable limits. However, this was an assumed limit of 0.2 ppm which was adopted since there was no available health Advisory Limit for MIBK. It was adopted since the lowest limit for the other volatile organics was 0.2 ppm and it was therefore deemed acceptable as a conservative value.

   We submit that the detected level of 1.3 ppm of MIBK at excavation S1 (at the 2-3 ft. level) is not an indication of contamination requiring soil excavation since:

See Revised page 15

N2, N3 and N5 and the borders of the former storage area. Area to be excavated is shaded on Figure 3.

Since none of the sites tested in the North Storage Area had levels of test parameters over the specified limits, even though P.I. readings were above detection at depths >2 feet, no excavation is required below the two foot depth.

Note: A visible oil staining was noted in excavations N1, N2, N3, and N5.

2) South Storage Area: Remove the upper two feet of soil from the areas shown as shaded on Figure 4. These areas enclose areas about excavations S1 and S3. In the area about S3 extend this excavation to a depth of 3 feet, the depth at which MIBK was detected at a level over 0.2 ppm (the specified limit).

No additional excavation is required by the criteria called for in the approved plan.

All soil would be removed and managed as described in Sections 1.40, 1.50, and 1.60 of the approved soil plan.

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1) All testing has shown the soil to be virtually free of the suspected contaminants (the volatile organics and EP toxic metals listed in Table 1 of the approved plan).

Only one of the parameters, Methyl Isobutyl Ketone (MIBK) was detected over the specified max. acceptable limits. However, this was an assumed limit of 0.2 ppm which was adopted since there was no available health Advisory Limit for MIBK. It was adopted since the lowest limit for the other volatile organics was 0.2 ppm and it was therefore deemed acceptable as a conservative value.

We submit that the detected level of 1.3 ppm of MIBK at excavation S3 (at the 2-3 ft. level) is not an indication of contamination requiring soil excavation since:

Dolce & Spirito

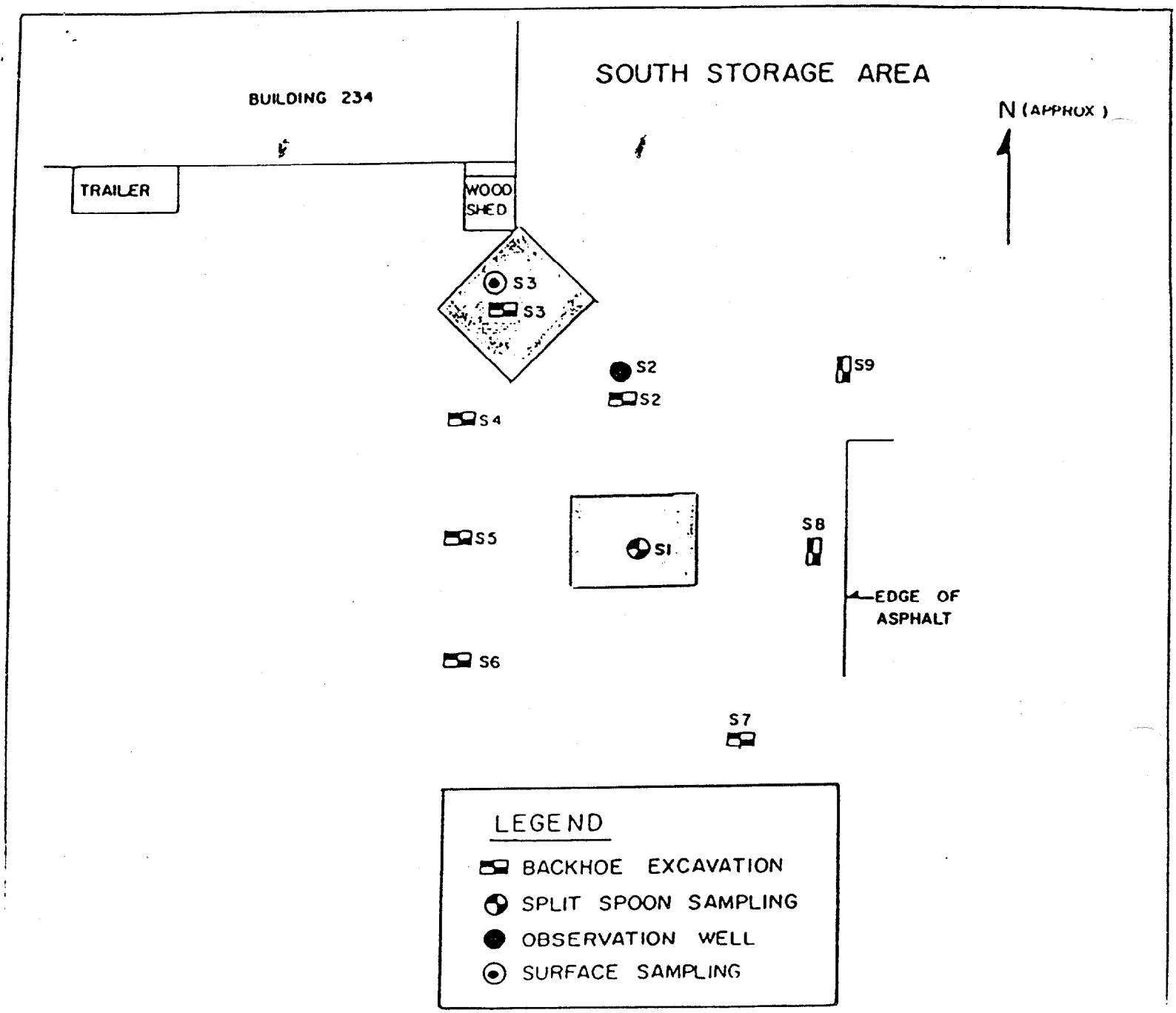

FIGURE 4

AREA TO BE EXCAVATED (shaded) IN SOUTH STORAGE AREA

SCALE: 1" = 20'

BAC

Dolce, Spirito & Associates, Inc.
ENGINEERS • CONSULTANTS • SURVEYORS

7 Belver Avenue, Room 210
Quonset Point, Rhode Island 02852

Telephone: (401) 294-3

FILE COI

December 5, 1984

Mr. Thomas Michel
USEPA
JFK Building
Boston, MA 02203

Re: Robert E. Derecktor - Determination of Extent of Soil Excavation Required

Dear Mr. Michel:

Please find attached revised Page 17 of the November 1, 1984 report submitted to your office. The revisions on the attached Page 17 reflect the correct levels found in the 1980 edition of the Registry of Toxic Effects of Chemical Substances, Volume Two, 1980 for Methyl Isobutyl Ketone.

Thank you for bringing this matter to our attention.

Sincerely yours,

John W. Grace

John W. Grace
Environmental Engineer

JWG/pb

Attachment: Revised Page 17

cc: J. Spirito/T. Dolce
J. Crawford
A. Gaynor
J. Lopes

- The "Registry of Toxic Effects of Chemical Substances," Volume Two, 1980, lists the lowest published toxic concentrations for MIBK to be 200 ppm.

- The OSHA standard in air is 100 ppm for MIBK.

- The aquatic toxicity rating is listed as over 1000 ppm. (Listed in the "Registry of Toxic Effects of Chemical Substances," Volume Two, 1980.)

The only other test parameter which exceeded the limit, is the EP toxic Cadmium concentration on the ground surface at excavation S3. EP Toxic analysis of the soil yielded a Cadmium concentration of 0.074 ppm. This is well below the concentration of 1.0 ppm which would make this a hazardous waste.

2) The application of drinking water standards and the Health Advisory limits (X 100) are extremely conservative since the storage areas are not in a public drinking water area and the small quantities of material coating soils in the storage areas do not represent an exposure risk to workers (all below grade).

   [As noted - with two minor exceptions - even these extremely conservative criteria are being met.]

3) Visually oil stained soils in the north storage area are judged not to be a significant concern - warranting soil excavation and removal since:

   - Retained (pellicular) oil is subject to gradual biological degradation and the oil coating is judged to be <u>largely immobile</u>.

     Therefore, the oil coated soil (portions of the north storage area where there are openings in asphalt) are judged not to represent a threat to the environment at this site.

Given the above reasons we <u>propose that none of the soils be excavated or removed from either of the storage areas</u>. <u>The removal of the soil</u> is not warranted by the levels and types of contaminants detected nor by the site locations (not a drinking water area and not a "pristine wildlife area").

See Revised Page 17

- The "Registry of Toxic Effects of Chemical Substances," Volume Two, 1979, lists the lowest published toxic concentrations for MIBK to be 25 ppm.

- The OSHA standard in air is 25 ppm for MIBK.

- The aquatic toxicity rating is listed as 10 to 100 ppm. (Listed in the "Registry of Toxic Effects of Chemical Substances," Volume Two, 1979.)

The only other test parameter which exceeded the limit, is the EP toxic Cadmium concentration on the ground surface at excavation S3. EP Toxic analysis of the soil yielded a Cadmium concentration of 0.074 ppm. This is well below the concentration of 1.0 ppm which would make this a hazardous waste.

2) The application of drinking water standards and the Health Advisory limits (X 100) are extremely conservative since the storage areas are not in a public drinking water area and the small quantities of material coating soils in the storage areas do not represent an exposure risk to workers (all below grade).

[As noted - with two minor exceptions - even these extremely conservative criteria are being met.]

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Given the above reasons we <u>propose that none of the soils be excavated or removed from either of the storage areas</u>. <u>The removal of the soil</u> is not warranted by the levels and types of contaminants detected nor by the site locations (not a drinking water area and not a "pristine wildlife area").

Dolce & Spirito

As stated at the outset of this letter, please contact us if you require additional information to complete your review of the soil removal recommendations.

Sincerely,

John Spirito, P.E.
Principal Engineer

Thomas J. Dolce, P.E.
Principal Engineer

JS/TJD/pb

Enclosures: Appendix A and B
Figures, Tables

cc: J. Grace
J. Crawford
A. Gaynor
J. Lopes

APPENDIX J

SPILL INSPECTION REPORT OF OCTOBER 1987

STATE OF RHODE ISLAND

#3353

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Cannon Building Providence, Rhode Island 02908

INSPECTOR: P Sullivan

DATE: 10/31/87

TIME: 10:30

SPILL INSPECTION REPORT

DATE REPORTED: 10/31/87 TIME: 9:30

REPORTED BY: Middletown Police PHONE NO:
Enforcement

PROPERTY OWNER: Perecktor's Shipyard PHONE NO: 847-8070
Coddington Cove
Middletown RI (Bob Ciphman Has Met Coed)

POLLUTOR

NAME: Same PHONE NO:

ADDRESS:

VEHICLE IDENTIFICATION: N/A

TYPE: COLOR: REG #

OPERATOR:

NAME:

ADDRESS:

LOCATION OF SPILL:

STREET: Coddington Cove

TOWN: Middletown

DIRECTIONS:

TYPE OF MATERIAL SPILLED: #2 Fuel

TOTAL QUANTITY: Unknown- 100 or less bestest

WATERBODY INVOLVED: Coddington Cove

SOURCE: Underground Tank - 10,000 gal.

CAUSE: over fill came out vent into storm of drain

CONTAINMENT & REMOVAL:

DISCHARGE STOPPED: X YES ____ NO TIME: ____

DIKING REQUESTED: X YES ____ NO TIME: ____

CONSTRUCTED: X YES ____ NO -

CONTRACTOR REQUESTED: X YES ____ NO TIME: ____

NAME: Mac & Watson ARRIVAL TIME: ____

MATERIALS REQUESTED:

BOOM	X	VAC TRUCK	X
F/F MATL'S	X	VAC ALL	
MANPOWER	X	SKIMMER	X
BOAT		HAND TOOLS	

ADDITIONAL MATERIALS:

OTHER AGENCIES:

NAME: Coast Guard CONTACT: Petty Officer Wolf TIME: 10:45

NAME: _____ CONTACT: _____ TIME: _____

NAME: _____ CONTACT: _____ TIME: _____

NAME: _____ CONTACT: _____ TIME: _____

LEGAL RESPONSIBILITY ACCEPTED BY POLLUTOR: X YES _____ NO

NAME: Same

SAMPLES TAKEN: _____ YES X NO

QUANTITY: _____ LOCATION: _____

QUANTITY: _____ LOCATION: _____

FOLLOW UP RECOMMENDATIONS: Skim & Vac sheen within booms. Inner boom is permanent

Use reverse side for brief diagram - attach additional information as required.

cc: Marine Safety Office
John C Pastore
Federal Building
Providence RI 02903

Attn: Petty Officer Wolf

File No: KA1187-30709

2 November 1987

RECEIVED
NOV - 5 1987
R.I. DEPT. OF ENVIRONMENTAL MANAGEMENT

DERECKTOR
SHIPYARDS
NEW YORK
RHODE ISLAND
FLORIDA

Mr. Peter Sullivan
State of Rhode Island
Department of Environmental Management
Division of Air & Hazardous Material
75 Davis Street
Providence, RI 02908

Dear Mr. Sullivan,

The enclosed report is the account of the pollution incident that was reported to your office on 31 October 1987. The incident occured at Robert E. Derecktor of Rhode Island Inc.'s , Coddington Cove facility.

Also enclosed are the manifests from the clean up operations conducted by McDonald-Watson.

If your have any questions please contact the undersigned or Mr. Robert Chipman, Hazardous Material Controller, at 272-2961. Thank you for your assistance in this matter.

Very truly yours,

Karen M. Augeri

Karen M. Augeri
Paralegal

ROBERT E. DERECKTOR OF RHODE ISLAND, INC., CODDINGTON COVE, MIDDLETOWN, RHODE ISLAND 02840
TEL: 401-847-9270 TWX: 710-387-6305 FAX: 401-8 J-4

SPILL REPORT

The facility is located in Middletown, Rhode Island on 44 acres of leased Navy property in Coddington Cove. Please refer to the enclosed figure 1, for site location. The shipyard has been in operation since 1979. The primary operations undertaken are military and commercial ship repair and new construction.

The incident began on 31 October 1987, at approximately 0730 when the Middletown Police Department contacted the shipyard (REDRI) to ascertain the source of an oil smell emanating from the vicinity of the facility. At that time an inspection was undertaken which revealed the spill. This was shortly after 0745, that a fuel oil spill was identified. The spill was caused by overfilling of a 10,000 gallon capacity underground tank located on the East side of building 234.

A undetermined amount of fuel went down a storm drain and entered the South basin of Coddington Cove, as a result of the overfilling. The underground tank was being filled by a REDRI mobil tank truck operated by a REDRI employee. The 2,500 gallon capacity truck was being utilized to remove #2 fuel oil from the U.S.S. Connole berthed at REDRI Pier 1. At approximately 0800 Hazardous Material Controller, Robert Chipman, was contacted by the shipyard security staff and appraised of the situation. As Mr. Chipman has a 45 minute commute to the yard he instructed REDRI staff to contact Firemarshall James Peckham, to respond. When Mr. Chipman arrived at the facility he discovered the spill, which had already been contained. The origen of the spill was located at the Northeast corner of building 234. The area was cordoned off with oil booms. A secondary boom was placed and REDRI subcontracted the waste removal company McDonald & Watson to bring their emergency response team. The storm drain area was contained by using the absorbent product "speedy dri" and placing a berm around the drain. Two REDRI riggers were called in to assist by placing additional booms around the Cove perimeter with yard launches. After contacting the subcontractor, McDonald & Watson, Mr. Chipman then reported the spill to the COTP at 1025. Mr. Peter Sullivan from the Rhode Island Department of Environmental Management, (RIDEM) arrived on site at 1040 and was brought up to date on the clean up operations underway. The United States Coast Guard, COTP were on site and appraised of the measures being taken to contain and clean up the area at approximately 1050. The emergency response team began procedures which continued through 1 November 1987, when the entire area was free of all fuel oil residue.

DERECKTOR
SHIPYARDS
NEW YORK
RHODE ISLAND
FLORIDA

RECEIVED
NOV 10 1987

File No: KA1187-30903

5 November 1987

Petty Officer Wolfe
United States Coast Guard
Marine Safety Office
Pastore Federal Building
Providence, RI 02903-1790

Dear Petty Officer Wolfe,

The enclosed Spill Report will provide the details of the incident that took place at our facility on 2 November 1987.

Hazardous Material Controller, Robert Chipman, instructed that the results of Chemical Analysis conducted on samples taken to investigate the source of this spill also be included. Based on the samples, the test results and the internal inquiry as to the cause of this spill Robert E. Derecktor of Rhode Island Inc. (REDRI) is holding the subcontractor, Aquakleen, financially responsible for the prompt and appropriate measures taken by REDRI to remove the pollutant.

If you have any questions please contact the undersigned, or Mr. Robert Chipman, at 272-2961.

Very truly yours,

Karen M. Augeri

Karen M. Augeri
Paralegal

cc: A. Cameron

ROBERT E. DERECKTOR OF RHODE ISLAND, INC., CODDINGTON COVE, MIDDLETOWN, RHODE ISLAND 02840
TEL: 401-847-9270 TWX: 710-387-6305 FAX: 401-

Spill Report

A fuel oil spill occured on Pier 1 of the Robert E. Derecktor of Rhode Island Inc. (REDRI) shipyard facility. The facility is located in Middletown, Rhode Island on 44 acres of leased Navy property, in Coddington Cove. Please see Figure 1, enclosed for site location. The shipyard has been in operation since 1979. The primary activities undertaken are military and commercial shipbuilding and repair.

At the time of the incident the REDRI subcontractor, Aquakleen, was performing services on the Pier. Aquakleen is located in Chelsea, Mass. at 333 Third St. the telephone number is 617-884-9252. REDRI point of contact was Mr. Patrick Canonica, Vice President. This subcontractor was hired to perform a variety of tasks in support of the REDRI repair contract on the U.S.S. Connole. The scope of work included fuel tank cleaning.

The incident took place on 2 November 1987 at the REDRI dry dock area, Pier 1. Mr. Lyn Mello of the REDRI Pipe Department was working on Pier 1 when he noticed a oily contamination on the water. The contamination was detected aft of the stern of the Connole berthed at the East end of Pier 1. Mr. Mello notified Mr. Paul Jordan, his supervisor. Mr. Jordan had crews called and instructed samples of the, as yet unidentified, contaminant be taken. In addition to samples of the water of Coddington Cove, samples were taken of the subcontractor, Aquakleen's, holding tank, the Connole bilges and the Aquakleen seperator.

When Mr. Mello reported the spill it was evening and darkness was falling. An oily sheen was visible on the water surface. At the time of the incident the subcontractor, Aquakleen, was engaged in pumping fuel from the Connole into their seperator. The good product, reuseable fuel, was going into a holding tank, situated on the Pier. The waste water from the seperator was being discharged into Coddington Cove. The REDRI Purchase Order for this job specified that the seperator was to be operated "only by a certified Aquakleen personnel as per U.S.C.G. regulations".

Mr. Robert Chipman, REDRI Hazardous Material Controller, contacted McDonald & Watson to perform clean up operations. Aquakleen's booms were utilized to contain the spill and additional personnel were called to assist in the clean up effort. Aquakleen employees did not assist in these efforts.

Spill Report

Mr. Chipman contacted the U.S.C.G., COTP to notify them of the spill. At this piont REDRI had not ascertained the exact nature or origin of the spill. Mr. Chipman spoke to the foreman in charge of the subcontractor's crew. The foreman denied any knowledge or responsibility for the spill. Mr. Chipman also requested he be allowed to review the subcontractor's certifications, Operations Manual and RIPDES Permit. Upon inspection Mr. Chipman discovered the RIPDES was complete on a draft basis only. At that time the Aquakleen crew ceased seperating operations. Later that day Aquakleen Vice President arrived at REDRI after being contacted and informed of a pollution incident. The Vice President, Mr. Hickey, also denied any Aquakleen involvement in the incident.

The samples taken by REDRI were analized by Envirosciences of Warwick, RI. The COTP took additional samples. The amount of this spill was not estimated. The COTP samples included the oily sheen from Coddington Cove water and the various Aquakleen equipment. This clean up effort was completed as of 1500 on 2 November 1987.

APPENDIX K

BUILDING 62 UNDERGROUND STORAGE TANK RECORDS AND CORRESPONDENCE

MACDONALD & WATSON WASTE OIL CO., INC.

LICENSED HAZARDOUS & NONHAZARDOUS WASTE, TRANSPORTATION & DISPOSAL SPECIALISTS

EPA # R.I. D093214260

POLE 18 • PEEPTOAD ROAD • NORTH SCITUATE, RHODE ISLAND 02857-9360

MAIN OFFICE (401) 232-2800 • BOSTON DIVISION (617) 289-6500

February 25, 1986

R. E. Derecktor of Rhode Island
Coddington Cove
Middletown, Rhode Island 02840

Attn: Jeffrey Crawford

Dear Jeff:

MacDonald & Watson is please to submit the following quotation for the removal of (2) two 6,000 gallon tanks, (2) two 3,000 gallon tanks and the removal of (1) one 550 gallon waste oil tank. Also to be included is the removal of (3) three islands to be regraded with exsisting ground. Cost of this proposal is $12,700.

If R. E. Derector supplies a crane to pull and load tanks on our trailer deduct $1,000.00 from proposal cost.

If tanks contains any product or water pumping will be $65.00 per hour for a vac/trailer plus .20¢ per gallon.

Should you have any further questions please feel free to contact my office.

Sincerely,

Frances E. Slade

Frances E. Slade
Hazardous Materials Div. Mgr.

RI #329 • ME #282 • MA #59 • CT #59 • NH #TNH 0079 • NY #RI 006 • NJ #S-9574

CODDINGTON COVE MAINTENANCE WORK ORDER
MIDDLETOWN, R. I.

No. C-00 1

Work Description

Expose, clean, remove from ground, and dispose of two (2) 6,000-gallon, two (2) 3,000-gallon, and one (1) 550-gallon waste oil tanks adjacent to Building 62. Tanks to be cleaned of all deleterious material and removed from site in accordance with EPA regulations. Area disturbed to be backfilled and leveled to normal ground elevation. Remove existing service island. Backfill and level these areas.

Reason For Work

In accordance with the Rhode Island DEM, these tanks are no longer able to be certified to stay in place. At their direction, these tanks must be removed. This work will be done in a manner approved by the DEM and under their jurisdiction.

Amount Approved for Work $ 12,700.00 ~~plus~~

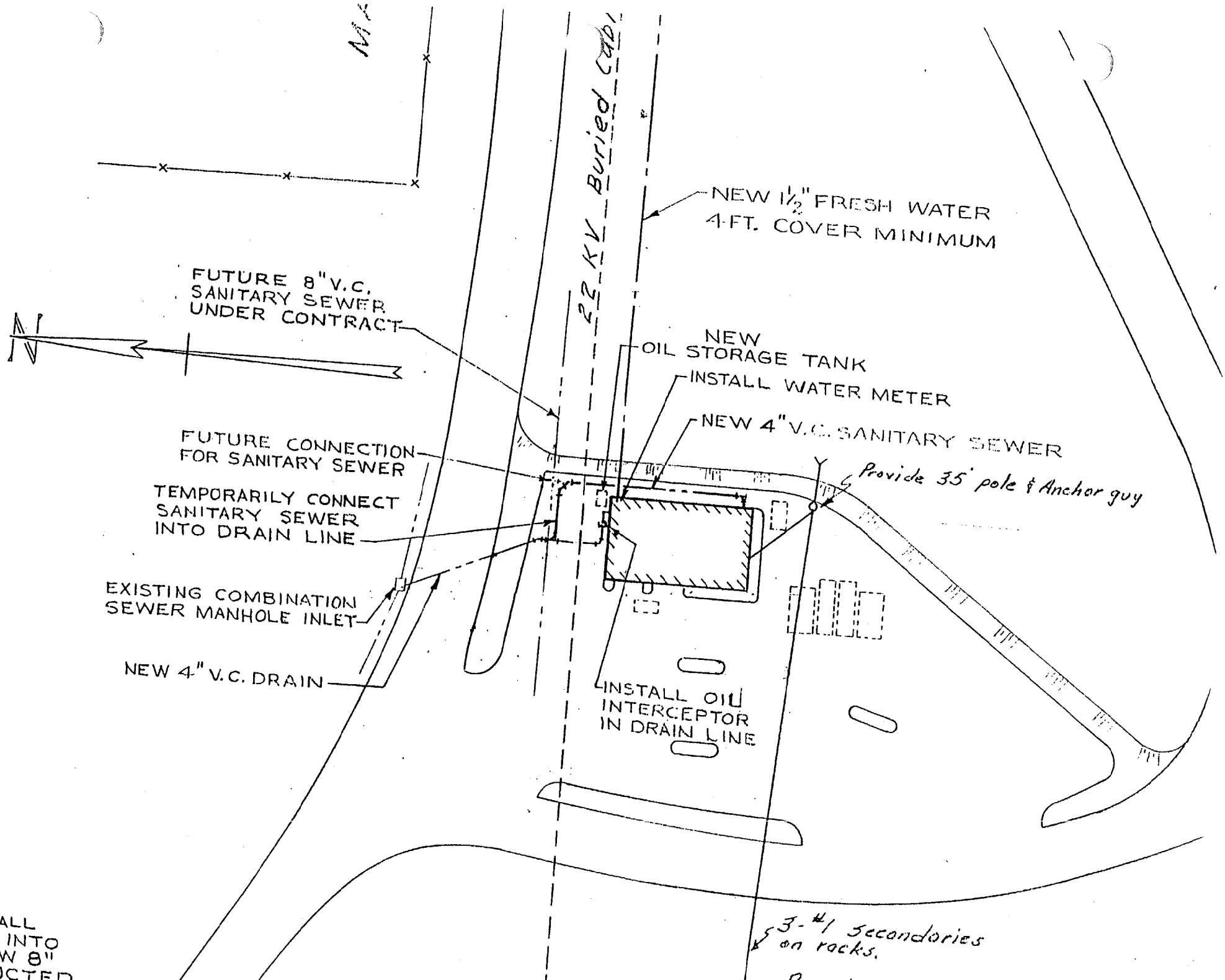
Estimated Completion Date _____

Date _____ Approved By Robert E. Derecktor, Inc

Date _____ Authorized By Navy

Date _____ Registration Port Authority

APPENDIX I to
EXHIBIT "A"



ER. SHALL
ARILY INTO
HE NEW 8"
NSTRUCTED

Adler Pollock & Sheehan Incorporated
2300 Hospital Trust Tower
Providence, Rhode Island 02903-2443
Telephone 401/274-7200
Fax 401/751/0604/351/4607
Telex 927661

ATTORNEYS AT LAW

ADLER POLLOCK & SHEEHAN

December 14, 1992

Mr. Philip S. Otis
Department of the Navy
Lead Activity Manager
Southern New England Team
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop #82
Lester, PA 19113-2090

Re: Derecktor Shipyard/Rhode Island

Dear Mr. Otis:

With respect to the above matter, as you requested, I am enclosing copies of underground petroleum tank closure certificates which were delivered to us by Derecktor.

If you have any questions or comments regarding the enclosed, please do not hesitate to call us.

Sincerely,

ROBERT I. STOLZMAN

RIS/dg
45

cc: Mr. Earl F. Queenan
Michael A. Kelly, Esq.
John P. Gyorgy, Esq.

820

RIPA / DEREKTOR

D·E·M

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF WATER RESOURCES
75 DAVIS STREET, ROOM 209
PROVIDENCE, RHODE ISLAND 02908
(401) 277-2234

OCT 13 1992

CERTIFICATE NO. ~~[illegible]~~ 820

no more tanks

CERTIFICATE OF CLOSURE
FOR UNDERGROUND STORAGE FACILITIES

In compliance with Chapter 46-12 of the Rhode Island General Laws, as amended, and the Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials,

Robert E. Direktor

owner/operator of an underground storage facility located at

Coddington Cove
Middletown, RI

is issued this Certificate of Closure indicating that the storage tanks described below have been taken out of service permanently, in compliance with the Regulations for Underground Storage Facililties Used for Petroleum Products and Hazardous Materials.

Remarks:

2 - 6000 gallons
2 - 1000
2 - 250
1 - 500

Signed this 11th day of June, 19 87

Reviewed by: Mary Toti

Approved: for H. Anarumo
CHIEF, DIVISION OF WATER RESOURCES
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PROVIDENCE, RHODE ISLAND

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF WATER RESOURCES
75 DAVIS STREET ROOM 209
PROVIDENCE, RHODE ISLAND 02908
(401) 277-2234

PERMANANT CLOSURE APPLICATION

For Underground Storage Facilities

INSTRUCTIONS

1. Section 15 of the Department of Environmental Management's Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials requires that this application be submitted to the above address at least ten (10) days prior to closure of an underground storage tank, and that the Department be notified at least 72 hours in advance of the date and time of closure to permit inspection.

2. All applicable information must be provided to the Department in order for this application to be considered valid, and for the Department to issue a certificate of closure. Action taken to close an underground storage tank without meeting the requirements of #1, above and the permanent closure procedures listed in the regulations (copy attached) shall be considered in violation of the regulations and subject to fines and penalties referenced therein.

3. Any questions in regard to closure procedures or information to be provided in application for closure should be directed to the Department at the address and phone number listed above

4. Persons closing underground storage tanks should contact the appropriate city or town offices (e.g. fire department) to be sure that they do so in compliance with local requirements.

STATE # 872 31482 NAVY R-393

A. Date of Application:_____

B. Date [illegible] nk(s) to be closed:_____

C. [illegible] e time that tank(s) to be closed:_____

D. [illegible]erground Storage Facility Registration Number:_____
(if applicable)

E. Facility Name: Director
Street Address: Coddington Cove
City/Town: Middletown, RI

F. Tank Owner's Name: Dept. of the Navy
Street Address: NETC
City/Town: Middletown
State: RI

Mary Toty

	Tank No.	Tank No.	Tank No.	Tank No.
G. Tank Number (from application for registration or arbitratily assigned sequential number)	1	2	3	4
H. Estimated Tank Age (years):	30 yrs	"	"	"
I. Estimated Date Tank Last Used:				
J. Estimated Capacity of Tank (in gallons):	6000	6000	4000	4000
		5000 D	2500 B	2500 B
K. Material of Construction				
1. Steel	Steel	Steel	Steel	Steel
2. Concrete				
3. Fiberglass				
4. Other (specify)				
L. Material Last Stored in Tank				
1. Petroleum product (specify):				
a. gasoline (including alcohol blends)	A	D	B	A
b. No. 1-D (light diesel fuel)				
c. No. 2 fuel oil (home heating oil)				
d. No (diesel fuel)				
e. [illegible] oil				
f. Other (specify)				
2. Hazardous materials: (name of substance or substances):				
3. Unknown				

M. Closure Procedure (select one):

1. ____ Precision test and fill with inert material (Section 15 (f)(2))

NOTE: APPROVED PRECISION TEST MUST BE CONDUCTED AND RESULTS MUST BE SUBMITTED PRIOR TO FILLING

2. ✓ Excavate, clean and dispose (Section 15 (f)(1))

a. Specify method of tank cleaning: Triple Rinse

b. Will tank be disposed of ✓ or reused ____?

i. If disposed of, you MUST specify method of rendering tank unfit for future use: Triple Rinse Tank with any Tool Cut Inspection Hole For

Will this be done onsite ✓ or offsite_____?

Where will the tank be disposed of (facility or location name and address)?: State Line Scrap N. Attleboro Mass 02801

ii. If the tank is to be reused, specify:
--purpose of use_____
--name and address of intended user_____

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNED BY: [signature]
TITLE: Construction Supervisor
ADDRESS: 129 West Main Millbury Mass
TELEPHONE: 617 791-7999

REPORT OF PHONE CALL
VISIT

In _____ Out ✓ _____ File _____

Date 14 Dec 88 Time 1100 Routing _____

Person Contacted Ralph Carr Phone No. _____

Location RE Director of RI, Cuddington Cove Middletown RI 02842

Subject Extension of Temp Closure

Summary Sam C & myself met with Ralph C the Standard gas station. Mr Carr told us that there are currently 4 tanks in the ground. ~~[illegible]~~ He told us that a 500 Gallon Tank (n=5?) had been removed years ago. We took the 4 Tanks here what we found. The ~~[illegible]~~ Southern most tank (600 gal) had about 2" of product in it. Going from South to North the next tank was a 300 gal with 1½" of product next was a 300 gal with 1" and finally a 600 gal with 9" of product in it. We told Ralph C to clean the remaining tanks and get back to us to request the 6 mo Temporary Tank Extension

Action Required Will wait till he has contacted us.

MDZ
Signature

[illegible] Development who subleases it out to Director, Ralph Fels, that the Wing will soon want the land land the tanks are on for a parking lot. He wants an extension of Cemetery so he doesn't have to pay the cost of excavating the tanks.

RECEIVED
R.I. DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
APR 24 1985
DIVISION OF WATER RESOURCES

75 DAVIS STREET ROOM 209
PROVIDENCE, RHODE ISLAND 02908
(401) 277-2234

APPLICATION

For Underground Storage Facilities
- Certificate of Registration -

85/04/24

REGISTRATION NUMBER: 82

FACILITY NAME: Robert F. Dereakton of R.I. Inc DATE: April 18, 1985

STREET ADDRESS: Goddington Cove /X/ OWNER

CITY/TOWN: Middletown, Rhode Island ZIP 02840 /__/ OPERATOR

1) Is this a /__/ New or, /X/ Existing Facility? 19

2) Date operation commenced 99

3a) If a New facility, is a set of detailed engineering plans and project specifications, including operation and maintenance requirements enclosed? /__/ Yes /X/ No (See Section 6,b,1)

b) If an Existing facility, is a site plan of all equipment locations enclosed? (See Section 6,b,2) /__/ Yes /X/ No

4) PRECISION TESTING

(a) Are precision testing results available? /__/ Yes /X/ No
Enclose these results if available.

(b) Date of most recent precision testing Unknown if any

c) Specify where testing has been performed /__/ Tanks /__/ Lines

(d) Specify when testing was performed /__/ Before installation /__/ After installation

5) TANK INFORMATION

	No.	Age	Volume	Material/ Construction	Stored Material	Tank Corrosion Protection Devices
1	1 E	4 Yrs	10,000 G	Metal 08	* #2 Fuel Oil 02	None 98
2	1 E	3 Yrs	10,000 G	Metal 08	* #2 Fuel Oil 02	None 98
4	2 CA	Unknown	6,000 G	Metal 08	Empty 2 99	None 98
5	1 CA	Unknown	3,000 G	Metal 08	500 G Diesel DS	None 98
6	1 CA	Unknown	3,000 G	Metal 08	Empty 99	None 98
7	1 CA	Unknown	250 G	Metal 08	Empty 99	None 98
8			250			
9			500			

Site Closure

6) a) Dispensing Pump System /__/ Island /__/ *Remote (Sump) (See below) /X/ Other Fuel Oil Only Pump at Boiler

a) Line Leak Detection System Installed /__/ Yes /X/ No

b) Does the base of the dispensing unit have an emergency shut off valve? /X/ Yes /__/ No

7) U.L. Standard Used Unknown

8) Are recovery wells installed? /__/ Yes /X/ No

9) Are monitoring wells installed? /__/ Yes /X/ No

10) Does a drinking water supply exist within 1,000 feet of the facility location?
/__/ Yes /X/ No

Specify Type: /X/ Public /__/ Private /__/ Underground Well
/__/ Surface Source /__/ Water Body (name)

11) Have any leaks or spills occurred at this facility? /__/ Yes /X/ No
(Please attach report/description of incident)

12) COMPLETE THIS SECTION IF THERE ARE ABANDONED OR EMPTY TANKS AT FACILITY

a) How many tanks are presently abandoned or empty? Four #3 #4 #6 #7

b) Classify the type of tank closure /__/ Temporary /X/ Permanent Concrete Slab Over
(See Section 13)

c) Has precision testing been conducted on the empty tanks? /__/ Yes /X/ No
(Please include these results if available)

d) Results of precision test /__/ Positive (leaks) /__/ Negative (no leaks)

e) Will empty or abandoned tanks be /__/ filled or /__/ removed? Unknown at this time

13) Include any additional information/remarks:

See DEM "Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials"

Submitted by: Ralph S. Carr Jr Facilities Engineer

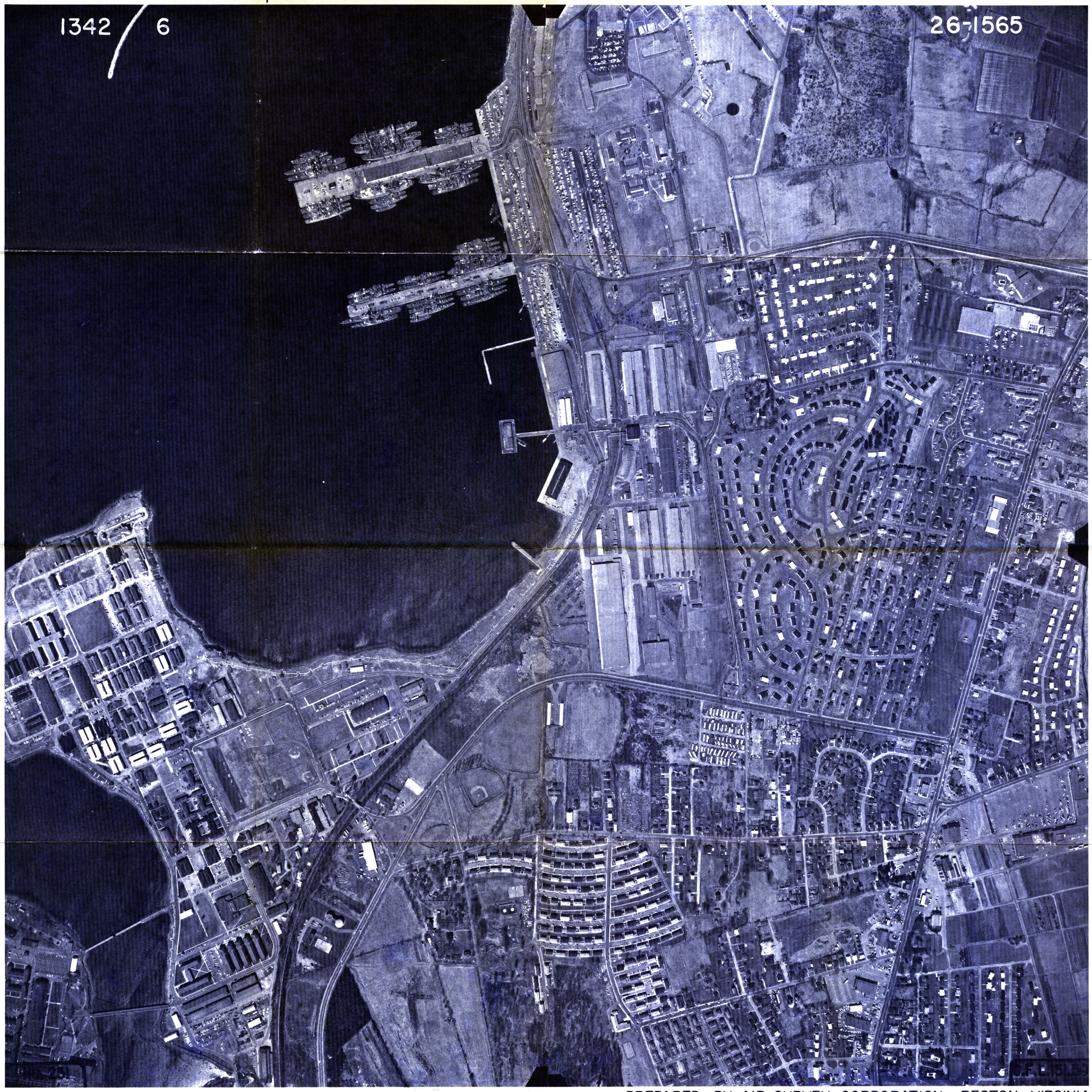
Address: R.E. Derecktor Of R.I. Inc. Coddington Cove, Middletown

Telephone Number: 847-9270 Ext 268

APPENDIX L

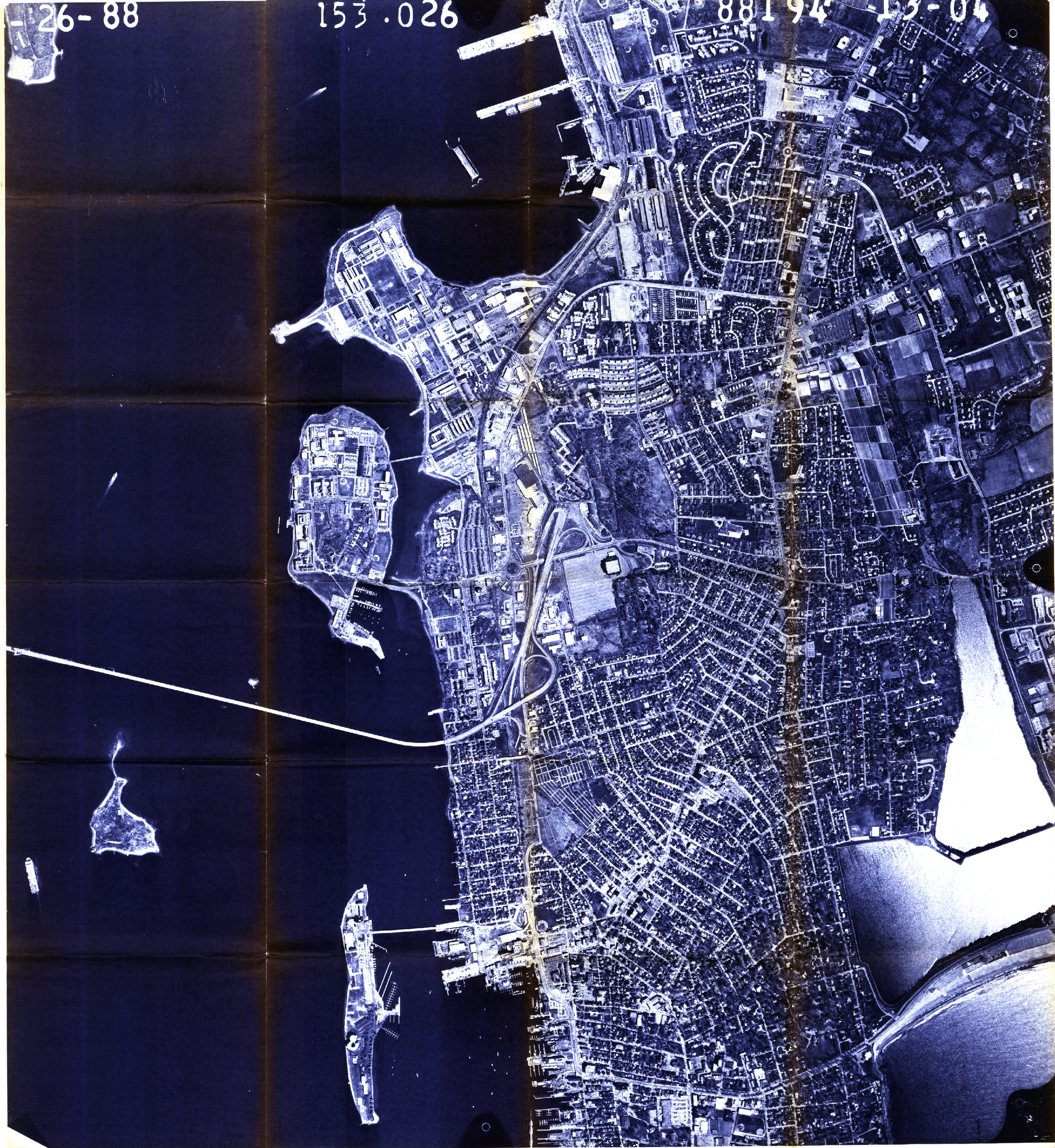
AERIAL PHOTO OF NEWPORT, 1965

DATE OF PHOTOGRAPHY APRIL 6, 1965



PREPARED BY AIR SURVEY CORPORATION, RESTON, VIRGINIA.

-26-88 153.026 881 94-13-04



APPENDIX M

TRANSFORMER T-266 RECORDS

DEPARTMENT
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND 02841-5

IN REPLY REFER TO:
5090
Code 42P

27 MAR 1986

Rhode Island Port Authority and
Economic Development Corporation
Seven Jackson Parkway
Providence, RI 02903

Gentlemen:

Please be advised that electrical transformer T-266 located on Pier No. 1 at Load center 2, Building 395 will be removed by September 1986.

Enclosure (1) shows the PCB concentration to be 56 ppm and the U.S. Environmental Protection Agency (EPA) considers this transformer to be a "PCB Contaminated Transformer" which can pose an exposure risk to food or feed. Transformer T-266 is located on Pier 1 on Narragansett Bay, and within a mile of a productive muscle farm.

Any questions concerning our letter should be addressed to Mr. J. Beliveau at 841-2161.

D. R. Sheaffer

D. R. SHEAFFER
CAPT, CEC, USN
Director for Public Works
By direction
of the Commander

Copy to:
NORTHNAVFACENGCOM Code 114

DEPARTMENT OF THE NAVY
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND 02841-5000

IN REPLY REFER TO:

5090
Ser 242/422

16 FEB 1988

Rhode Island Port Authority and Economic Development Corporation
Seven Jackson Parkway
Providence, RI 02903

Re: Removal of Transformer T-266

Gentlemen:

In accordance with our letter of 27 March 1986, NETC is preparing to remove transformer T-266 in Load Center 2 from Pier 1. This transformer is classified as PCB contaminated and in accordance with EPA Federal Regulations cannot remain installed in an area where potential contamination of the marine environment may occur. The unit is currently being utilized by the R. E. Derecktor Shipyard. The Port Authority should take appropriate action to assure continued electrical service to all Shipyard facilities upon removal. We anticipate award of a contract for removal in April of 1988 with completion in June of 1988.

Sincerely,

D. S. BIANCHI
LCDR, CEC, USN
Assistant Director for Public Works
By direction of the Commander

DEPARTMENT OF THE NAVY

Memorandum

Code 40E : RTM

DATE: 31 Dec 91

FROM: 40E
TO: 42

SUBJ: DERECKTOR SHIPYARD - PCB TRANSFORMER T-266

REF: (a) Discussion Code 42 and Code 40E circa 16 Dec 91
(b) Code 424 Memo dated 31 Oct 91
(c) NORTHNAVFACENGCOM LTR 11011 Code 2416 of 5 Dec 91

1. As requested by references (a) and (b), the status of the transformer T-266 located at Pier 1, Derecktor Shipyard was investigated during the recent Environmental Compliance Evaluation conducted by Northern Division during 4-6 November, 1991, reference (c). As a result of this inspection, the transformer remains in service at Pier 2. The records of analysis for the transformer were reviewed and the results are inconclusive. The discrepancy in testing results appears to be associated with the sampling location. A letter submitted by Westinghouse in December 1986 suggested that additional samples be taken. To date, this has not been done.

2. We continue to show the item in our records as a Navy-owned transformer. Recommend that this transformer be resampled from multiple locations to determine whether it is PCB contaminated. Upon completion of the sampling and test results, the disposition of the transformer can be resolved.

RTM

Copy to:
40A/40

DEPARTMENT OF THE NAVY

Memorandum

Code 424E : RTM

DATE: 8 Feb 91

FROM: 424E
TO: 42 _____
424 _____

SUBJ: UPDATE FOR REMOVAL OF PCB TRANSFORMERS

REF: (a) Code 424E Memo of 24 Dec 90

1. Upon reviewing the list of PCB transformers greater than 50 ppm PCB.., reference (a), and required to be removed in accordance with EPA regulations, there are several transformers which require immediate removal by law. Of particular concern, the transformer at Pier 1, Derecktor's is still in service. This transformer should have been removed in 1985 in accordance with EPA TSCA regulations; it contains 56 ppm PCB and is located in an area where a transformer failure can pose an exposure risk to human health and environment. We continue to show the item on our records as a Navy-owned PCB contaminated transformer. We contracted for the removal of this transformer in 1988. However, removal was terminated at the request of R. E. Derecktor. Please advise regarding the status of its removal or retrofill by Derecktor. Code 45 is in the process of confirming the location of other transformers which require immediate removal action.

2. In addition, Code 45 is in the process of confirming the exact location of PCB pole mount transformers greater than 50 ppm PCB which require removal. It should be noted that under MILCON P-365, some of the transformers will be removed/replaced. Confirmation of the location of transformers which must be removed should be completed by the end of March. I am in the process of getting a list of transformers which will be replaced by P-365. A final list of PCB transformers which require replacement will then be compiled. Code 422 has prepared a cost estimate which will need revision as a result of the MILCON transformer replacement. As soon as I have compiled a final list, a PCB Elimination Plan will be completed.

Copy to:
422
45

copy

DEPARTMENT OF THE NAVY
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND 02841-5000

IN REPLY REFER TO:
5090
Ser 516/40E:RM
27 SEP 1991

United States Environmental Protection Agency
Region I
Attn: Ann Fenn
Hazardous Waste Management Division, Rm 2203
John F. Kennedy Federal Building
Boston, MA 02203

Dear Ms. Fenn:

We have completed a review and disposition audit of all our known PCB transformers in service as of 1980 to the present. We have identified 291 PCB transformers. We have removed 239 transformers from service and we have disposal manifest documentation for each. The remaining 52 transformers are planned for removal or are already in storage awaiting disposal by the Defense Reutilization and Marketing Office (DRMO) Contractor.

As requested by Ms. Linda Marinelli, we are responding to the specific transformers which could not be reconciled during your Multimedia Inspection of 8-9 July, 1991. The status of each of these units is as follows:

T042B - Located behind our Package store. This PCB transformer is contracted for removal under our Military Construction Project P-365. We anticipate its removal in early 1992.

T14P - Located at Bldg. 1170 NUSC. It is PCB contaminated containing 286 PPM PCB. We are planning its removal in FY92.

T151P - This transformer was erroneously listed as a PCB transformer in our records. It was "Blue Labeled", Non PCB, in the field creating confusion. The serial number does in fact verify that it is a non PCB transformer.

T110P - This transformer was removed and properly disposed of under Manifest RI#001455 in 1982.

T129 - This transformer could not be field located due to a recent switch in pole numbering systems. We tracked the transformer by serial number and found that it had been disposed of under manifest #C308D dated 7 April 88. The transformer was in fact a non-PCB unit.

T475B - Again we tracked this unit by serial number. It is a PCB transformer in storage for disposal by DRMO.

T521B - This unit was located in service on pole 227 Melville. We are planning its removal.

T523B - This unit is also on pole 227 in Melville and is scheduled for removal.

T266 - This unit is located in the Derecktor Shipyard area at Pier 1. Our testing records indicate that the unit is PCB contaminated. We had scheduled its removal, however, the Shipyard presented conflicting evidence of its PCB content. Since we have not received corroborating information from the Shipyard, we are again planning its removal.

We are currently reviewing our records with respect to the status of PCB containing circuit breakers and capacitors. To date, we have found no PCB capacitors as we made efforts to dispose of all capacitors in 1980 - 1982. We have likewise not found any PCB contaminated circuit breakers, however, our testing of these units is incomplete.

With respect to Ms. Marinelli's questions regarding PCB spills in the past two years, we have reviewed our records and find no indication of spills, however, we are conducting interviews with our present and past employees to gather information on any known spills as we suspect that there were minor instances of spills in storage areas that were not documented. Our effort in this area is on going. We will provide a comprehensive follow up report.

We have recently implemented improved management control measures. Specifically, all hazardous substances will be tracked by one office from inception of a removal action to ultimate terminal disposal. We further anticipate the removal of all known PCB transformers from service by the end of next year.

If you have any questions, our point of contact regarding these transformers is Mr. Jack Beliveau 401 841-2161 or our Environmental Engineer, Ms. Rachel Marino at 401-841-3735.

Sincerely,

JOHN D. LUKE
Captain, U. S. Navy
Commander

Encl: (1) Spread Sheet
- Inventory Summary Pages 1 & 2
- EPA Multimedia Inspection 8, 9 July 91, Page 3
- Listing of PCB transformers by I.D. number, Pages 4-8.
- Listing of PCB transformers by manufacturers serial number, Pages 9-13.

(2)	T110P	Documentation
(3)	T151P	Documentation
(4)	T042A	Documentation
(5)	T129	Documentation
(6)	T266	Documentation
(7)	T475A	Documentation
(8)	T521A	Documentation
(9)	T523A	Documentation

Copy to:
RIDEM (Cynthia Gianfrancesco)
NORTHNAVFACENGCOM (Code14, Mr. Paul Burgio)
CNET N4
COMSUBGRU-2

YELLOW

ROBERT

T266

1 of 3

Westinghouse
Electric Corporation

10 California Avenue
Box 1060
Framingham Massachusetts 01701

December 6, 1988

R. E. Derecktor of Rhode Island
Coddington Cove
Middletown, RI 02840

Attention: Mr. Mark S. Donahue

Reference: Your Purchase Order No. R-8-1217
(W) Job No. BSSD-205

Dear Mr. Donahue,

Enclosed please find a copy of the tests report concerning the oil samples taken from your facility. This report is for your information and files.

Due to the discrepancy in PCB concentration for Transformer #6531132 (T-266), Westinghouse suggests sending an additional sample to a different Westinghouse lab for verification.

Please feel free to call me to arrange for this service or if you have any questions.

Sincerely,

Robert Nadolny

Robert E. Nadolny
Service Coordinator
New England Engineering Service
(508)620-3340

REN:aaf
Enclosures

Westinghouse Electric Corporation

Engineering and Instrumentation Services Division Laboratory
Pittsburgh, Pennsylvania

Transformer Insulating Liquid Analysis
OIL ANALYSIS

T 266
2 of 3

Westinghouse Electric Corporation
P. O. Box 1060
10 California Avenue
Framingham, MA 01701

Date Tested: 10-14-88
Customer: DERECKTOR SHIPYARD
Laboratory No.: 88-3349
P. O. No.: BSSD-205-02

	1	2	3
TRANSFORMER SER. NO.	6531131 T-265	6531132 T-266	6531130 T-267
SOURCE OF SAMPLE	MAIN TANK BOTTOM	MAIN TANK BOTTOM	MAIN TANK BOTTOM

ANALYSIS RESULTS:

GENERAL CONDITION	AMBER CLEAR	AMBER CLEAR	YELLOW CLEAR
DIELECTRIC STRENGTH - kV(60 Hz @ 25°C)	47.2	59.4	42.1
POWER FACTOR - Percent(60 Hz @ 25°C)	.060	.060	.050
INTERFACIAL TENSION - dynes/cm	30.6	32.0	33.2
NEUTRALIZATION NO. - mg KOH/gram	.019	.032	.010
COLOR - ASTM D-1500	2.5	3.0	2.0
MOISTURE - ppm	8	9	4
POUR POINT - °F	<-40	<-40	<-40

The following suggestions and remarks are in compliance with recommended values established by Westinghouse Power Equipment Division.

1. Sample is good for continued use.
2. Sample is good for continued use.
3. Sample is good for continued use.

I hereby certify that this report is a true record based on laboratory te performed in accordance with all applicable, current A.S.T.M. methods.

Technician R.D.M. Approved HCM

It is recommended that a dissolved gas analysis be performed every six months to determine what gases are present in the oil what changes, if any, have occurred. Early detection of combustible gases may indicate a possible malfunction in the transfo Once diagnosed, an orderly maintenance plan can be scheduled thereby avoiding unexpected interruptions.

REPORT DATE: 10/14/1988

Westinghouse Electric Corporation
Engineering and Instrumentation Services Division Laboratory
Pittsburgh, Pennsylvania
Polychlorinated Biphenyls Analysis

T266
3d3

Westinghouse Electric Corporation
P. O. Box 1060
10 California Avenue
Framingham, MA 01701

Date Received: 10/13/88
Customer: DERECKTOR SHIPY
ISD Number: 88-3349
P.O. Number: BSSD 20502

SAMPLE	SERIAL NUMBER/SOURCE	DATE SAMPLED	DATE TESTED	AROCHLOR CONCENTRATIONS, PPM 1242	1254	1260	TOTAL PCB PPM	CC
1	653113[illegible](MAIN/BOTTOM)T-265	10/12/88	10/13/88	0	0	10	10	
2	653113[illegible](MAIN/BOTTOM)T-266	10/12/88	10/13/88	0	0	42	42	
3	653113[illegible](MAIN/BOTTOM)T-267	10/12/88	10/13/88	0	0	16	16	

(S) Corrected for recovery by an addition of a known amount of PCB to the sample

NOTE: The results reported here are obtained by the methods recommended by the U. S. EPA. These methods include correction of PCB concentrations recovery. The quality assurance of the data meets the standards of the U.S

Technician [signature] Approved _____
Report Date: 10/14/1988

REPORT NO. 7

Lab Requisition No. C-6179

Date Sample Rec'd 11-2-84

Authorization P.O. No. N0014-85-MD77
Dated: 10-23-84

T-266

Date Sampled

Date Tested 11-7-84

To Naval Education Training Center
Newport Naval Base
Newport, RI
Attn: Mr. Richard Gagnon-Building One

Test Bottles
DOC# 75094-75095

Test Results Telephoned to:

Date

METHOD: ☐ EPA "The Analysis of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils" (DTM-35)

☑ ASTM D 4059 Standard Method for Analysis of Polychlorinated Biphenyls in Mineral Insulating Oils by Gas Chromatography

☐ Other

SAMPLE IDENTIFICATION	TOTAL PCB CONTENT (PPM)	MAJOR AROCLOR	NETC TRF. #
1 LC#2 TRF# Sample #1	14	1260	T-265
" #2 " #2	56	1260	T-2
LC#3, TRF# #3	14	1260	T-267
" #4	5	1260	T-272
" #5	38	1260	T-272
" #6	<5		T-276
" #7	<5		T-276
" #8	9	1260	T-274

NOTES

1. Experimental Error:
   ND* – 100 ppm, ± 5 ppm
   Over 100 ppm, ± 10%
   *None Detected
2. EPA will not consider it to be good judgment to assume that a sample has less than 50 ppm PCB when the experimental error of the procedure overlaps the cut-off point.

Federal Register 5/31/78, Page 31538)

COMMENTS:

By Mark R. Koenig

DOBLE ENGINEERING COMPANY 85 WALNUT STREET WATERTOWN, MASSACHUSETTS 02172

T-265

CEIMIC
CORPORATION
"Analytical Chemistry for Environmental Management"

April 7, 1992

Ms. Rachel Marino
NETC
Code 424E, Bldg 1
Newport, RI 02841

Dear Ms. Marino:

Enclosed is the data report of results for the analyses of samples received at Ceimic Corporation on March 26, 1992.

Please don't hesitate to contact me if you have any additional questions.

Sincerely,

Veronica Moretti

Veronica Moretti
Marketing Representative

VM/11

enc.

Bottom of tank
½ pt sample

4/13
Took to talk to Dan Lemoyne
about ~~steel~~ sampling

10 Dean Knauss Drive, Narragansett, R.I. 02882 • (401) 782-8900 • FAX (401) 782-8905

CEIMIC
CORPORATION
"Analytical Chemistry for Environmental Management"

SURROGATE RECOVERY SUMMARY

Organochlorine Pesticides Analysis

Client: NETC

Date Samples Received: 3/26/92

Project No.: 920154

Client ID	Laboratory ID	TCX	DCB
T-266 Main Tank	920154-01	84%	50%
QA/QC			
Method Blank	P0330-B1	90	50
Laboratory Control Spike	P0330-LCS1	75	65

TCX = Tetrachloro-m-xylene
DCB = Decachlorobiphenyl

Reported by: CR

10 Dean Knauss Drive, Narragansett, R.I. 02882 • (401) 782-8900 • FAX (401) 782-8905

CEIMIC
CORPORATION
"Analytical Chemistry for Environmental Management"

PRIORITY POLLUTANTS

ORGANOCHLORINE PESTICIDES

EPA Method 608/8080

Client: NETC
Client Sample ID: T-266 Main Tank
Date Sample Received: 3/26/92
Date Sample Analyzed: 4/02/92

Laboratory ID: 920154-01
Date Sample Prepared: 3/30/92
Concentration in: ug/L (ppb)

Target Analyte	Sample Concentration	Method Reporting Limits
PCB-1016	ND	50
PCB-1221	ND	50
PCB-1232	ND	50
PCB-1242	ND	50
PCB-1248	ND	50
PCB-1254	ND	100
PCB-1260	670	100

ND = Not detected

$\frac{670}{1000} = .67$ ppm

per EPA Limit is 50 ppm

Per EPA

Reported by: CR

Approved by: [signature]

10 Dean Knauss Drive, Narragansett, R.I. 02882 • (401) 782-8900 • FAX (401) 782-8905

CEIMIC
CORPORATION
"Analytical Chemistry for Environmental Management"

PRIORITY POLLUTANTS

ORGANOCHLORINE PESTICIDES

EPA Method 608/8080

Client: NETC
Client Sample ID: Method Blank
Date Sample Received: NA
Date Sample Analyzed: 4/01/92

Laboratory ID: P0330-B1
Date Sample Prepared: 3/30/92
Concentration in: ug/L (ppb)

Target Analyte	Sample Concentration	Method Reporting Limits
PCB-1016	ND	0.50
PCB-1221	ND	0.50
PCB-1232	ND	0.50
PCB-1242	ND	0.50
PCB-1248	ND	0.50
PCB-1254	ND	1.0
PCB-1260	ND	1.0

NA = Not applicable
ND = Not detected

Reported by: CR

Approved by: [signature]

10 Dean Knauss Drive, Narragansett, R.I. 02882 • (401) 782-8900 • FAX (401) 782-8905

CEIMIC
CORPORATION
"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SUMMARY

ORGANOCHLORINE PESTICIDE ANALYSIS

EPA Method 608/8080

Client: NETC

Project No.: 920154

Matrix: Aqueous

Laboratory Control ID: P0330-LCS1

Date of Preparation: 3/30/92

Spike Compound	Blank Spike	Recovery QC Limits*
Aroclor 1260	90%	50-150%

* = These limits are for advisory purposes only.

Reported by: CR

Approved by: [signature]

10 Dean Knauss Drive, Narragansett, R.I. 02882 • (401) 782-8900 • FAX (401) 782-8905

THIS REQUEST MUST BE ACCEPTED ON A DIRECT CITATION BASIS ONLY AND IS SUBJECT TO THE CONDITIONS LISTED ON THE REVERSE SIDE.

2. DOCUMENT NO. N62661 92RC56615

3. REFERENCE NUMBER	4. FUNDS EXPIRE ON	5. DMS RATING	6. PRIORITY	7. DATE REQUIRED	8. AMENDMENT NO
	9/30/92		10	4/8/92	

9. FROM
N62661
NAVAL EDUCATION AND TRAINING CENTER

10. FOR DETAILS CONTACT:
RACHEL MARINO/CODE 40E
841-3735

11. TO:
NAVAL SUPPLY CENTER NORFOLK
NEWPORT DETACHMENT, BLDG 80
UIC NEWPORT, RI 02841-5000

12. MAIL INVOICES TO:
COMMANDER, NETC
NEWPORT, RI 02841-5000
VOUCHER PAYMENT SECTION
BLDG 47

13. ACCOUNTING DATA TO BE CITED ON RESULTING CONTRACTS

A. ACRN	B. APPROPRIATION	C. SUB-HEAD	D. OBJ. CLASS	E. BU. CONTROL	F. SA	G. AAA	H. TT	I. PAA	J. COST CODE	K. AMOUNT
AA	1721804	6283	000	62661	0	068566	2D	C56615	626612FTENV	~~$150.00~~ 155.00

14. AMOUNTS WILL NOT BE EXCEEDED IN THE OBLIGATION DOCUMENT WITHOUT PRIOR WRITTEN APPROVAL FROM THE ISSUER.

L. TOTAL THIS DOCUMENT ~~$150.00~~
M. CUMULATIVE TOTAL ~~$150.00~~

15. PROCUREMENT BY CONTRACT OF THE FOLLOWING ITEMS IS REQUESTED:
THESE ITEMS ☐ ARE ☑ ARE NOT INCLUDED IN THE INTERSERVICE SUPPLY SUPPORT PROGRAM AND REQUIRED INTERSERVICE SCREENING ☑ HAS ☐ HAS NOT BEEN ACCOMPLISHED

REVIEWED BY NETC COMPETITION ADVOCATE

PROCESSED BY TECHNICAL

92 MAR 25 P2:57

A.	B. ITEM	C.	D. DESCRIPTION (TECHNICAL SPEC. AND/OR DRAWING NO., ETC.)	E. QUANTITY	F. UNIT	G. ESTIMATED UNIT PRICE	H. ESTIMATED AMOUNT
	1		CONDUCT CHEMICAL ANALYSIS FOR POLYCHLORINATED BIPHENYL (PCB'S) ON TRANSFORMER T-266 FROM PIER 1. TEST METHOD 8080. SOURCE--NE TESTING LABS, INC. 1254 DOUGLAS AVENUE N. PROVIDENCE, RI 02904-5392 POC LYNN SMITH 401 353-3420 CEIMIC NARRAGANSETT, RI 02882 POC JAN 401 782-8900 RI ANALYTICAL LABS, 231 ELM STREET WARWICK, RI 02882 POC DEBBIE 401 737-8[illegible]	1	EA	~~$150.00~~ 155.00	~~$150.00~~ 155.00

BPA NR. N00189-90-A-0154
ORDER DATE 25 MAR 92
DELIVERY DATE 15 APR 92
CAL NR. A001
VENDOR REP. Ronnie Moretti
SIGNATURE [signature]

16. SEE ATTACHED PAGES FOR DELIVERY SCHEDULES, PRESERVATION AND PACKAGING INSTRUCTIONS, SHIPPING INSTRUCTIONS AND INSTRUCTIONS FOR DISTRIBUTION OF CONTRACTS AND RELATED DOCUMENTS.

I. GRAND TOTAL ~~$150.00~~ 155.00

17. TRANSPORTATION [illegible] (if FOB Contractor's plant)

MONETARY RESTRICTIONS

18. VARIATION EST. DOLLAR VALUE AUTHORIZED
I CERTIFY THAT THE FUNDS CITED ARE PROPERLY CHARGEABLE FOR [illegible] ED.

AUTHORIZING OFFICIAL (NAME, TITLE AND SIGNATURE)
R. V. HUMPHREYS, LCDR, CEC, USN
ASST DIRECTOR FOR PUBLIC WORKS
DATE 3/25

19. 20% OR $500.00 WHICHEVER IS LESS D-25K
THIS REQUEST IS ACCEPTED AND THE ITEMS WILL BE PROVIDED IN ACCORDANCE HEREWITH.

ACCEPTING OFFICIAL (NAME, TITLE AND SIGNATURE)
Veronica Moretti
DATE 3/26/92 9:05 AM

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

To Stephanie	From Rachel
Dept./Agency NoDiV	Phone # 401-841-3735
Fax # 215-595-0668	Fax # 401-841-4599

# of pages ▶ 1

SN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DEPARTMENT OF THE NAVY

Memorandum

Code 40E:RTM

DATE: 6 Jan 92

FROM: Rachel Marino, NETC Code 40E

TO: Stephanie Danko Zamorski, NORTHNAVFACENGCOM Code C24

SUBJ: ELECTRICAL TRANSFORMERS LOCATED AT R. E. DERECKTOR

1. There are three pole mount transformers located in the Derecktor leased property, north of the dry dock, at an old NETC electrical substation. NETC's transformer inventory records show that these transformers do not belong to NETC. According to Newport Electric's, Mr. Mike Sumner, these transformers do not belong to Newport Electric.

2. Recommend that RIPA advise us regarding the status and disposition of these transformers during the next meeting.

Rachel Marino

Copy to:
NETC Code 42

Forward to North Div Hep. Danke done

JJB

DEPARTMENT OF THE NAVY

Memorandum

DATE: 4 JAN 93

FROM: Mark Rielly

TO: Rachel Marino RTM 1/4/93

SUBJ: TRANSFORMERS LOCATED AT DERECKTOR SHIPYARD

1.According to the Ser. numbers and the Mnf. ID, the three transformers located at the old sub station on Derecktor leased property belong to Mr.Derecktor.

2. I spoke with the NETC Electrical Branch concerning the problem of ownership. According to various personal and there transformer inverntory,the ID numbers and Mnf. brand do not belong to NETC.

3. According to NEWPORT ELECTRIC via phonecon with Mike Summner, the three transformers in question of ownership are not the property of NEWPORT ELECTRIC.

4. The problem with ownership of the three pole mount transformers seems to be in the hands of Mr. Derecktor. More information is needed to determine if these transformers poses a potentially dangerous situation to the environment.

M.J. Rielly

RM ____

7/15/92
Per Rachel mo no visit to Dereck on 7/15/92 transformers are not in substation. Do we know w
they disappeared to?? JB

DEPARTMENT OF THE NAVY

Memorandum

DATE: 05 / 20 / 92

FROM: Mark J. Rielly

TO: LT. Borowy JB 5/20

SUBJ: NETC TRANSFORMERS LOCATED AT DERECKTOR SHIPYARD

1. On Wednesday May 20, 1992 I made a site inspection at the Derecktor Shipyard facility Accompanying myself was Job Palaya and Donald Levesque from the electrical section. A Derecktor electrical representative indicated that Derecktor had no NETC owned pole mount transformers located on the property. However, there are three other NETC owned load station transformers located on pier number one. The three transformers are currently in service and being maintained by Derecktor personnel..

2. According to NETC electrical section records, the following information was indicated.
T - 265 tested to contain 14 ppm of PCB
T - 266 tested to contain 56 ppm of PCB
T - 267 tested to contain 14 ppm of PCB

5/22/92
SPOKE w/ M. REILLY ABOUT 3 TFMR'S IN ABANDONED SUBSTATION. HE IS UNAWARE OF ANY AFTER THIS INSPECTION RACHEL WILL HAVE TO SHOW US WHEN SHE RETURNS FROM LEAVE.

Mark J. Rielly

Copy to: 40E ____

There are 3 pole mount TFMRs sitting in an old substation at Derecktor (These are not the ones listed above). I recommend that someone take another look to determine if they belong to NETC.

RTM 5/21

APPENDIX N

STUDIES AND CORRESPONDENCE RELATED TO IMPACT OF DRY DOCK OPERATIONS ON CODDINGTON COVE

BATHYMETRY/REMOTS® SURVEY OF CODDINGTON COVE, RI

10 April 1986

Contract No. 68-01-7050

Report No. SAIC-86/7515&108

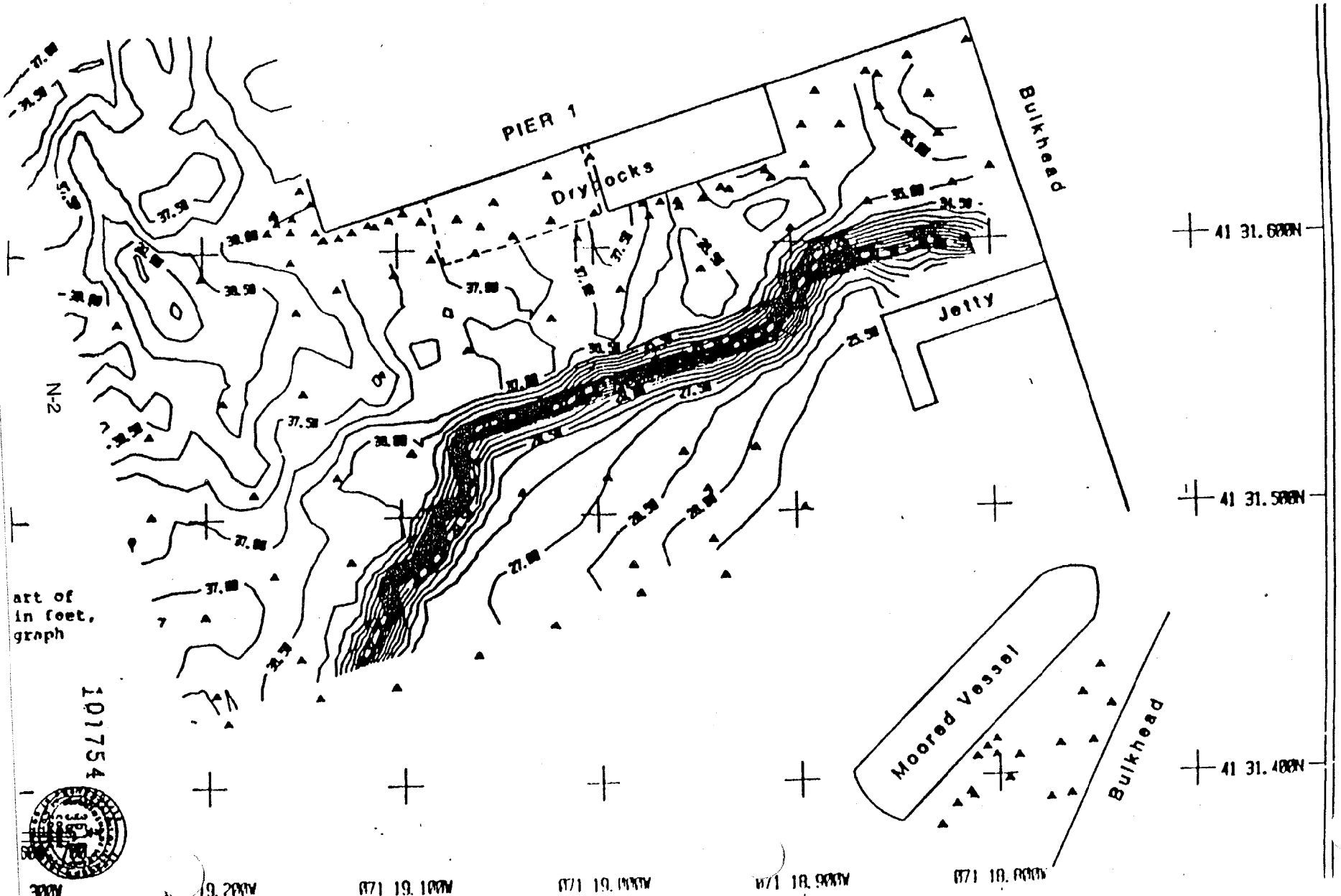
Submitted to:

Environmental Protection Agency
Office of Criminal Investigation
New England Regional Lab - EPA
60 Westview Street
Lexington, MA 02173

Submitted by:

Science Applications International Corporation
Admiral's Gate
221 Third Street
Newport, RI 02840
(401) 847-4210

101747


PIER 1
Drydocks
Bulkhead
Jetty
Moored Vessel
Bulkhead
41 31.600N
41 31.500N
41 31.400N
071 19.200W
071 19.100W
071 19.000W
071 18.900W
071 18.800W
37.50
37.00
27.50
27.00
N-2
art of
in feet,
graph
101754

of 22 REMOTS images showed evidence of Black Beauty on the seafloor. Only two of the 22 images showed distinct surface layers of the sandblasting material as was illustrated in Figure 2-3. The remaining 19 images showed the material dispersed throughout the silt-clay matrix to a depth of 15-18 cm, indicating that the material had not been deposited recently. An example of this phenomenon is shown in Figure 2-5.

3.0 BATHYMETRY

A precision bathymetric survey was conducted on 25 March 1986 using the SAIC Integrated Navigation and Data Acquisition System (INDAS) to provide accurate positioning information to the research vessel helmsman and to store the depth, time and position data on magnetic disk. Positioning ranges were provided by a Del Norte Microwave Positioning System that determines distances from each remote trisponder to the master unit on the vessel at an accuracy of +/- 1 meter.

Depths were measured using a Raytheon DE719B precision survey fathometer with a 208 kHz transducer. Depth values are accurate to 0.05% of the depth range and digitized to 0.1 ft with an SSD-100 Raytheon digitizer. Immediately before each bathymetric survey, the fathometer is calibrated with a reflective plate at known depths to correct for changes in the speed of sound.

Figure 3-1 presents the survey lanes that were traveled during data collection. The lanes were spaced at 50 ft intervals and depth values were stored every second. This fine resolution allows detection of small changes in the bottom topography. Figure 3-2 presents the contoured bathymetric chart of the survey area. The area that was dredged in the vicinity of Pier 1 to accommodate docking of vessels is easily seen. Depths range from 25.5 ft on the shallow shelf to the south to 39.5 ft to the west of Pier 1. A sharp change in depth occurs south of Pier 1 where dredging did not occur. Figure 3-3 presents a 3-dimensional topographic view of the survey area that reveals the shallow shelf and the deeper areas near Pier 1.

Examination of Figures 3-2 and 3-3 reveals the lack of any rapid changes in depth except at the shelf to the south. Irregularities in the bottom are on the scale of 0.5 to 1.0 feet. Due to the presence of barges, dry docks, buoys, anchor lines, etc., survey lanes could not be conducted along all sections of the pier and bulkheads.

4.0 SUMMARY

The results of the bathymetric survey did not show any

significant anomalous depositional features over the area that we were able to survey. The 38 ft. basin in the vicinity of the Pier was created through dredging to accommodate the vessels serviced by Derecktor Shipyards. The low topographic irregularities ranging from 0.5 to 1.0 ft. throughout the Cove could easily have formed from natural sedimentation processes.

The presence of sandblast material on the seafloor was detected in only two areas in Coddington Cove. The REMOTS images showed evidence of Black Beauty at 14 of the 47 images that were taken immediately along the southern edge of Pier 1; the remaining 8 images showing the presence of sandblasting material on the seafloor were collected behind the moored vessel "ELDIA". Because the material has settled through the sedimentary column and is dispersed throughout the normal silt-clay matrix, it is quite reasonable to conclude that deposition of sandblasting material has not occurred in the recent past (i.e., within the last 1-3 months). Of the approximately 17,200 sq. meters of seafloor that were surveyed with the REMOTS camera, we can only detect Black Beauty over 17% of that area. Because the sandblast material is not present on the bottom in a distinct, coherent layer but is spread throughout the sedimentary matrix, it is impossible to estimate the volume of sandblast material on the seafloor from the data available.

Literature Cited

Rhoads, D.C. and J.D. Germano, 1982. Characterization of Organism-Sediment Relations Using Sediment Profile Imaging: An Efficient Method of Remote Ecological Monitoring of the Seafloor (REMOTS System). Mar. Ecol. Prog. Ser. Vol.8: 115-128.

101756

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

July 1, 1988

Naval Education & Training Center
Newport, RI 02841-5051

ATTN: Mr. Roger Poisson, Code 24

Dear Mr. Poisson:

This is in reference to our chemical analysis of sediment samples from NETC's Pier II. A complete set of the analytical results is attached for your reference. These results were previously sent to you piecemeal on various dates.

The State of Rhode Island currently has no formally published criteria for assessing the contamination of marine sediments. Following the scheme devised on your previous set of samples, I am using the State of Connecticut and Commonwealth of Massachusetts criteria to evaluate the current samples. These criteria are displayed in Table 1.

Applying those criteria to this set of test results yields the summary evaluations shown in Table 2. Two of the locations (S-4 and S-8) are highly contaminated with trace metals, while two other locations (S-3 and S-6) were moderately contaminated. The other seven locations revealed no significant trace metal contamination.

There are no criteria in Rhode Island for evaluating organic contamination levels in marine sediments. However, even a cursory examination of the priority pollutant scan on sample number 2944 (S-4) will result in a label of "highly contaminated" for sample number 2944. Location S-4 is apparently polluted with some form of coal tar, asphalt, or crude oil, based on the high levels of polynuclean aromatic hydrocarbons (PAHs) which include phenanthrene, fluoranthene, pyrene, chrysene, and benzo(b)fluoranthene. S-4 also possesses a very high level of a PVC plasticizer, butylbenzylphthalate. If this weren't enough, the total PCB (Aroclors 1254 and 1260) concentration in this sample exceeds 6000 ppb (6 ppm), which is not high by terrestrial (soil) standards, but is high for marine sediments. This organic contamination appears to be unrelated to the previously cited inorganic (i.e., trace metal) contamination. I would not hazard to state which type of contamination (organic or inorganic) is the more serious at these levels; suffice it to say that sample number 2944, representing location S-4, is dirty on all counts. The minor amounts of volatile chlorinated hydrocarbon solvents (methylene chloride and trichloroethene) found in this sample pale in comparision to the PAH, trace metal, and PCB contaminations already mentioned and are insignificant.

Sample number 2949, representing location S-9, revealed no organic contamination with the exception of a small amount (140 ppb) of methylene chloride. I have no basis for characterizing this as a high level of contamination. My overall reaction is that this is not something to be overly concerned about.

As before, I suggest that you ask the State of Rhode Island to formally characterize the hazardous (or non-hazardous) nature of these materials.

Should you have any questions regarding this information, please call me at 617-928-4238.

Sincerely,

Brian J. Condike

Brian J. Condike
Chief Chemist
Water Quality Laboratory

CF: Mr. Carroll
Mr. Brazeau

NEW ENGLAND DIVISION WATER QUALITY LABORATORY

Negative values are detection limits and indicate that substance was not detected.

SAMPLE	FIELD DESCRIPTION	Cu (ppm)	Pb (ppm)	Zn (ppm)
2941	S - 1	92	59	188
2942	S - 2	83	57	158
2943	S - 3	115	64	208
2944	S - 4	881	1250	2780
2945	S - 5	77	69	199
2946	S - 6	174	69	237
2947	S - 7	75	60	176
2948	S - 8	273	289	725
2949	S - 9	42	52	172
2950	S - 10	77	66	159
2951	S - 12	66	56	167

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2944 S-4
Phenol	6395	ND
Bis(2-chloroethyl)ether	6395	ND
2-Chlorophenol	6395	ND
1,3-Dichlorobenzene	6395	ND
1,4-Dichlorobenzene	6395	ND
Benzyl alcohol	6395	ND
1,2-Dichlorobenzene	6395	ND
2-Methylphenol	6395	ND
Bis(2-chloroisopropyl)ether	6395	ND
4-Methylphenol	6395	ND
N-Nitroso-di-n-propylamine	6395	ND
Hexachloroethane	6395	ND
Nitrobenzene	6395	ND
Isophrone	6395	ND
2-Nitrophenol	6395	ND
2,4-Dimethylphenol	6395	ND
Benzoic acid	31008	ND
Bis(2-chloroethoxy)methane	6395	ND
2,4-Dichlorophenol	6395	ND
1,2,4-Trichlorobenzene	6395	ND
Aniline	6395	ND
Napthalene	6395	ND
4-Chloroaniline	6395	ND
Hexachlorobutadiene	6395	ND
4-Chloro-3-methylphenol	6395	ND
2-Methylnapthalene	6395	ND
Hexachlorocyclopentadiene	6395	ND
2,4,6-Trichlorophenol	6395	ND
2,4,5-Trichlorophenol	31008	ND
2-Chloronaphthalene	6395	ND
2-Nitroaniline	31008	ND
Dimethyl phthalate	6395	ND
Acenaphthylene	6395	ND
3-Nitroaniline	31008	ND
Acenaphthene	6395	ND
2,4-Dinitrophenol	31008	ND
4-Nitrophenol	31008	ND
Dibenzofuran	6395	ND
2,4-Dinitrotoluene	6395	ND
2,6-Dinitrotoluene	6395	ND
Diethylphthalate	6395	ND
4-Chlorophenyl-phenylether	6395	ND
Fluorene	6395	ND
4-Nitroaniline	31008	ND

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2944 S-4
4,6-Dinitro-2-methylphenol	31008	ND
N-Nitrosodiphenylamine ‡‡	6395	ND
4-Bromophenyl-phenylether	6395	ND
Hexachlorobenzene	6395	ND
Pentachlorophenol	31008	ND
Phenanthrene	6395	31000
Anthracene	6395	ND
Di-n-butylphthalate	6395	ND
Fluoranthene	6395	44600
N-Nitrosodimethylamine	6395	ND
Pyrene	6395	32900
Butylbenzylphthalate	6395	11800
3,3-Dichlorobenzidine	12791	ND
Benzo(a)anthracene	6395	ND
Bis(2ethylhexyl)phthalate	6395	ND
Chrysene	6395	14300
Di-n-octyl phthalate	6395	ND
Benzo(b)fluoranthene	6395	13800
Benzo(k)fluoranthene	6395	ND
Benzo(a)pyrene	6395	ND
Indeno(1,2,3-cd)pyrene	6395	ND
Dibenz(a,h)anthracene	6395	ND
Benzo(g,h,i)perylene	6395	ND

ND = not detected

‡‡ Cannot be separated from diphenylamine

ORGANOCHLORINE PESTICIDES & PCBS

PARAMETER	Detection Limits ug/Kg	2944 S-4
Alpha-BHC	310	ND
Beta-BHC	310	ND
Delta-BHC	310	ND
Gamma-BHC (Lindane)	310	ND
Heptachlor	310	ND
Aldrin	310	ND
Heptachlor epoxide	310	ND
Endosulfan I	310	ND
Dieldrin	620	ND
4,4'-DDE	620	ND
Endrin	620	ND
Endosulfan II	620	ND
4,4'-DDD	620	ND
Endosulfan sulfate	620	ND
4,4'-DDT	620	ND
Methoxychlor	3101	ND
Endrin ketone	620	ND
Chlordane	3101	ND
Toxaphene	6202	ND
Endrin aldehyde	620	ND
Aroclor-1016	3101	ND
Aroclor-1221	3101	ND
Aroclor-1232	3101	ND
Aroclor-1242	3101	ND
Aroclor-1248	3101	ND
Aroclor-1254	6202	J 4070
Aroclor-1260	6202	J 1938
Aroclor-1262	***	ND
Aroclor-1268	***	ND

ND = not detected

EPA-CLP does not analyze for Aroclors 1262 and 1268. The detection limits for these are similar to that for Aroclor 1260

VOLATILE ORGANICS

NAVY PIER II - SOIL SAMPLES

PARAMETER	Detection Limits ug/Kg	2944 S-4	2949 S-9
Chloromethane	10	ND	ND
Bromomethane	10	ND	ND
Vinyl chloride	10	ND	ND
Chloroethane	10	ND	ND
Methylene chloride	5	140	120
Trichlorofluoromethane	10	ND	ND
Acetone	10	ND	ND
Carbon disulfide	5	ND	ND
1,1-Dichloroethene	5	ND	ND
1,1-Dichloroethane	5	ND	ND
1,2-Dichloroethenes(total)	5	ND	ND
Chloroform	5	ND	ND
1,2-Dichloroethane	5	ND	ND
2-Butanone	10	ND	ND
1,1,1-Trichloroethane	5	ND	ND
Carbon tetrachloride	5	ND	ND
Vinyl acetate	10	ND	ND
Bromodichloromethane	5	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND
1,1-Dichloropropane	5	ND	ND
cis-1,3-Dichloropropene	5	ND	ND
Trichloroethene	5	ND	240
Dibromochloromethane	5	ND	ND
1,1,2-Trichloroethane	5	ND	ND
Benzene	5	ND	ND
trans-1,3-Dichloropropene	5	ND	ND
2-Chloroethylvinylether	10	ND	ND
Bromoform	5	ND	ND
4-Methyl-2-pentanone	10	ND	ND
2-Hexanone	10	ND	ND
Tetrachloroethene	5	ND	ND
Toluene	5	ND	ND
Chlorobenzene	5	ND	ND
Ethylbenzene	5	ND	ND
Styrene	5	ND	ND
Total xylenes	5	ND	ND
1,3-Dichlorobenzene	10	ND	ND
1,2 & 1,4-Dichlorobenzenes	10	ND	ND

ND = not detected

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2949 S-9
4,6-Dinitro-2-methylphenol	2614	ND
N-Nitrosodiphenylamine ‡‡	539	ND
4-Bromophenyl-phenylether	539	ND
Hexachlorobenzene	539	ND
Pentachlorophenol	2614	ND
Phenanthrene	539	ND
Anthracene	539	ND
Di-n-butylphthalate	539	ND
Fluoranthene	539	ND
N-Nitrosodimethylamine	539	ND
Pyrene	539	ND
Butylbenzylphthalate	539	ND
3,3-Dichlorobenzidine	1078	ND
Benzo(a)anthracene	539	ND
Bis(2ethylhexyl)phthalate	539	ND
Chrysene	539	ND
Di-n-octyl phthalate	539	ND
Benzo(b)fluoranthene	539	ND
Benzo(k)fluoranthene	539	ND
Benzo(a)pyrene	539	ND
Indeno(1,2,3-cd)pyrene	539	ND
Dibenz(a,h)anthracene	539	ND
Benzo(g,h,i)perylene	539	ND

ND = not detected
‡‡ Cannot be separated from diphenylamine

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2949 S-9
Phenol	539	ND
Bis(2-chloroethyl)ether	539	ND
2-Chlorophenol	539	ND
1,3-Dichlorobenzene	539	ND
1,4-Dichlorobenzene	539	ND
Benzyl alcohol	539	ND
1,2-Dichlorobenzene	539	ND
2-Methylphenol	539	ND
Bis(2-chloroisopropyl)ether	539	ND
4-Methylphenol	539	ND
N-Nitroso-di-n-propylamine	539	ND
Hexachloroethane	539	ND
Nitrobenzene	539	ND
Isophrone	539	ND
2-Nitrophenol	539	ND
2,4-Dimethylphenol	539	ND
Benzoic acid	2614	ND
Bis(2-chloroethoxy)methane	539	ND
2,4-Dichlorophenol	539	ND
1,2,4-Trichlorobenzene	539	ND
Aniline	539	ND
Napthalene	539	ND
4-Chloroaniline	539	ND
Hexachlorobutadiene	539	ND
4-Chloro-3-methylphenol	539	ND
2-Methylnapthalene	539	ND
Hexachlorocyclopentadiene	539	ND
2,4,6-Trichlorophenol	539	ND
2,4,5-Trichlorophenol	2614	ND
2-Chloronaphthalene	539	ND
2-Nitroaniline	2614	ND
Dimethyl phthalate	539	ND
Acenaphthylene	539	ND
3-Nitroaniline	2614	ND
Acenaphthene	539	ND
2,4-Dinitrophenol	2614	ND
4-Nitrophenol	2614	ND
Dibenzofuran	539	ND
2,4-Dinitrotoluene	539	ND
2,6-Dinitrotoluene	539	ND
Diethylphthalate	539	ND
4-Chlorophenyl-phenylether	539	ND
Fluorene	539	ND
4-Nitroaniline	2614	ND

ORGANOCHLORINE PESTICIDES & PCBS

PARAMETER	Detection Limits ug/Kg	2949 S-9
Alpha-BHC	261	ND
Beta-BHC	261	ND
Delta-BHC	261	ND
Gamma-BHC (Lindane)	261	ND
Heptachlor	261	ND
Aldrin	261	ND
Heptachlor epoxide	261	ND
Endosulfan I	261	ND
Dieldrin	523	ND
4,4'-DDE	523	ND
Endrin	523	ND
Endosulfan II	523	ND
4,4'-DDD	523	ND
Endosulfan sulfate	523	ND
4,4'-DDT	523	ND
Methoxychlor	2614	ND
Endrin ketone	523	ND
Chlordane	2614	ND
Toxaphene	5229	ND
Endrin aldehyde	523	ND
Aroclor-1016	2614	ND
Aroclor-1221	2614	ND
Aroclor-1232	2614	ND
Aroclor-1242	2614	ND
Aroclor-1248	2614	ND
Aroclor-1254	5229	ND
Aroclor-1260	5229	ND
Aroclor-1262	***	ND
Aroclor-1268	***	ND

ND = not detected

EPA-CLP does not analyze for Aroclors 1262 and 1268. The detection limits for these are similar to that for Aroclor 1260

TABLE 1
MARINE SEDIMENT
EVALUATION CRITERIA

PARAMETER	STATE	CONTAMINATION LEVEL LOW	MODERATE	HIGH
Copper (Cu)	MA	<200 ppm	200-400 ppm	>400 ppm
	CT	<200 ppm	200-400 ppm	>400 ppm
	RI (1)	<200 ppm	200-400 ppm	>400 ppm
Lead (Pb)	MA	<100 ppm	100-200 ppm	>200 ppm
	CT	<100 ppm	100-200 ppm	>200 ppm
	RI (1)	<100 ppm	100-200 ppm	>200 ppm
Zinc (Zn)	MA	<200 ppm	200-400 ppm	>400 ppm
	CT	<200 ppm	200-400 ppm	>400 ppm
	RI (1)	<200 ppm	200-400 ppm	>400 ppm
Tin (Sn)	ALL (2)	NC (3)	NC (3)	NC (3)
Titanium (Ti)	ALL (2)	NC (3)	NC (3)	NC (3)
Organics	ALL (2)	NC (3)	NC (3)	NC (3)

(1) Rhode Island criteria based upon those of Massachusetts and Connecticut.
(2) MA, CT, & RI
(3) NC = No Criteria

TABLE 2
NETC PIER II
MARINE SEDIMENTS

SAMPLE	FIELD LOCATION	Cu	Pb	Zn	FINAL (1)
2941	S-1	low	low	low	low
2942	S-2	low	low	low	low
2943	S-3	low	low	mod	mod
2944	S-4	high	high	high	high
2945	S-5	low	low	low	low
2946	S-6	low	low	mod	mod
2947	S-7	low	low	low	low
2948	S-8	mod	high	high	high
2949	S-9	low	low	low	low
2950	S-10	low	low	low	low
2951	S-12	low	low	low	low

(1) Final contamination level is the overall assessment of the sediment, and is equal to the highest level of the three metals evaluated.

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

August 20, 1987

Naval Education & Training Center
Newport, RI 02841-5051

ATTN: Mr. Roger Poisson Code 24

Dear Mr. Poisson:

This is in reference to our chemical analysis of sediment samples from NETC's Pier 1. A copy of the results are attached for your reference. These results were previously transmitted to you sans interpretation on 17 August 1987.

The State of Rhode Island currently has no formally published criteria for assessing the contamination of marine sediments. In actual practice, however, Rhode Island frequently uses the criteria of the State of Connecticut and the Commonwealth of Massachusetts, depending upon which state is closest to the Rhode Island site under study. The evaluation criteria for the parameters of interest are displayed in Table 1.

Applying the above criteria to the test data results in the matrix displayed as Table 2. Of the 20 samples analyzed, 13 were evaluated as being highly contaminated by at least one of three trace metals (Cu, Pb, & Zn) while the remaining seven sediments were moderately contaminated with at least one of those three metals.

All of the tin levels were below the analytical detection limits. In the absence of specific evaluation criteria for tin, no estimation of tin contamination can be made at this time. The titanium levels of 800-4000 ppm are typical of clean sediments. Two clean standard reference sediments from Canada yielded values of 3000 ppm and 5100 ppm, respectively. The titanium is part of the geologic matrix and is probably in the form of titanium dioxide (TiO_2). Any titanium contamination of human origin would have to exist in very high concentrations (2000-5000 ppm) in order to be differentiated from background levels. There does not appear to be any titanium contamination in these samples.

The priority pollutant scan of three samples revealed one sample (No. 1827, location M) with minor contamination by some polynuclear aromatic hydrocarbons (phenanthrene, fluoranthene, and pyrene) and by one phthalate (bis (2-ethylhexyl) phthalate). The minor nature of this contamination is far outweighed by the high contamination levels for copper, lead, and zinc discussed above. The fact that these organic compounds were detected at all, however, could indicate similar pollution by these or related compounds in adjacent areas.

I suggest that you contact the State of Rhode Island directly for a formal determination of the level of contamination of these materials, and for disposal options. Historically, marine sediments contaminated at these levels require upland disposal scenarios.

Please contact me if you have any further questions on this matter.

Sincerely,

Brian J. Condike

Brian J. Condike
Chief Chemist
Water Quality Laboratory

CF: Mr. Small
Mr. Carroll

NEW ENGLAND DIVISION WATER QUALITY LABORATORY

REPORT PRODUCED ON 08/05/87 12:30:20

NAVY PIER 1

Negative values are detection limits and indicate that substance was not detected.

SAMPLE	Cu (PPM)	Pb (PPM)	Sn (PPM)	Ti (PPM)	Zn (PPM)
1815	926.0	320	-50	921.00	537
1816	183.0	86	-50	2807.00	288
1817	145.0	103	-50	2871.00	261
1818	146.0	76	-50	3717.00	303
1819	339.0	212	-50	3733.00	496
1820	3116.0	231	-50	2147.00	473
1821	315.0	91	-50	2554.00	420
1822	322.0	123	-50	2299.00	477
1823	262.0	291	-50	3638.00	504
1824	279.0	196	-50	1636.00	529
1825	139.0	90	-50	1682.00	216
1826	163.0	126	-50	2036.00	259
1827	1188.0	502	-50	926.00	630
1828	684.0	654	-50	859.00	617
1829	87.0	304	-50	3425.00	528
1830	148.0	146	-50	3955.00	522
1831	162.0	70	-50	4042.00	333
1832	456.0	700	-50	4091.00	580
1833	148.0	65	-50	2302.00	244
1834	228.0	65	-50	801.00	564

NEW ENGLAND DIVISION WATER QUALITY LABORATORY

PRODUCED ON 05/27/87 AT 12:56 PAGE 1

SAMPLE #	FIELD.#
1815	00 A-BENT 5 SOUTH
1816	00 B-BENT 15 SOUTH
1817	00 C-BENT 25 SOUTH
1818	00 D-BENT 35 SOUTH
1819	00 E-BENT 45 SOUTH
1820	00 F-BENT 52 SOUTH (NE)
1821	00 G-BENT 52 SOUTH (E)
1822	00 H-BENT 52 SOUTH (SE)
1823	00 I-BENT 62 SOUTH
1824	00 J-BENT 72 SOUTH
1825	00 K-BENT 82 SOUTH
1826	00 L-BENT 92 SOUTH (SW)
1827	00 M-BENT 92 SOUTH (W)
1828	00 N-BENT 92 SOUTH (NW)
1829	00 O-BENT 102 SOUTH
1830	00 P-BENT 112 SOUTH
1831	00 Q-BENT 122 SOUTH
1832	00 R-BENT 132 SOUTH
1833	00 S-BENT 142 SOUTH
1834	00 T-BENT 162 SOUTH

20 SELECTIONS QUALIFIED

ACIDS, BASE/NEUTRALS

PARAMETER	Detection Limits (ug/Kg)	1821	1827	1831
Phenol	330	ND	ND	ND
Bis(-2-chloroethyl)ether	330	ND	ND	ND
2-Chlorophenol	330	ND	ND	ND
1,3-Dichlorobenzene	330	ND	ND	ND
1,4-Dichlorebenzene	330	ND	ND	ND
Benzyl alcohol	330	ND	ND	ND
1,2-Dichlorobenzene	330	ND	ND	ND
2-Methylphenol	330	ND	ND	ND
bis(2-Chloroisopropyl)ether	330	ND	ND	ND
4-Methylphenol	330	ND	ND	ND
N-Nitroso-di-n-propylamine	330	ND	ND	ND
Hexachloroethane	330	ND	ND	ND
Nitrobenzene	330	ND	ND	ND
Isophrone	330	ND	ND	ND
2-Nitrophenol	330	ND	ND	ND
2,4-Dimethylphenol	330	ND	ND	ND
Benzoic acid	1600	ND	ND	ND
bis(-2-Chloroethoxy)methane	330	ND	ND	ND
2,4-Dichlorophenol	330	ND	ND	ND
1,2,4-Trichlorobenzene	330	ND	ND	ND
Aniline	330	ND	ND	ND
Naphthalene	330	ND	ND	ND
4-Chloroaniline	330	ND	ND	ND
Hexachlorobutadiene	330	ND	ND	ND
4-Chloro-3-methylphenol	330	ND	ND	ND
2-Methylnaphthalene	330	ND	ND	ND
Hexachlorocyclopentadiene	330	ND	ND	ND
2,4,6-Trichlorophenol	330	ND	ND	ND
2,4,5-Trichlorophenol	1600	ND	ND	ND
2-Chloronaphthalene	330	ND	ND	ND
2-Nitroaniline	1600	ND	ND	ND
Dimethyl phthalate	330	ND	ND	ND
Acenaphthylene	330	ND	ND	ND
3-Nitroaniline	1600	ND	ND	ND
Acenaphthene	330	ND	ND	ND
2,4-Dinitrophenol	1600	ND	ND	ND
4-Nitrophenol	1600	ND	ND	ND
Dibenzofuran	330	ND	ND	ND
2,4-Dinitrotoluene	330	ND	ND	ND
2,6-Dinitrotoluene	330	ND	ND	ND
Diethylphthalate	330	ND	ND	ND
4-Chlorophenyl-phenylether	330	ND	ND	ND
Fluorene	330	ND	ND	ND
4-Nitroaniline	1600	ND	ND	ND

ND = not detected

ACIDS, BASE/NEUTRALS

PARAMETER	Detection Limits (ug/Kg)	1821	1827	1831
4,6-Dinitro-2-methylphenol	1600	ND	ND	ND
N-Nitrosodiphenylamine **	330	ND	ND	ND
4-bromophenyl-phenylether	330	ND	ND	ND
Hexachlorobenzene	330	ND	ND	<330
Pentachlorophenol	1600	ND	ND	ND
Phenathrene	330	ND	390	ND
Anthracene	330	ND	ND	ND
Di-n-butylphthalate	330	ND	ND	<330
Fluoranthene	330	ND	700	ND
N-Nitrosodimethylamine	330	ND	ND	ND
Pyrene	330	<330	580	ND
Butylbenzylphthalate	330	ND	ND	ND
3,3'-Dichlorobenzidine	660	ND	ND	ND
Benzo(a)anthracene	330	ND	<330	ND
bis(2-Ethylheryl)phthalate	330	<330	860	ND
Chrysene	330	<330	<330	ND
Di-n-octyl phthalate	330	ND	ND	ND
Benzo(b)fluoranthene	330	ND	ND	ND
Benzo(k)fluoranthene	330	ND	ND	ND
Benzo(a)pyrene	330	ND	ND	ND
Indeno(1,2,3-cd)pyrene	330	ND	ND	ND
Dibenz(a,h)anthracene	330	ND	ND	ND
Benzo(g,h,i)perylene	330	ND	ND	ND

ND = not detected

** Cannot be separated from diphenylamine

VOLATILE ORGANICS

PARAMETER	Detection Limits (ug/Kg)	RESULTS IN ug/Kg FOR SAMPLE NUMBER 1821	1827	1831
Chloromethane	10	ND	ND	ND
Bromomethane	10	ND	ND	ND
Vinyl chloride	10	ND	ND	ND
Chloroethane	10	ND	ND	ND
Methylene chloride	5	ND	ND	ND
Acetone	10	ND	ND	88
Carbon disulfide	5	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND
1,2-Dichloroethenes(total)	5	ND	ND	ND
Chloroform	5	ND	ND	ND
1,2-Dichloroethane	5	ND	ND	ND
2-Butanone	10	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND
[illegible] acetate	10	ND	ND	ND
[illegible] dichloromethane	5	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND
1,1-Dichloropropane	5	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND
Trichloroethene	5	ND	ND	ND
Dibromochloromethane	5	ND	ND	ND
1,1,2-Trichloroethane	5	ND	ND	ND
Benzene	5	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND
2-Chloroethylvinylether	10	ND	ND	ND
Bromoform	5	ND	ND	ND
4-Methyl-2-pentanone	10	ND	ND	ND
2-Hexanone	10	ND	ND	ND
Tetrachloroethene	5	ND	ND	ND
Toluene	5	ND	ND	ND
Chlorobenzene	5	ND	ND	ND
Ethylbenzene	5	ND	ND	ND
Styrene	5	ND	ND	ND
Total xylenes	5	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND
1,2 & 1,4-Dichlorobenzenes	10	ND	ND	ND
Trichlorofluoromethane	5	ND	ND	ND

ND = not detected

TABLE 1
MARINE SEDIMENT
EVALUATION CRITERIA

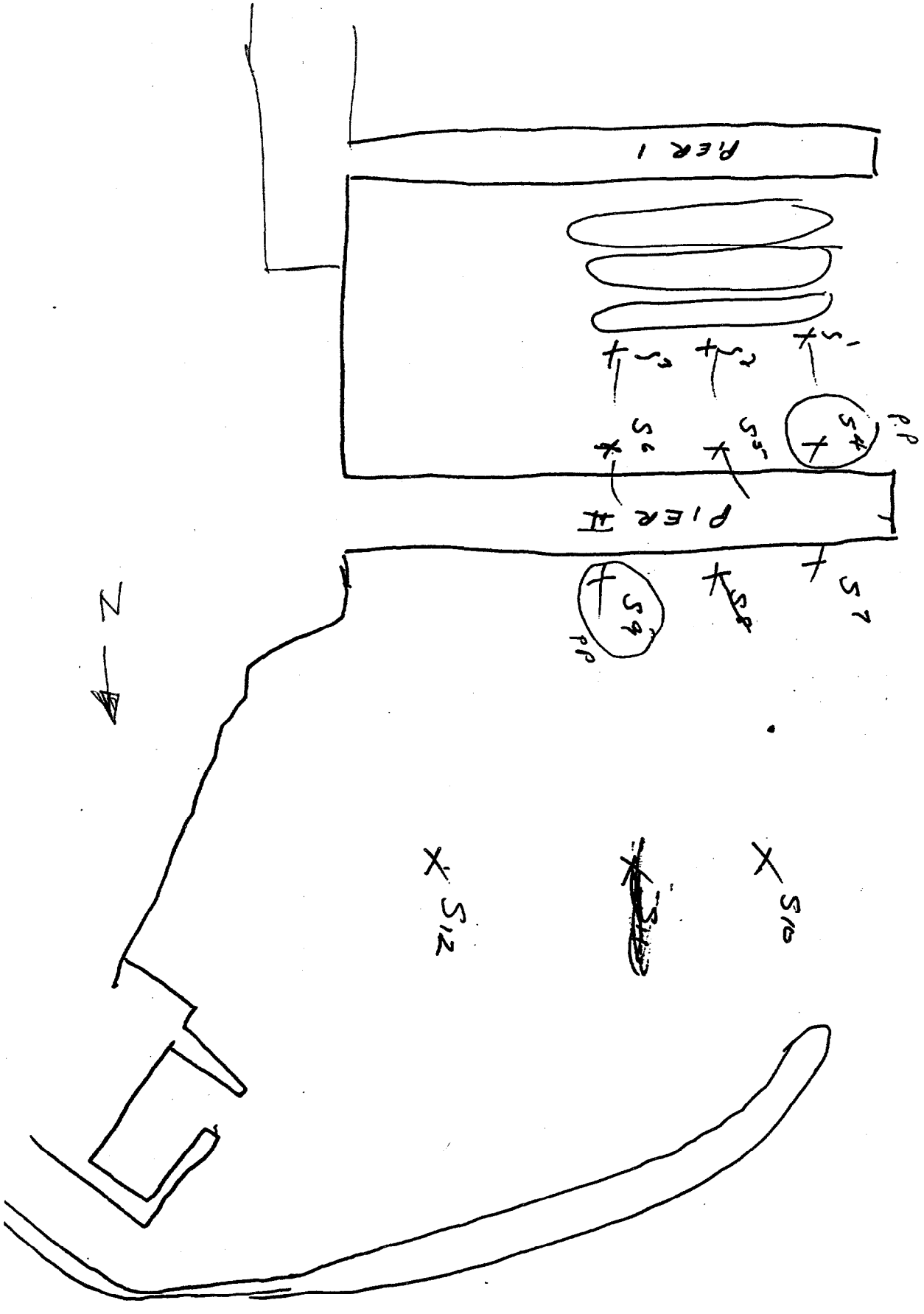
PARAMETER	STATE	CONTAMINATION LEVEL LOW	MODERATE	HIGH
Copper (Cu)	MA	<200 ppm	200-400 ppm	>400 ppm
	CT	<200 ppm	200-400 ppm	>400 ppm
	RI (1)	<200 ppm	200-400 ppm	>400 ppm
Lead (Pb)	MA	<100 ppm	100-200 ppm	>200 ppm
	CT	<100 ppm	100-200 ppm	>200 ppm
	RI (1)	<100 ppm	100-200 ppm	>200 ppm
Zinc (Zn)	MA	<200 ppm	200-400 ppm	>400 ppm
	CT	<200 ppm	200-400 ppm	>400 ppm
	RI (1)	<200 ppm	200-400 ppm	>400 ppm
Tin (Sn)	ALL (2)	NC (3)	NC (3)	NC (3)
Titanium (Ti)	ALL (2)	NC (3)	NC (3)	NC (3)
Organics	ALL (2)	NC (3)	NC (3)	NC (3)

(1) Rhode Island criteria based upon those of Massachusetts and Connecticut.
(2) MA, CT, & RI
(3) NC = No Criteria

TABLE 2
NETC PIER 1
MARINE SEDIMENTS

SAMPLE	FIELD LOCATION	Cu	Pb	Zn	FINAL (1)
1815	A	high	high	high	high
1816	B	low	low	mod	mod
1817	C	low	mod	mod	mod
1818	D	low	low	mod	mod
1819	E	mod	high	high	high
1820	F	high	high	high	high
1821	G	mod	low	high	high
1822	H	mod	mod	high	high
1823	I	mod	high	high	high
1824	J	mod	mod	high	high
1825	K	low	low	mod	mod
1826	L	low	mod	mod	mod
1827	M	high	high	high	high
1828	N	high	high	high	high
1829	O	low	high	high	high
1830	P	low	high	high	high
1831	Q	low	mod	mod	mod
1832	R	high	high	high	high
1833	S	low	mod	mod	mod
1834	T	mod	high	high	high

(1) Final contamination level is the overall assessment of the sediment, and is equal to the highest level of the three metals evaluated.


N
PIER II
PIER I
S12
S10
S7
S4
S4
S5
S6
S8
S9
S11
PP
PP

DEPARTMENT OF THE NAVY
MEMORANDUM
CODE 424E: RTM

DATE: 22 Feb 89

FROM: 424E
TO: 42
VIA: 424

SUBJ: R. E. DERECKTOR, DRYDOCK #3, DREDGING PERMIT

REF: (a) R. E. Derecktor ltr dtd 9 Feb 8
(b) Army Corps of Engineers ltr dtd 1 Jul 88
(c) Army Corps of Engineers ltr dtd 20 Aug 87

1. As requested regarding reference (a), the purpose of the SAIC Report Bathymetry/REMOTS Survey of Coddington Cove (1986) was to provide an updated bathymetric survey of the area adjacent to Pier I and to determine the presence and areal extent of a sandblasting material known as "Black Beauty" on the seafloor using Remote Ecological Monitoring of the Seafloor (REMOTS). Field surveys were performed along the southern edge of Pier I and around the drydock. Sampling could not be performed along the northern edge of the Pier due to the presence of LNG tankers, etc.

2. The results showed the presence of sandblast material on the seafloor to be in 14 of 47 images that were taken immediately along the southern edge of Pier I. Of 17, 200 sq meters of seafloor that were surveyed, only 17% of the area was contaminated with sandblast material. According to the study, the material has settled and dispersed throughout the sedimentary matrix and therefore was not considered to be newly deposited material, that is, within the last 1-3 months of the study. Further, it could not be determined how much material was on the seafloor based on the available data.

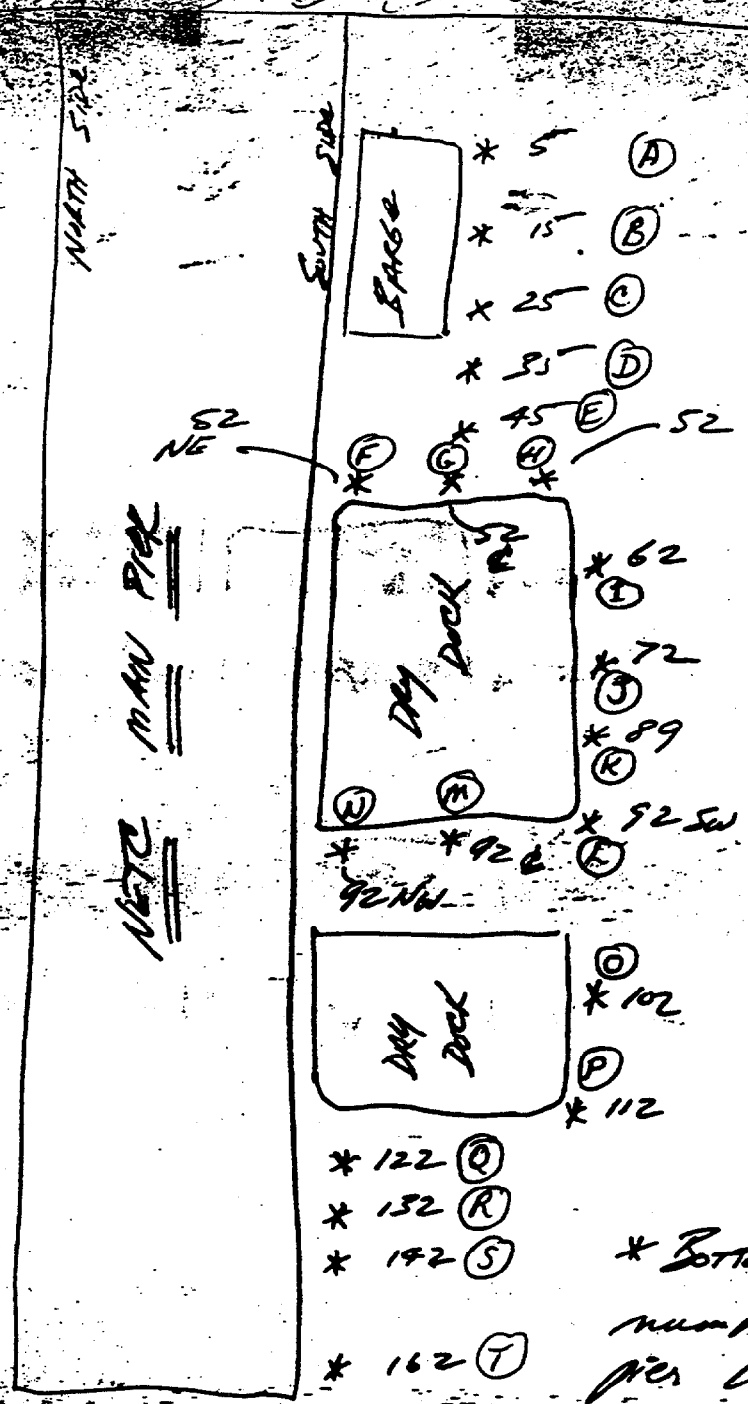
3. Another survey was performed by the Army Corps of Engineers (ACE) in 1987 at the request of NETC. Using a different method than that described above, the survey was designed to assess the contamination of marine sediments using heavy metals and a priority pollutant levels as criteria. References (b) and (c) detailed the results of the survey. Initially, 20 samples taken from the south side of Pier I were analyzed. According to the ACE study, thirteen of the twenty samples were evaluated as being highly contaminated by at least one of three trace metals (Cu, Pb, and Zn). The remaining seven samples were moderately contaminated. Tin and titanium levels were below detection levels and were not considered to be in high enough concentrations to be different than background levels. The priority pollutant scan (organic contamination) of three samples showed minor contamination. This contamination was far outweighed by the level for the copper, lead and zinc. An additional 11 samples were taken in the vicinity of Pier II. Four out of 11 samples showed high to moderate heavy metal contamination. In particular, one sample showed heavy organic contamination which appears to be unrelated to the trace metal inorganic contamination.

4. **Summary.** If the studies are considered individually, the REMOTS study seems inconclusive due to the fact that no sampling was done on the north side of Pier I and the magnitude of the problem was not identified in environmental terms. The study suggested that the findings could not be attributed to recent sandblasting operations. Using a different method, the ACE study

conducted additional sampling north of Pier I, around Pier II and also used enviromental criteria for determining the level of contamination. It should be noted that the State of Rhode Island has no formally published criteria for assessing contamination of marine sediments but the ACE used the criteria of Connecticut and Massachusetts to evaluate their results. Also, there are no criteria for evaluating organic contamination. The ACE study results showed contamination on the south side of Pier I and around the Pier II area (north of Pier I) as mentioned above. Therefore, the ACE study identifies definite contamination of the sediment bottom using the criteria mentioned above. However, the ACE study did not mention at what depth the sediments were sampled in order to somehow draw a relationship to more recent or past sandblasting operations.

5. **Conclusion.** The levels and types of pollutants found are not typical background levels and therefore are considered to be significant. Assuming that sandblasting material consists of Copper, Lead, and Zinc, one might attribute the levels of these metals found in and around Pier I to be the result of sandblasting operations conducted at Pier I. The trace metal contamination around Pier II might be attributed to the spreading of contaminants by natural processes (i.e. tidal, current). However, one must consider whether or not the high trace metal contamination around Pier II is the result of former Navy practices. Based on the findings of these studies, there is evidence of sediment contamination probably associated with past shipbuilding/repair operations. Overall, in my opinion the studies leave some unanswered questions and should not be considered conclusive.

R. MARINO



* Bottom sample location numbers correspond to pier bent locations

See written MDSn 2 ~~det~~ 201 report for details

2 May 1987

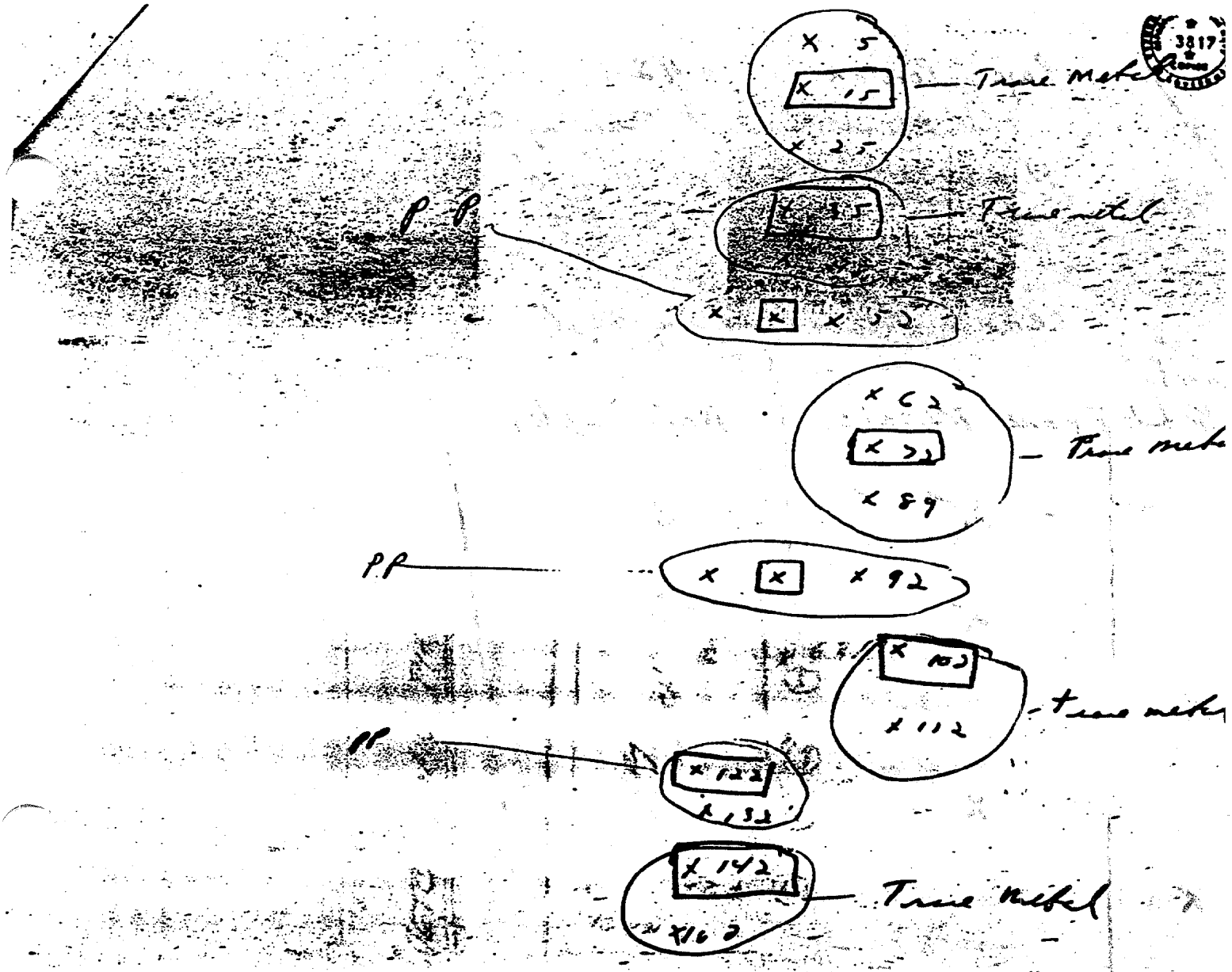
LT USNR

Roger Poisson, Code 424
Naval Education and Training Center
Newport, Rhode Island 02841-5051
Tel 401-841-3735

Perform the following test:

Priority Pollutants	Trace Metals	Main Samples	Additive Samples*
	X	B	A, C
	X	D	E
X		G	F, H
	X	J	I, K
X		M	N, L
	X	O	P
X		Q	R
	X	S	T

* If main sample does not have sufficient material then use one/of more of the additive samples for the group.


X 5
X 15
X 25
True Metal
X 35
True metal
X X X 52
X 62
X 72
X 89
True meta
P.P
X X X 92
X 102
X 112
True meta
P
X 122
X 132
X 142
X 162
True Metal