N60201.AR.000294
NS MAYPORT
5090.3a

CONTAMINATION ASSESSMENT REPORT FOR BUILDING 460 NS MAYPORT FL
2/1/1996
ABB ENVIRONMENTAL SERVICES

CONTAMINATION ASSESSMENT REPORT

BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

Unit Identification Code: N60201

Contract Number N62467-89-D-0317/119

Prepared by:

ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Byas Glover, Code 18410, Engineer-In-Charge

February 1996

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/119 are complete and accurate and comply with all requirements of this contract.

DATE: February 8, 1996

NAME AND TITLE OF CERTIFYING OFFICIAL: Terry Hansen, P.G.
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Joseph Fugitt, P.G.
Senior Geologist

(DFAR 252.227-7036)

FOREWORD

To meet its mission objectives, the U.S. Navy performs a variety of operations, some requiring the use, handling, storage, or disposal of hazardous materials. Through accidental spills and leaks as well as conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable to today's standards. With growing knowledge of the long term effects of hazardous materials on the environment, the Department of Defense initiated various programs to investigate and remediate conditions related to suspected past releases of hazardous materials at their facilities.

One of these programs is the Comprehensive Long Term Environmental Action, Navy underground storage tank (UST) program. This program complies with Subtitle I of the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments of 1984. In addition, the UST program complies with all appropriate State and local storage tank regulations as they pertain to each naval facility.

The UST program includes the following activities:

- registration and management of Navy and Marine Corps storage tank systems,
- contamination assessment planning,
- site field investigations,
- preparation of contamination assessment reports,
- remedial (corrective) action planning,
- implementation of the remedial action plans, and
- tank and pipeline closures.

The Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) manages the UST program while the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection oversee the Navy Underground Storage Tank Program at Naval Station (NAVSTA) Mayport.

Questions regarding the UST program at NAVSTA Mayport should be addressed to Mr. Byas Glover SOUTHNAVFACENGCOM, Code 18410, at (803) 820-5651.

EXECUTIVE SUMMARY

Building 460 is located southeast of the Turning Basin, near the intersection of Massey Avenue and Bon Homme Richard Street, at Naval Station (NAVSTA) Mayport, Mayport, Florida. The building houses the Navy Federal Credit Union and a branch of the United States Postal Service on the west end with classrooms and a library on the east end. Two 1,000-gallon underground storage tanks (USTs) were previously used to heat the building and fuel an emergency generator. On March 24, 1994, during excavation of the tanks, excessively contaminated soil and free product were discovered; therefore, initial remedial actions (IRA) were conducted. The IRA involved the removal of approximately 300 tons of excessively contaminated soil from the excavation area.

ABB Environmental Services, Inc., (ABB-ES) was subsequently contracted by the Southern Division, Naval Facilities Engineering Command to conduct an assessment of the facility and submit a Contamination Assessment Report, which describes the horizontal and vertical extent of petroleum contamination in soil and groundwater at the site. The contamination assessment was conducted from May to October, 1995, in accordance with State guidelines for petroleum assessment and cleanup, which are outlined in Chapter 62-770, Florida Administrative Code.

The findings, conclusions, and recommendations for Building 460 at NAVSTA Mayport are summarized below.

An area of excessively contaminated soil was detected near the former USTs, extending north approximately 30 feet, west approximately 50 feet, as well as south and east beneath Buildings 460 and 1264 for an unknown distance.

The areal extent of groundwater contamination at Building 460 is apparently limited to the general vicinity of the former USTs. Benzene, toluene, ethylbenzene, xylenes, naphthalenes, fluorene, and methyl tert-butyl ether were detected in groundwater samples from site monitoring wells; however, the concentrations of the constituents were below the State No Further Action guidelines for G-II groundwater.

Free product was not observed in any monitoring wells at the site during the assessment, although free product was reported in the excavation pit during the tank removal.

Five onsite wells at NAVSTA Mayport are used for potable and irrigation purposes. These wells are numbered N-1 through N-4 (potable water) and D-236 (irrigation water). The closest well, N-3, is located approximately 1/4-mile upgradient of Building 460 and should not be impacted by petroleum contaminants detected in the groundwater at the site.

The Navy recommends a monitoring only proposal for petroleum-contaminated groundwater and remediation of excessively contaminated soil at the site. The source of contamination at the site, the USTs, have been removed. Infiltration of stormwater is precluded by the buildings and asphalt that cover the excessively contaminated soil at the site. Remediation of excessively contaminated soil therefore, can occur by biodegradation of petroleum constituents.

ACKNOWLEDGMENTS

In preparing this report, the underground storage tank Section of the Comprehensive Long-Term Environmental Action Navy group at ABB Environmental Services, Inc. commends the support, assistance, and cooperation provided by the personnel of Naval Station Mayport, Mayport, Florida, and the Southern Division, Naval Facilities Engineering Command.

TABLE OF CONTENTS

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Chapter	Title	Page No.
1.0	INTRODUCTION	1-1
2.0	SITE DESCRIPTION AND HISTORY	2-1
2.1	PREVIOUS PETROLEUM RELEASE	2-1
2.2	POTABLE WELL SURVEY	2-1
3.0	PHYSIOGRAPHY AND HYDROGEOLOGY	3-1
3.1	PHYSIOGRAPHY	3-1
3.1.1	Regional	3-1
3.1.2	Local	3-1
3.2	HYDROGEOLOGY	3-1
3.2.1	Regional	3-1
3.2.1.1	Surficial Deposits	3-1
3.2.1.2	Hawthorn Group	3-3
3.2.1.3	Marine Carbonate Sequences	3-3
3.2.2	Local	3-4
3.3	TIDAL STUDY	3-5
4.0	CONTAMINATION ASSESSMENT PROGRAM	4-1
4.1	SOIL BORING ADVANCEMENT, SOIL SAMPLING, AND SOIL ASSESSMENT PROGRAM	4-1
4.2	GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING PROGRAM	4-1
5.0	CONTAMINATION ASSESSMENT RESULTS	5-1
5.1	CONTAMINANT PLUME CHARACTERIZATION	5-1
5.1.1	Soil Assessment	5-1
5.1.2	Groundwater Assessment	5-1
5.2	GROUNDWATER ELEVATION SURVEY	5-1
5.3	AQUIFER CHARACTERIZATION	5-6
6.0	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	6-1
6.1	SUMMARY	6-1
6.2	CONCLUSIONS AND RECOMMENDATIONS	6-1
7.0	PROFESSIONAL REVIEW CERTIFICATION	7-1

TABLE OF CONTENTS (Continued)

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

REFERENCES

APPENDICES
Appendix A: Discharge Reporting Form
Appendix B: Soil Disposal Receipts
Appendix C: Closure Assessment Report
Appendix D: Preliminary Groundwater Analytical Data
Appendix E: Lithologic Logs
Appendix F: Groundwater Analytical Data
Appendix G: Aquifer Calculations

LIST OF FIGURES

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Figure	Title	Page No.
2-1	Facility Location Map	2-2
2-2	Site Location Map	2-3
2-3	Location of Potable Wells and/or Production Wells	2-4
3-1	USGS Topographic Map	3-2
4-1	Water Table Elevation Contour Map, May 23, 1995	4-2
4-2	Typical Shallow Monitoring Well Installation Detail	4-4
4-3	Typical Deep Monitoring Well Installation Detail	4-5
5-1	Soil Contamination Distribution Map, May and October 1995	5-2
5-2	Groundwater Contamination Distribution Map	5-3
5-3	Water Table Elevation Contour Map, June 1, 1995	5-7
5-4	Water Table Elevation Contour Map, September 1, 1995	5-8

LIST OF TABLES

Table	Title	Page No.
2-1	Potable Well Data	2-5
3-1	Water Table Elevation Data, 1992 Tidal Study, July 14, 1992	3-6
5-1	Summary of Soil Sample OVA Results, May 1995	5-4
5-2	Analytical Results of Groundwater Samples June 1995	5-5
5-3	Water Table Elevation Data, 1995	5-6

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CAR	contamination assessment report
CompQAP	Comprehensive Quality Assurance Plan
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
ft/day	feet per day
ft/ft	feet per foot
K	hydraulic conductivity
mg/ℓ	milligrams per liter
μg/ℓ	micrograms per liter
msl	mean sea level
MTBE	methyl tert-butyl ether
μmhos/cm	micromhos per centimeter
NAVSTA	Naval Station
NFA	no further action
OVA	organic vapor analyzer
ppb	parts per billion
ppm	parts per million
PVC	polyvinyl chloride
™	trade mark
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
V	velocity
VOCs	volatile organic compounds

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES) was contracted by Southern Division, Naval Facilities Engineering Command to conduct an assessment and submit a Contamination Assessment Report (CAR) for Building 460 at U.S. Naval Station (NAVSTA) Mayport, Florida. The scope of services is described in Contract Task Order No. 119, the Plan of Action, and the Contamination Assessment Plan. The field investigation was initiated in May 1995, and included the following:

- soil sample screening with an organic vapor analyzer (OVA) to assess concentrations of volatile organic compounds (VOCs) in the unsaturated zone surrounding the former underground storage tanks (USTs);
- installing and sampling temporary piezometers to assess contaminant concentrations and the groundwater flow direction, prior to permanent monitoring well installation;
- installing and sampling groundwater monitoring wells to assess the horizontal and vertical extent of groundwater contamination;
- performing a potable well inventory within a ½-mile radius of the site; and
- reducing and analyzing data gathered during the assessment to estimate aquifer characteristics.

The CAR was prepared in accordance with State guidelines for petroleum assessments, which are outlined in Chapter 62-770, Florida Administrative Code (FAC). The following sections of the CAR present the background information, data compilation, field investigative results, and recommendations for the site.

2.0 SITE DESCRIPTION AND HISTORY

The U.S. Naval Station at Mayport, Florida, is located about 15 miles east-northeast of downtown Jacksonville, Florida (Figure 2-1). NAVSTA Mayport was established in 1942 on approximately 700 acres of land. The station was placed in caretaker status in 1946, reopened in 1948, and in 1952 was assigned an aircraft carrier, in addition to the patrol craft, target, and rescue boats already assigned to the facility. Today NAVSTA Mayport is primarily involved with intermediate level maintenance of equipment, ships, aircraft, and other support units assigned to the portion of the Second Fleet stationed at the facility.

Building 460 is located in the northeast section of NAVSTA Mayport, southeast of the Turning Basin, near the intersection of Massey Avenue and Bon Homme Richard Street (Figure 2-2). It houses the Navy Credit Union on the west end and classrooms and a library on the east end. The site previously used two USTs containing #2 fuel oil to heat the building and fuel the emergency generator.

2.1 PREVIOUS PETROLEUM RELEASE. Based on information provided by the Base Environmental Coordinator, a tank closure for tanks 460 and 460G was conducted by V & W Construction & Services Company in March 1994. Soil screening by headspace analysis was conducted using an OVA equipped with a flame ionization detector (FID). Hydrocarbon vapor concentrations greater than 50 parts per million (ppm) were detected throughout the excavation area, indicating the presence of excessively contaminated soil, as defined by the State for the kerosene analytical group (62-770, FAC). A copy of the Discharge Reporting Form, which indicated an unknown amount of fuel had been released as a result of tank corrosion, has been enclosed in Appendix A.

Approximately 300 tons of excessively contaminated soil was removed during the tank closure and transported to Kedesh Soils & Asphalt in Kingsland, Georgia, for thermal treatment. Copies of the soil disposal weight tickets and transport manifests are enclosed in Appendix B.

Seven soil samples were also collected during the tank closure from various locations within the excavated area for analyses. The samples were analyzed for volatile organic aromatics by U.S. Environmental Protection Agency (USEPA) Method 5030/8021, total recoverable petroleum hydrocarbons (TRPH) by USEPA Method 9073, and the eight Resource Conservation and Recovery Act metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by the toxicity characteristic leaching procedure. TRPH concentrations exceeded the State's maximum contaminant level of 10 ppm in all seven soil samples. A copy of the Closure Assessment Form and aforementioned laboratory analyses are included in Appendix C.

2.2 POTABLE WELL SURVEY. ABB-ES conducted a potable well survey at NAVSTA Mayport to assess the risk of contamination to potable water sources from petroleum constituents in the soil and groundwater at Building 460. NAVSTA Mayport currently uses five onsite wells for potable and irrigation purposes which are numbered N-1 through N-4 (potable water) and D-236 (irrigation water). The

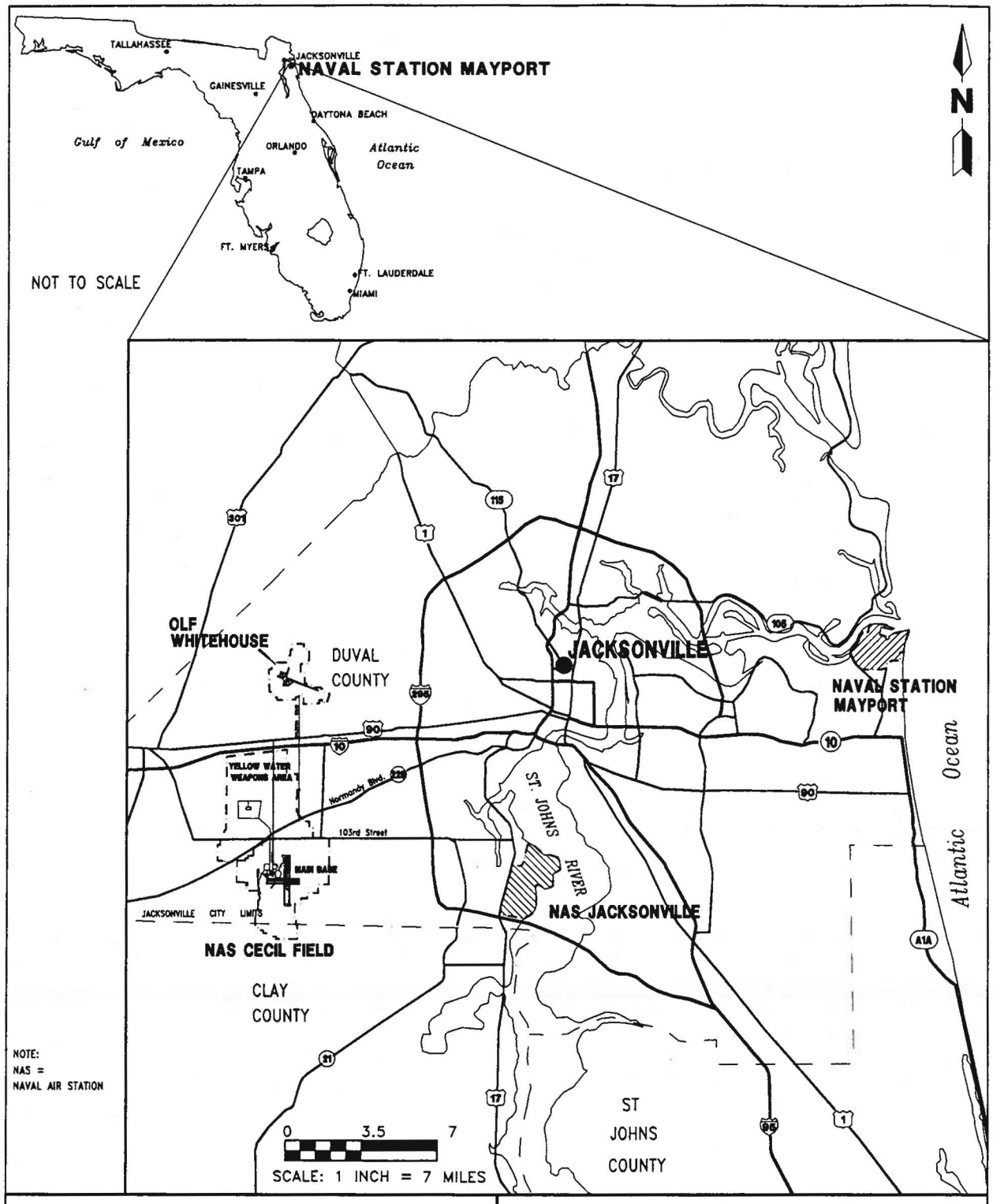


FIGURE 2-1
FACILITY LOCATION MAP

H:\MAYPORT\LOCATOR\CCK-NP-PS-JC-PS\01-29-96

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

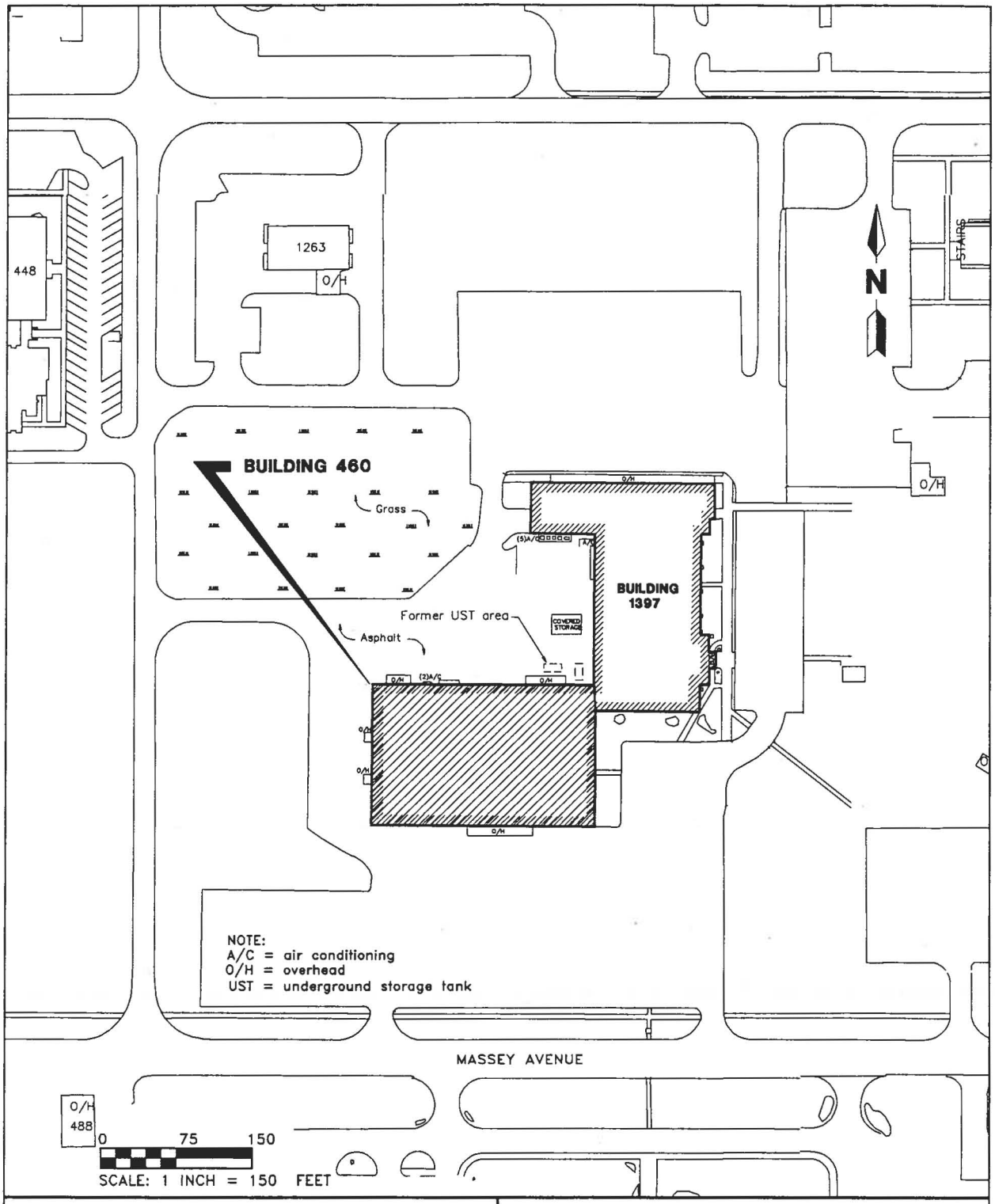


FIGURE 2-2
SITE LOCATION MAP

H:\MAYPORT\BEQCAP\CCK-NP-NAB-PS\01-29-96

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

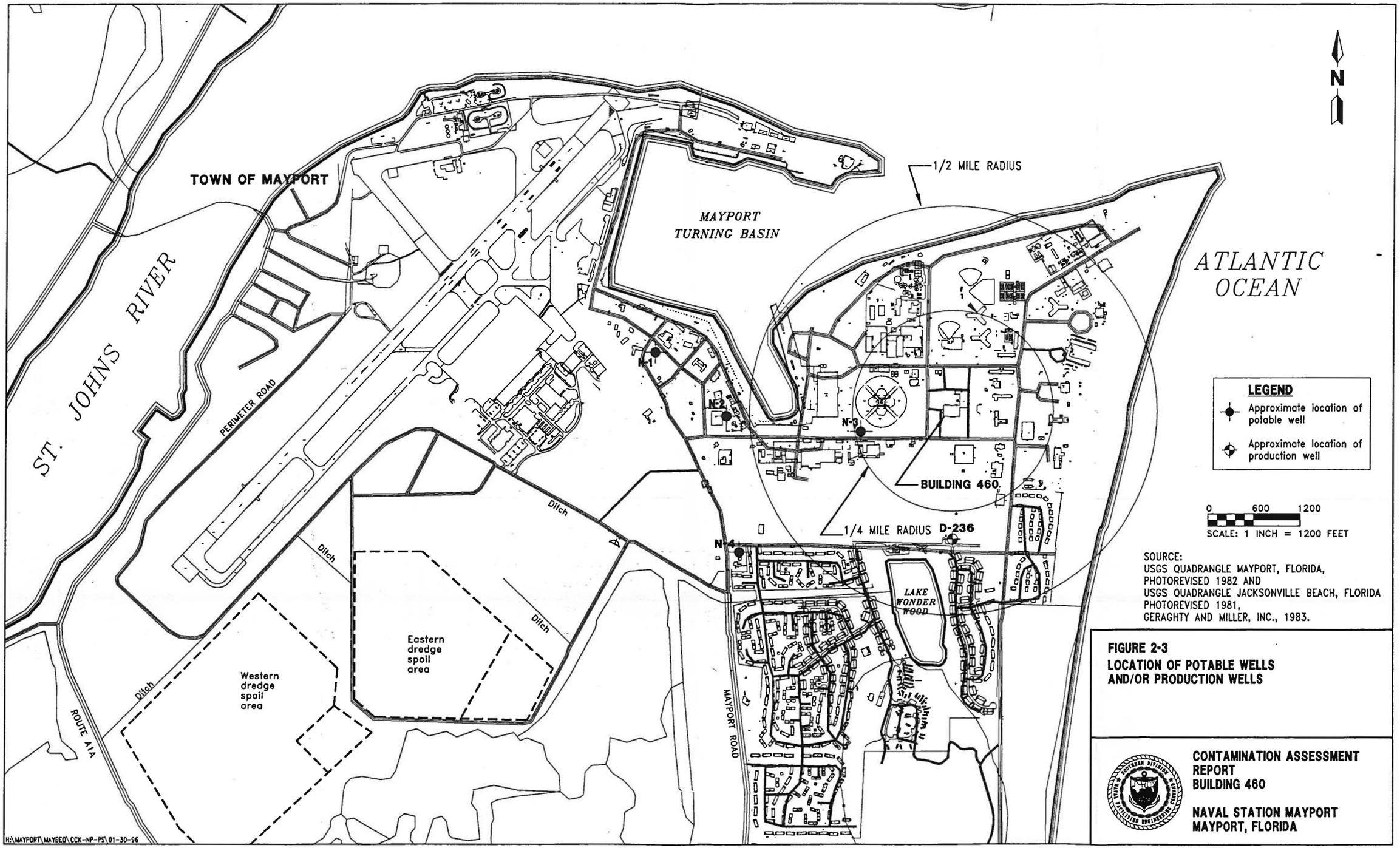


FIGURE 2-3
LOCATION OF POTABLE WELLS AND/OR PRODUCTION WELLS

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

closest well, N-3, is located approximately 1/4 mile southwest of the site (Figure 2-3). The well has a total depth of 1,000 feet below land surface (bls) with an open hole interval in the Floridan Aquifer. The well is separated from the Surficial Aquifer System by the confining sediments of the Hawthorn Group; therefore, petroleum contaminants within the groundwater near Building 460 should not be of concern to the potable water supply at NAVSTA Mayport. Table 2-1 summarizes the construction details of the five onsite wells at NAVSTA Mayport.

Table 2-1
Potable Well Data

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Well Designation	Owner	Date Installed	Casing Diameter (inches)	Surface Elevation (ft msl)	Total Depth (feet)	Interval Open to Formation (feet depth)	Status
N-1	U.S. Navy	1961	12	10	1,001	435 to 1,001	In use
N-2	U.S. Navy	1958	12	10	1,000	435 to 1,000	In use
N-3	U.S. Navy	1979	16	10	1,000	433 to 1,000	In use
N-4	U.S. Navy	1979	16	10	1,000	419 to 1,000	In use
D-236	U.S. Navy	1962	6	9	814	440 to 814	Irrigation

Source: Geraghty & Miller, 1983.

Note: ft msl = feet above mean sea level.

3.0 PHYSIOGRAPHY AND HYDROGEOLOGY

3.1 PHYSIOGRAPHY.

3.1.1 Regional NAVSTA Mayport is located in the Atlantic Coastal Lowlands physiographic province of northeast Florida, which encompasses a series of ancient marine terraces. Each terrace marks the Pleistocene ocean floor during a period of regression. With each episode of regression, the ocean floor became exposed as a flat plain, revealing a low scarp and sand dune ridge along the landward edge, thereby marking the abandoned shoreline. The flat plains and abandoned shorelines have since been dissected and eroded by streams, leaving only remnants of the original terraces. Seven terraces are recognized in Duval County, with NAVSTA Mayport being situated mostly on a remnant of the Pamlico terrace (10-25 feet above mean sea level [msl]). Between the Coastal Ridge (an ancient sand dune) and the Atlantic Ocean, the Pamlico and Silver Bluff terraces have been divided by the drainage of the Intracoastal Waterway, forming elongated islands, which are parallel to the coast (approximately 10 feet above msl), and low tidal marsh areas (0-10 feet above msl).

3.1.2 Local NAVSTA Mayport, located at the junction of the St. Johns River and the Atlantic Ocean, is situated on the northern end of an elongated island between the Atlantic Ocean and the Intracoastal Waterway (Figure 3-1). Surface water drainage is directed to the Intracoastal Waterway for subsequent discharge into the St. Johns River. Locally, surface drainage is toward storm drains in the parking lot east of the building. Topographic elevations at Building 460 range between 8 and 12 feet above msl with most of the site being covered by grass or paved with asphalt.

3.2 HYDROGEOLOGY.

3.2.1 Regional Distribution of sediments in northeastern Florida was controlled by the Peninsular Arch and the Southeast Georgia Embayment. More than 1,500 feet of Eocene Age and younger sediments were deposited in the region. The underlying unconsolidated geologic sequence consists of flat-lying deposits of sand, silt, and clay, which overlies a thick sequence of consolidated marine carbonates. There are three discernible lithologic units within the region, which correspond to three separate aquifer systems. These hydrogeologic units are described in more detail below.

> Surficial deposits of late Miocene to Recent age form a unit approximately 40 to 100 feet thick, which comprises the Shallow Aquifer System.
>
> The Hawthorn Group of middle Miocene age is approximately 300 feet thick and serves as a confining unit between the Shallow Aquifer and the lower Floridan Aquifer systems.
>
> Marine carbonate sequences of the Floridan Aquifer System are of Eocene age and are greater than 1,000 feet thick.

3.2.1.1 Surficial Deposits Surficial deposits are sediments of upper Miocene age and younger, which comprise the Shallow Aquifer System. These deposits can

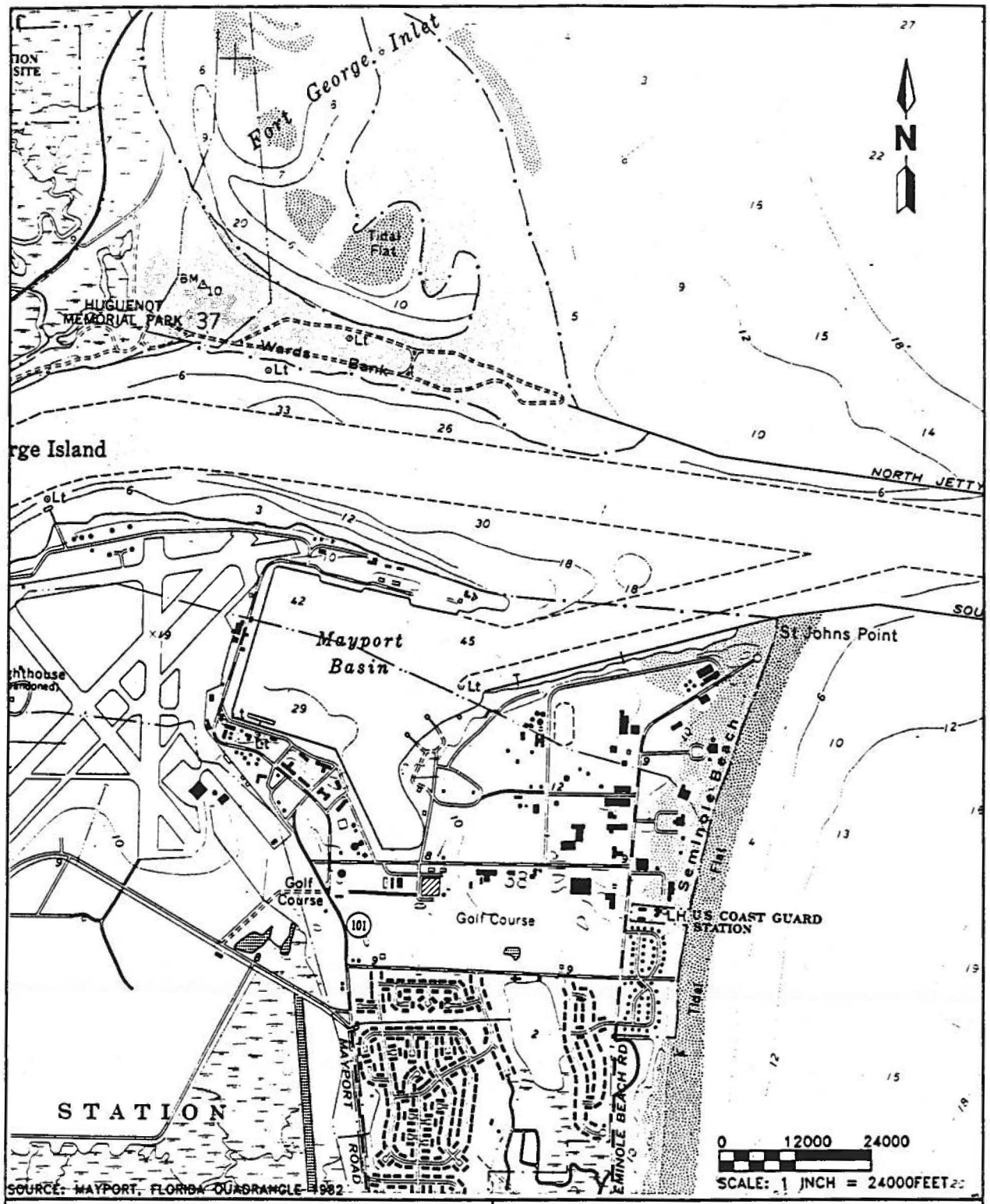


FIGURE 3-1
USGS TOPOGRAPHIC MAP

H:\MAYPORT\BEOCAP\CCK-NP-PS\01-31-96

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

be divided into the upper, undifferentiated, shallow marine sediments of Pleistocene and Recent age and the lower sediments of upper Miocene or Pliocene age, which were deposited in lagoonal and estuarine environments. The Pleistocene and Recent age sediments extend from the surface to depths of 10 to 100 feet bls in Duval County. These sediments include fine- to medium-grained, poorly-sorted quartz and clayey sand containing thin, gray, sandy clay beds. Iron oxide cemented, rust-colored hardpan consisting of fine grained sand is common in the upper portion of the surficial deposits.

The upper Miocene or Pliocene sediments consist of interbedded silty clay and clayey sand, sand, shell, and soft friable limestone, which is prevalent at the base of these deposits. The basal limestone is the major water-yielding zone in the Shallow Aquifer System. The Shallow Aquifer System, under central and eastern Duval County, is composed of a series of permeable zones separated by confining or semi-confining beds. The direction of groundwater flow in the water table zone of the Shallow Aquifer System tends to reflect the surface topography of the area. Groundwater in this zone generally flows from the higher topographic areas to the lower topographic areas, or to areas of discharge (e.g., springs or streams that intersect the water table). Throughout much of Duval County, the water table zone flows generally towards the St. Johns River.

The Shallow Aquifer System is recharged by local precipitation, which in Duval County averages approximately 52 to 54 inches annually. Hydrography of water levels indicates 10 to 16 inches of rainfall recharge the Shallow Aquifer System annually (Fairchild, 1972). The quantity of recharge was estimated by Hendry using a porosity of 20 percent. Discharge from the Shallow Aquifer System occurs by evapotranspiration, seepage into surface water bodies, downward leakage into aquifers within the Hawthorn Group, and pumping from wells.

3.2.1.2 **Hawthorn Group** The contact between the upper Miocene or Pliocene deposits and the underlying Hawthorn Group is an unconformity identified by a coarse phosphatic sand and gravel bed (Leve, 1966). Phosphate is present throughout the sediments of the Hawthorn Group, comprising the primary distinguishing constituent. When the course phosphatic sand and gravel is not present, the upper Miocene or Pliocene deposits can be distinguished from the Hawthorn Group by the lack of phosphate.

Lithologically, the Hawthorn Group is a complex unit consisting of calcareous, phosphatic sandy clay and clayey sand interbedded with thin, discontinuous lenses of phosphatic sand, phosphatic sandy limestone, limestone, and dolostones. The limestone and dolostone lenses become thicker and more prevalent near the base of the Hawthorn, which lies unconformably above the Ocala Group (Crystal River Formation). Permeable sand and limestone lenses within the Hawthorn's confining clay layers form the Intermediate Aquifer System, which may be hydraulically connected to either the Shallow Aquifer System above or the Floridan Aquifer below. The predominant, impermeable clay types (smectite, illite, palygorskite, and kaolinite) of the Hawthorn Group serve as the Intermediate Confining Unit separating the Shallow Aquifer System from the underlying Floridan Aquifer System.

3.2.1.3 **Marine Carbonate Sequences** The marine carbonate sequences comprising the Floridan Aquifer System consist of the following formations in descending order:

- the Ocala Group, which consists of the Crystal River Formation, the Williston Formation, and the Inglis Formation;
- the Avon Park Limestone;
- the Lake City Limestone; and
- the Oldsmar Limestone.

The Floridan Aquifer System is the principal source of freshwater in northeast Florida. The top of the Floridan Aquifer System in the vicinity of NAVSTA Mayport occurs at a depth of approximately 400 feet bls (Causey and Phelps, 1978). Recharge to the Floridan Aquifer is predominantly by direct rainfall along the Ocala Uplift where the limestone of the aquifer outcrop at the land surface. In northeast Florida there is also an area of recharge, which encompasses western Clay and Putnam counties and eastern Alachua and Bradford counties. Permeable sand and gravel facies of the Hawthorn Group outcrop in this area, which may be hydraulically connected to the Floridan Aquifer System.

The formations comprising the Floridan Aquifer System range in age from the late Eocene Crystal River Formation to the early Eocene Oldsmar Limestone. The surface of the Eocene limestone in the western part of Duval County slopes northeastward, but slopes northwestward in the eastern part of the county, forming an irregular trough or basin that extends from south-central Duval County northeastward to northeastern Nassau County. A fault extends along the axis of this trough, directly below the St. Johns River, but ends to the north approximately where the river turns eastward. The upthrown block is on the west side of the fault. The vertical displacement, which decreases northward, is 125 feet in southern Duval County.

The Crystal River Formation is a white to cream, chalky, massive fossiliferous limestone. The Williston Formation, which lies conformably between the overlying Crystal River Formation and the underlying Inglis Formation, is a tan to buff granular limestone. The Inglis Formation, of early late Eocene age, is lithologically a tan to buff calcitic limestone, which is very similar to the Williston Formation (Leve, 1966).

The Avon Park Limestone, of late middle Eocene age, is unconformably overlain by the Ocala Group. It consists of alternating beds of tan, hard, massive dolomite, and brown to cream, granular, calcitic limestone. The Lake City Limestone unconformably underlies the Avon Park Limestone and is early middle Eocene in age. Lithologically, it consists of alternating beds of white to brown, chalky to granular limestone with lignite bands, and gray to tan dolomite. Below the Lake City Limestone is the Oldsmar Limestone of early Eocene age. It consists of a cream to brown, soft, granular limestone and cherty, glauconitic, massive to finely crystalline dolomite (Leve, 1966).

<u>3.2.2 Local</u> The Holocene to Pliocene deposits comprising the Shallow Aquifer System are as much as 200 feet thick in Duval County. The base of the Shallow Aquifer System was not reached during the assessment, but Franks (1980) indicated the sediments of the unconfined aquifer are approximately 70 feet thick at NAVSTA Mayport. These sediments consist of unconsolidated sand, shell, and thin clay lenses. A layer of greenish-gray clay with minor shell fragments of upper Miocene or Pliocene Age was encountered from 70 to 80 feet bls, with the typical basal

limestone extending below the clay to at least 95 feet bls. The principal water-bearing zones at NAVSTA Mayport are a shelly sand bed 35 to 55 feet bls and the basal limestone starting approximately 80 feet bls (Franks, 1980).

Seasonal fluctuations in water table depth are expected with variations in rainfall and tidal activity. The depth to the water table surface at the site ranged from approximately 3 to 8 feet bls during the assessment, but was dependent upon the topographic elevation of each monitoring well. Water quality data (Franks, 1980) from the Shallow Aquifer System at NAVSTA Mayport indicate a freshwater lens exists in the upper zone, which becomes increasingly brackish with depth. The freshwater lens varies in thickness from about 40 feet near the center of NAVSTA Mayport to zero at the St. Johns River and the Atlantic Ocean. Although the freshwater could be used as a potable water supply, its use is limited because of low yields and brackish water intrusion in response to pumping. During Franks' investigation, water in one test well, which was being pumped at about 20 gallons per minute, was observed to be gradually increasing in specific conductance after pumping for only about 30 minutes. Specific conductance in the fresh water zone ranged from 630 micromhos per centimeter (μmhos/cm) to 1,350 μmhos/cm. Specific conductance in the brackish water zone ranged from 12,800 μmhos/cm to 15,500 μmhos/cm. Total dissolved solids in the upper zone of the Shallow Aquifer System ranged from 570 to 840 milligrams per liter (mg/ℓ). Because this zone can potentially be used as a potable water source and total dissolved solids are less than 10,000 mg/ℓ, the fresh groundwater is considered Class G-II (Chapter 62-3, FAC, Water Quality Standards). Groundwater in the brackish water zone is considered Class G-III.

3.3 TIDAL STUDY. During a 1992 tidal study at the Alpha-Delta Pier, water level data were collected during the full moon phase of a lunar cycle. Water levels were measured during high tide, low tide, and an intermediate tide to assess the effect the maximum tidal range has on groundwater elevation. Groundwater elevation data are summarized in Table 3-1. Data indicate groundwater elevations at the Alpha-Delta Pier site, in monitoring wells nearest the Turning Basin, exhibited the greatest variation in elevation and that tidal effects on groundwater elevations decrease with distance from the Turning Basin.

During the Alpha-Delta Pier contamination assessment, the groundwater flow direction varied from east to north; however, groundwater flow was predominantly north toward the Turning Basin. The water table configuration at the site roughly paralleled the topography and the groundwater flow direction remained relatively constant. Tidal effects at the Building 460 site are expected to be less pronounced because the site is farther inland than the Alpha-Delta Pier site.

Table 3-1
Water Table Elevation Data, 1992 Tidal Study,
July 14, 1992

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Monitoring Well Number	Total Well Depth (feet)	Top of Casing Elevation[1] (feet)	High Tide (0902 Hours)		Low Tide (1524 Hours)		Intermediate Tide (1915 Hours)	
			Depth to Water (feet)	Water Level Elevation[1] (feet)	Depth to Water (feet)	Water Level Elevation[1] (feet)	Depth to Water (feet)	Water Level Elevation[1] (feet)
MPT-1406-01	12.51	6.96	4.45	2.51	4.55	2.41	4.50	2.46
MPT-1406-02	12.77	6.80	4.23	2.57	4.28	2.52	4.25	2.55
MPT-1406-03	12.69	7.19	4.95	2.24	5.67	1.52	5.00	2.19
MPT-1406-04	12.82	6.82	4.54	2.28	5.59	1.23	4.55	2.27
MPT-1406-05	12.90	6.46	3.77	2.69	3.98	2.48	3.81	2.65
MPT-1406-06	12.50	7.45	4.75	2.70	5.31	2.14	4.80	2.65
MPT-1406-07	11.90	7.69	4.92	2.77	5.15	2.54	4.97	2.72
MPT-1406-08	12.47	7.50	4.26	3.24	4.29	3.21	4.28	3.22
MPT-1406-09	NM	6.50	3.46	3.04	3.53	3.56	3.46	3.63
MPT-1406-10	12.85	7.41	4.20	3.21	4.22	3.19	4.23	3.18
MPT-1406-11	12.80	7.67	5.44	2.23	5.78	1.89	5.57	2.10
MPT-1406-12	11.70	6.76	4.24	2.52	4.30	2.46	4.30	2.46
MPT-1406-13	12.76	6.82	4.05	2.77	4.15	2.67	4.10	2.72
MPT-1406-14	12.68	6.26	3.66	2.60	3.78	2.48	3.71	2.55
MPT-1406-15	12.80	5.93	3.36	2.57	3.74	2.19	3.43	2.50
MPT-1406-16	13.20	8.49	5.77	2.72	FP	FP	FP	FP
MPT-1406-17	13.50	7.24	4.28	2.96	4.30	2.94	4.22	3.02
MPT-1406-18	29.70	22.40	18.44	3.96	18.44	3.96	18.44	3.96
MPT-1406-19	12.73	7.09	3.84	3.25	3.92	3.17	3.92	3.17
MPT-1406-20	12.42	6.57	4.21	2.36	4.46	2.11	4.34	2.23
MPT-1406-21	12.74	6.62	4.24	2.38	4.49	2.13	4.39	2.23
MPT-1406-22	12.56	7.26	5.00	2.26	5.34	1.92	5.17	2.09

[1] Elevation datum is 8.20 feet, located on top of the bulkhead at the junction of Delta 1 and Delta 2 piers.

Notes: NM = not measured.
FP = free product exists in well, no measurement taken.

4.0 CONTAMINATION ASSESSMENT PROGRAM

Methodologies and equipment used during the field investigation were in conformance with ABB-ES's, Florida Department of Environmental Protection (FDEP) approved, Comprehensive Quality Assurance Plan (CompQAP) No. 870515G.

4.1 SOIL BORING ADVANCEMENT, SOIL SAMPLING, AND SOIL ASSESSMENT PROGRAM. Seventeen soil borings, SB-1 through SB-17, were manually advanced to the water table (approximately 4 to 6 feet bls) on May 10-12, May 17, and October 20, 1995, to assess the horizontal and vertical extent of petroleum contaminated soil in the unsaturated zone surrounding the former USTs. Soil samples were collected at 1 foot vertical intervals from the surface to approximately 6 feet below grade using a stainless steel hand auger. The soil samples were placed in 16 ounce glass jars, sealed with aluminum foil, and screened with an OVA equipped with an FID to assess the concentration of total VOCs in the soil. Soil screening was performed in accordance with requirements of Chapter 62-770, FAC, and the procedures outlined in Guidelines for Assessment and Remediation of Petroleum Contaminated Soil (FDEP, 1994). Soil boring locations and the OVA screening results are discussed in Subsection 5.1.1.

4.2 GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING PROGRAM. Prior to monitoring well placement, five temporary piezometers were installed on May 12 and 17, 1995, and subsequently sampled on May 15 and 17, 1995, for analyses by USEPA Method 602. Each piezometer (designated with a prefix P) was installed at a previous soil boring location, P1 at SB-15, P2 at SB-13, P3 at SB-14, P4 at SB-12, and P5 at SB-16. The piezometers were constructed of 2 inch diameter slotted polyvinyl chloride (PVC) well screen and were installed with a hand auger to depths approximately 2 feet below the water table. Subsequent analytical results indicated that groundwater samples collected at each location were below detection limits for the referenced constituents with the exception of 7.6 parts per billion (ppb) methyl tert-butyl ether (MTBE) at the P4 location. Refer to Appendix D for a copy of the preliminary laboratory analyses used to assess permanent monitoring well locations.

Top of casing elevations were surveyed with an auto-level and referenced to a datum point arbitrarily set at an elevation of 10.00 feet above msl. The groundwater elevations calculated for each piezometer indicated the groundwater flow direction was toward the northeast on May 23, 1995, as shown on Figure 4-1.

Seven shallow monitoring wells (MPT-CU-MW01S through MPT-CU-MW07S) were subsequently installed on May 23-25, 1995, to characterize the lithology and assess the horizontal extent of the groundwater contaminant plume. Each monitoring well was constructed with 3 feet of 2-inch- diameter PVC casing and 10 feet of 0.010-inch machine-slotted PVC well screen. The annular space surrounding each well screen was backfilled using 20/30 grade silica sand from total depth to approximately 2 feet below the ground surface. A 6-inch-thick bentonite seal was placed above the gravel pack followed by neat cement grout to the surface. A locking cap, lock, and traffic-bearing vault were installed on the monitoring well for protection and to prevent surface water from entering the aquifer.

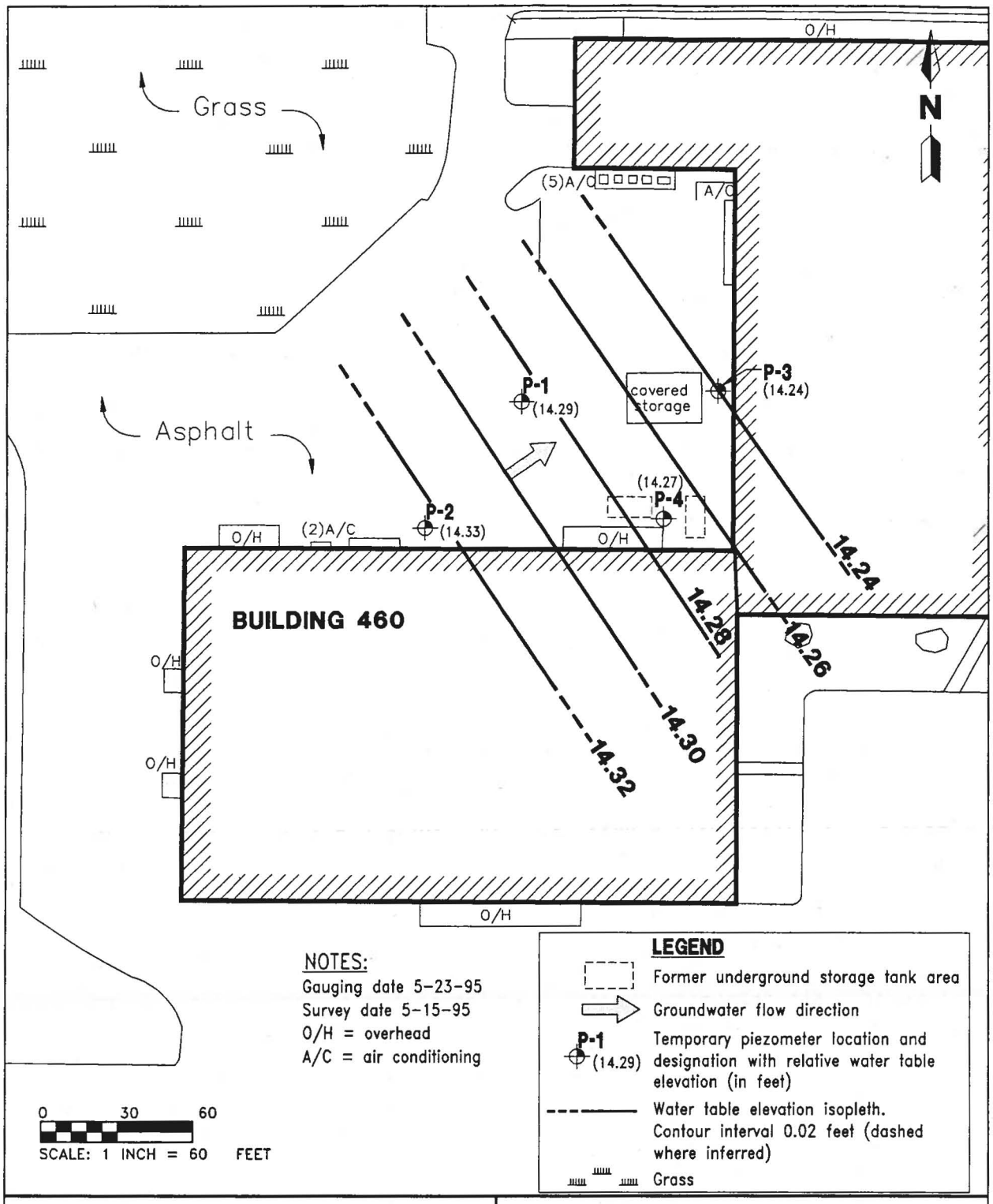


FIGURE 4-1
WATER TABLE ELEVATION CONTOUR MAP
MAY 23, 1995

H:\MAYPORT\BEQCAP\CCK-NP-NAB-PS\01-30-96

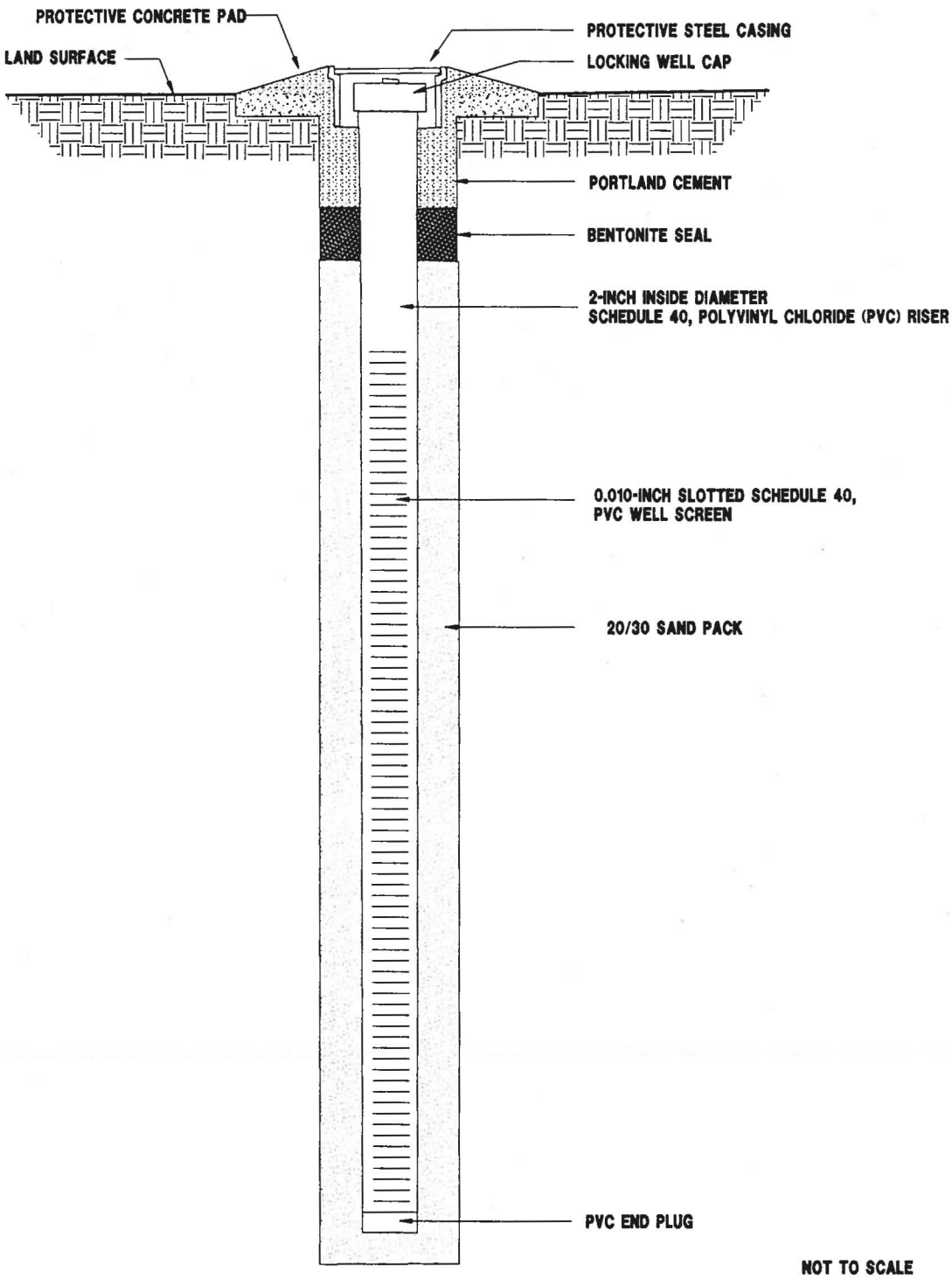
CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

Subsurface sediments encountered in the backfilled excavation area were generally composed of gravel fill material to a depth of 4 feet bls followed by tan to light gray silty sand with trace amounts of clay, to approximately 30 feet bls. The drill logs for each monitoring well are provided in Appendix E and a typical shallow monitoring well installation detail is presented as Figure 4-2.

A deep monitoring well (MPT-CU-MW08D) was installed to a depth of 30 feet bls on May 24-25,1995, to assess the vertical extent of petroleum contamination. The well was double cased, with a 6-inch-diameter PVC surface casing installed to a depth of 20 feet bls and a 2-inch-diameter PVC casing to 25 feet with 5 feet of 0.010 slotted well screen. The gravel pack, bentonite seal, and grout information for the deep well are similar to those of the shallow monitoring wells detailed above. The drill log for the deep monitoring well is provided in Appendix E and a typical deep monitoring well installation detail is presented as Figure 4-3.

Groundwater samples were collected from monitoring wells MW-01 through MW-07 and MW-08D on June 1, 1995, in accordance with ABB-ES's approved CompQAP. A minimum of five well volumes were purged from each monitoring well with a peristaltic pump before collecting samples using a Teflon™ bailer. The groundwater samples were placed in appropriate containers, preserved, packed on ice, and shipped to Quantera, Inc., in Tampa, Florida, for analyses by the kerosene analytical group. The kerosene analytical group includes USEPA Methods 239.2 for lead, 418.1 for TRPH, 504.1 for ethylene dibromide, 601 (purgeable halocarbons), 602 (purgeable aromatic hydrocarbons), and 610 (polynuclear aromatic hydrocarbons [PAHs]). Duplicate samples and equipment rinseate blanks were also collected and analyzed as required. Groundwater analytical results are discussed in Subsection 5.1.2.



NOT TO SCALE

FIGURE 4-2
TYPICAL SHALLOW MONITORING WELL INSTALLATION DETAIL

H:\9500\005000\CCK-NP\12-22-95

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

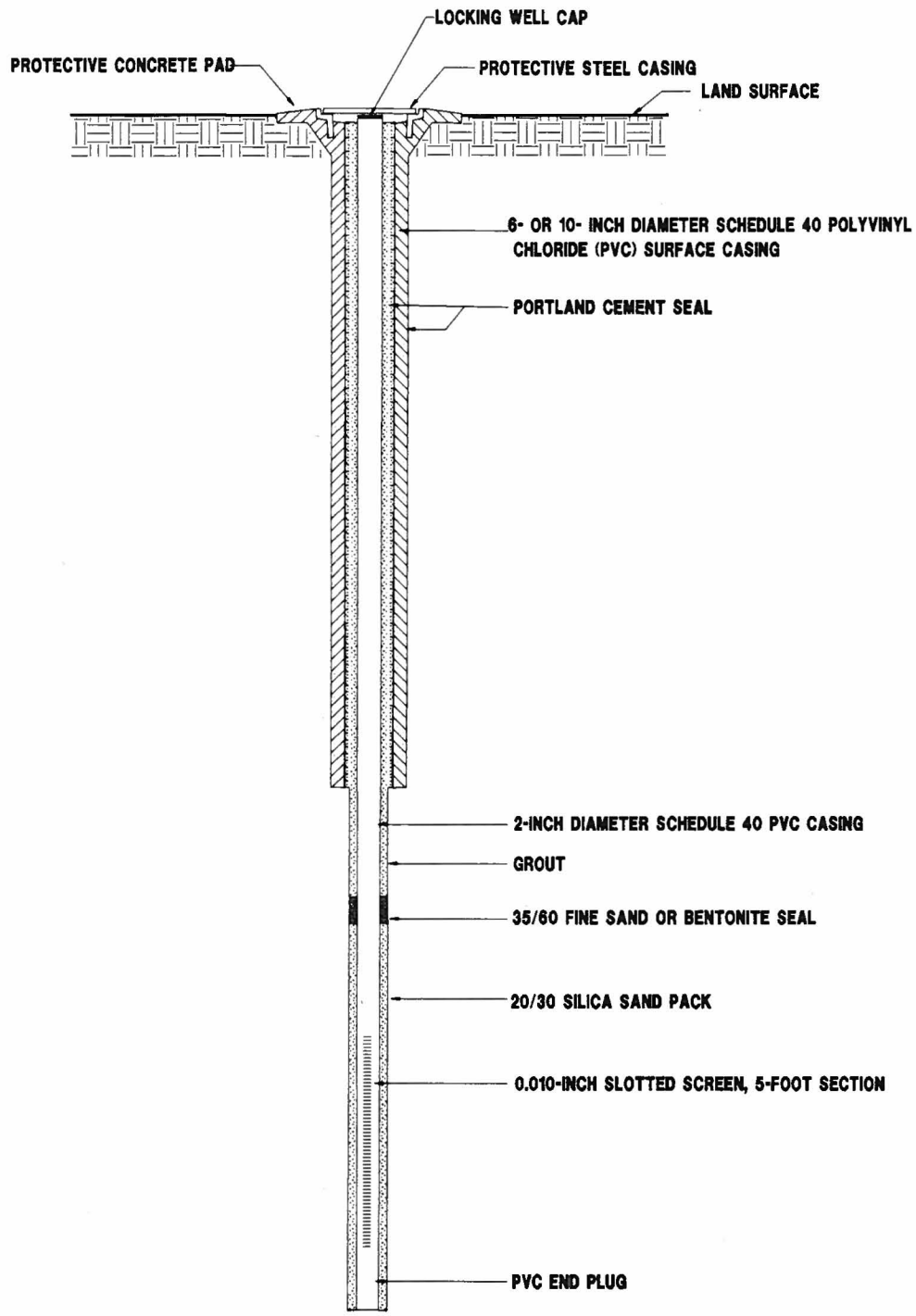


FIGURE 4-3
TYPICAL DEEP MONITORING WELL INSTALLATION DETAIL

H:\9500\005000\CCK-NP\12-22-95

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

5.0 CONTAMINATION ASSESSMENT RESULTS

5.1 CONTAMINANT PLUME CHARACTERIZATION.

5.1.1 Soil Assessment Soil sample concentrations were assessed by OVA headspace screening techniques and are summarized in Table 5-1. Soil contaminated by constituents of the kerosene analytical group, with OVA readings greater than 10 ppm, are defined in Chapter 62-770, FAC, as "petroleum contaminated" and may require remediation. Soil with OVA readings greater than 50 ppm are defined as excessively contaminated and must be remediated to remove the source of contamination and prevent leaching of contaminants into the groundwater.

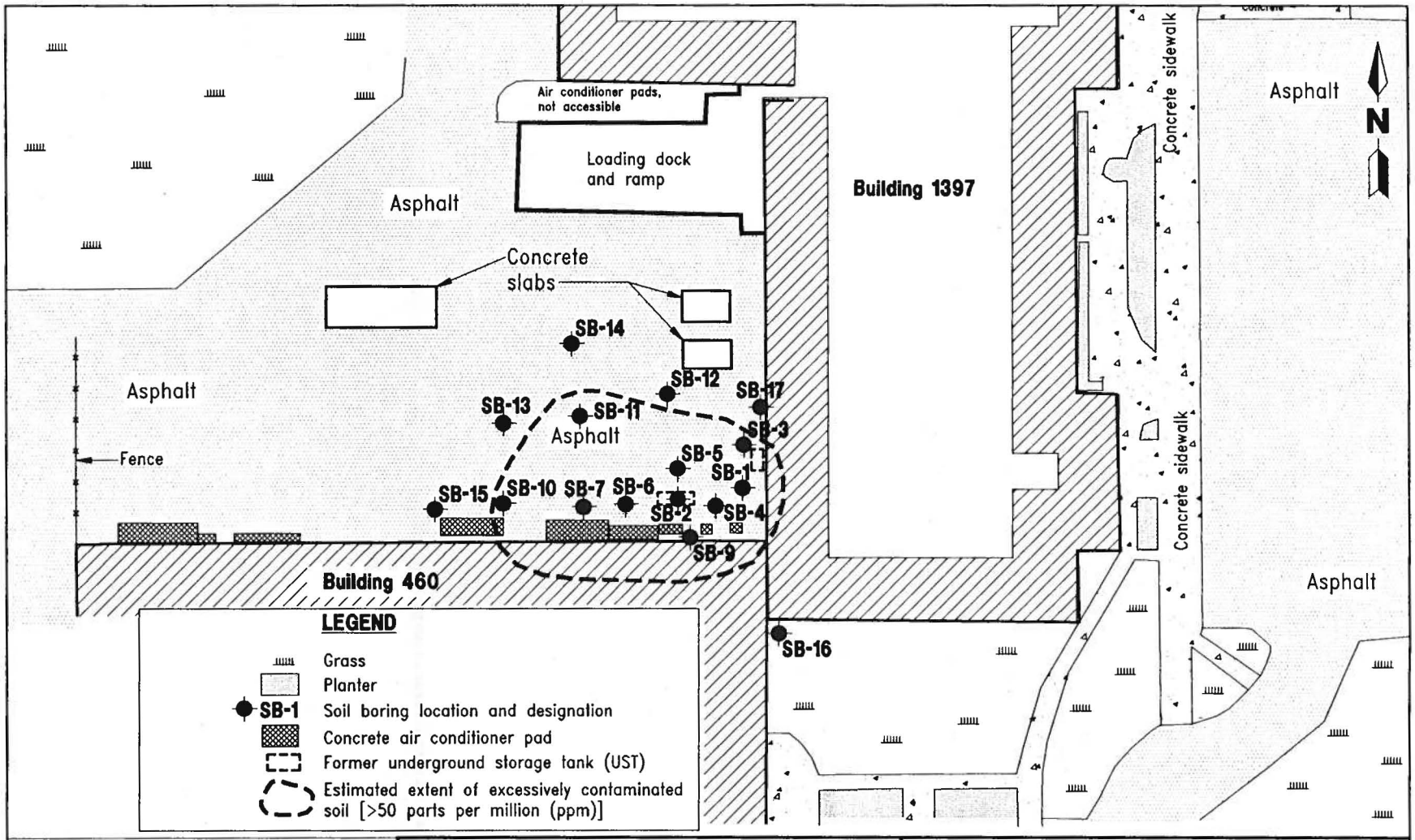
Soil samples were collected from soil borings SB-1 through SB-16 on May 10-12 and October 20, 1995, for subsequent screening using an OVA with an FID. Excessively contaminated soil was detected in the unsaturated zone (3.0 - 6.0 feet bls) in the vicinity of the excavation, an area approximately 90 feet by 50 feet in size. Please note, the vertical extent of excessively contaminated soil varies because of sample depth, groundwater fluctuations in the capillary zone, and depth to water at the time of sample acquisition. Figure 5-1 shows the approximate areal extent of excessively contaminated soil (>50 ppm) in the unsaturated zone at the site.

5.1.2 Groundwater Assessment Analytical results indicated dissolved hydrocarbon constituents in groundwater at the site near the former USTs; however, constituents concentrations were well below no further action (NFA) criteria except for groundwater samples obtained from the source well MW04. Maximum groundwater contaminant levels were detected in the groundwater samples obtained from MW04, which include 18 ppb benzene, 29 ppb ethylbenzene, 240 ppb MTBE, 16 ppb naphthalenes, and 2.6 ppb fluorene. Benzene and MTBE exceeded the NFA target level of 1 ppb and 50 ppb, respectively. Total VOA, total naphthalenes, and total PAH (excluding naphthalenes) concentrations were below the Class G-II NFA groundwater target levels. Petroleum constituents detected in the groundwater samples from each monitoring well are shown on Figure 5-2. Total VOA is the sum of benzene, toluene, ethylbenzene, and total xylenes. Analytical laboratory results of groundwater samples collected on June 1, 1995, are presented in Appendix F and summarized in Table 5-2.

5.2 GROUNDWATER ELEVATION SURVEY.

Depth to groundwater measurements for each monitoring well were obtained on June 1, 1995, and September 1, 1995, using an electronic water level indicator. Groundwater levels on June 1, 1995, were approximately 4 feet bls, whereas, on September 1, 1995, depth to water measurements varied from approximately 2 to 6 feet bls. Free product was not detected in any monitoring well at the site during either water level gauging episode.

Top of casing elevations were surveyed on August 11, 1995, by a Florida registered professional land surveyor and referenced to the U.S. Coastal and Geodetic Survey 1927 North American Datum (U.S. Coastal and Geodetic Survey NAD '27) and National Geodetic Vertical Datum of 1929. Water table elevations were subsequently calculated by subtracting the depth to groundwater from the top of casing elevation for each monitoring well. Depth to water, top of casing, and water table elevation data for each groundwater monitoring well are presented in Table 5-3.



0 25 50
SCALE: 1 INCH = 50 FEET

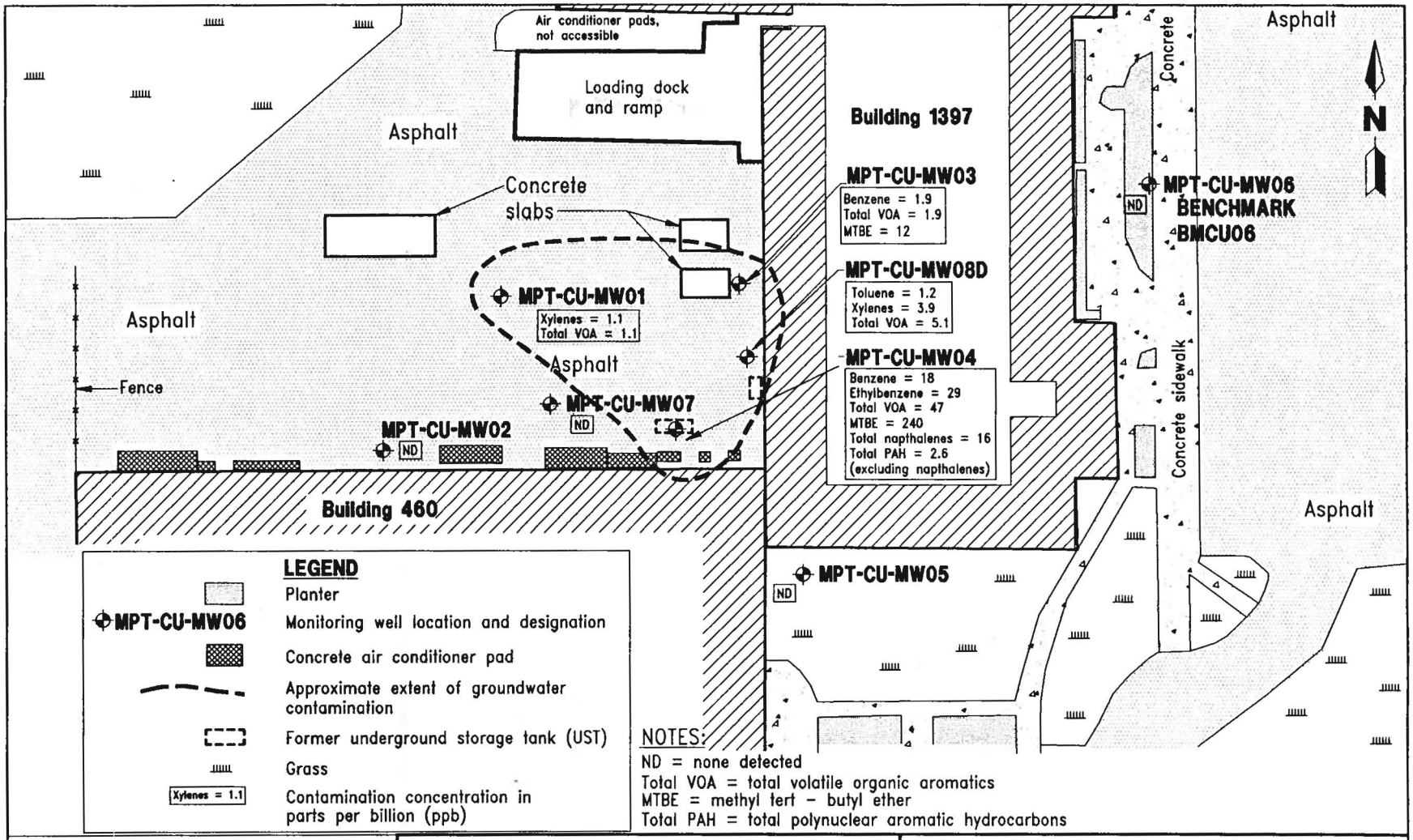
H:\9500\005100\CCK-NP-Nb-PS\01-30-96

FIGURE 5-1
SOIL CONTAMINATION DISTRIBUTION MAP, MAY AND OCTOBER, 1995

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

MPT-B460.CAR
PMW.01.96



0 25 50
SCALE: 1 INCH = 50 FEET

H:\9500\005100\CCK-NP-NAB-PS\01-30-96

FIGURE 5-2
GROUNDWATER CONTAMINATION DISTRIBUTION MAP, JUNE 1, 1995

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

Table 5-1
Summary of Soil Sample OVA Results, May 1995

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Boring Number	Depth (feet bls)	Unfiltered Concentration	Filtered Concentration	Corrected Concentration	Comments
SB-1	3.0 to 3.5	4	0	4	
	4.5 to 5.0	>5000	0	>5000	damp
	6.0 to 6.5	2400	0	2400	damp
SB-2	2.0 to 2.5	1600	0	1600	
	3.5 to 4.0	3100	0	3100	
	5.0 to 5.5	>5000	0	>5000	damp
	6.0 to 6.5	>5000	0	>5000	damp
SB-3	2.5 to 3.0	0	--	0	
	4.0 to 4.5	220	0	220	
	5.5 to 6.0	250	0	250	wet
SB-4	1.5 to 2.0	700	0	700	
	3.0 to 3.5	700	0	700	
	4.5 to 5.0	2000	0	2000	
SB-5	2.5 to 3.0	1500	0	1500	
	4.0 to 4.5	150	0	150	
	5.5 to 6.0	1900	0	1900	
SB-6	2.5 to 3.0	440	0	440	
	4.0 to 4.5	2200	0	2200	
	5.5 to 6.0	2600	0	2600	wet
SB-7	3.0 to 3.5	3000	0	3000	
	4.5 to 5.0	4300	0	4300	
	6.0 to 6.5	5000	0	5000	wet
SB-8	2.5 to 3.0	90	0	90	
	4.5 to 5.0	2400	0	2400	
SB-9	2.5 to 3.0	900	0	900	
	4.0 to 4.5	>5000	0	>5000	
	5.0 to 5.5	>5000	0	>5000	damp
SB-10	2.5 to 3.0	17	0	17	
	4.0 to 4.5	65	0	65	
	5.0 to 5.5	50	0	50	damp
SB-11	2.5 to 3.0	1	0	1	
	4.0 to 4.5	150	0	150	
	5.0 to 5.5	800	0	800	damp
SB-12	2.5 to 3.0	0	--	0	
	4.0 to 4.5	5	0	5	
	4.5 to 5.0	10	0	10	damp
SB-13	2.5 to 3.0	0	--	0	
	3.75 to 4.25	0	--	0	
	4.5 to 4.75	0	--	0	damp
SB-14	2.5 to 3.0	0	--	0	
	3.75 to 4.25	0	--	0	
	4.5 to 4.75	0	--	0	damp
SB-15	2.5 to 3.0	0	--	0	
	3.5 to 4.0	0	--	0	
	4.0 to 4.5	0	--	0	damp
SB-16	2.5 to 3.0	0	--	0	
	4.0 to 4.5	0	--	0	
SB-17	2.5 to 3.0	0	--	0	
	4.0 to 4.5	3	0	0	
	5.0 to 5.5	6	0	0	

Notes: Concentrations are reported in parts per million (ppm).
OVA = organic vapor analyzer
bls = below land surface.
SB = soil boring.
> = greater than
-- = no OVA reading

Table 5-2
Analytical Results of Groundwater Samples
June 1995

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

Contaminant	Well Identification MPT-CU-MW#									No Further Action Regulatory Standards[1] Class G-II Groundwater
	MW01	MW02	MW03	MW04	MW04DS	MW05	MW06	MW07	MW08D	
Volatile Organics (USEPA Method 601/602), ppb										
Benzene	ND	ND	1.9	18	18	ND	ND	ND	ND	50 ppb
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	1.2	
Ethylbenzene	ND	ND	ND	29	30	ND	ND	ND	ND	
Xylenes, total	1.1	ND	ND	ND	ND	ND	ND	ND	3.9	
Total VOAs	1.1	ND	1.9	47	48	ND	ND	ND	5.1	50 ppb
Methyl tert-butyl ether	ND	ND	12	240	230	ND	ND	ND	ND	50 ppb
Polynuclear Aromatic Hydrocarbons (PAHs) (USEPA Method 610), ppb										
Total Naphthalenes	ND	ND	ND	16	15	ND	NA	ND	ND	100 ppb
Total PAHs (excluding naphthalenes)	ND	ND	ND	2.6	2.9	ND	NA	ND	ND	10 ppb
Total Recoverable Petroleum Hydrocarbons (TRPH) (USEPA Method 418.1), ppm										
TRPH	ND	ND	NA	ND	ND	ND	ND	ND	ND	5 ppm
Ethylene Dibromide (EDB) (USEPA 601), ppb										
EDB	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02 ppb
Metals (USEPA Method 239.2) ppb										
Lead, unfiltered	ND	ND	ND	ND	ND	ND	ND	ND	ND	50 ppb

[1] Chapter 62-770.730 (5A), Florida Administrative Code.

Notes: DS = duplicate sample.
USEPA = U.S. Environmental Protection Agency
ppb = parts per billion.
ND = not detected.
Total VOAs = total volatile organic aromatics: the sum of benzene, toluene, ethylbenzene, and xylenes.
NA = Not Available (Samples bottles broken by laboratory during analyses).
ppm = parts per million.

Groundwater elevations calculated for the shallow monitoring wells indicate the groundwater flow direction at the site is generally toward the northeast. Water table elevation contour maps for each gauging date are shown in Figures 5-3 and 5-4.

The groundwater flow direction is toward the northeast with an average hydraulic gradient of 0.06 foot per 100 feet (ft/ft) (Appendix G).

Table 5-3
Water Table Elevation Data, 1995

Contamination Assessment Report
Building 460
NAVSTA Mayport, Mayport, Florida

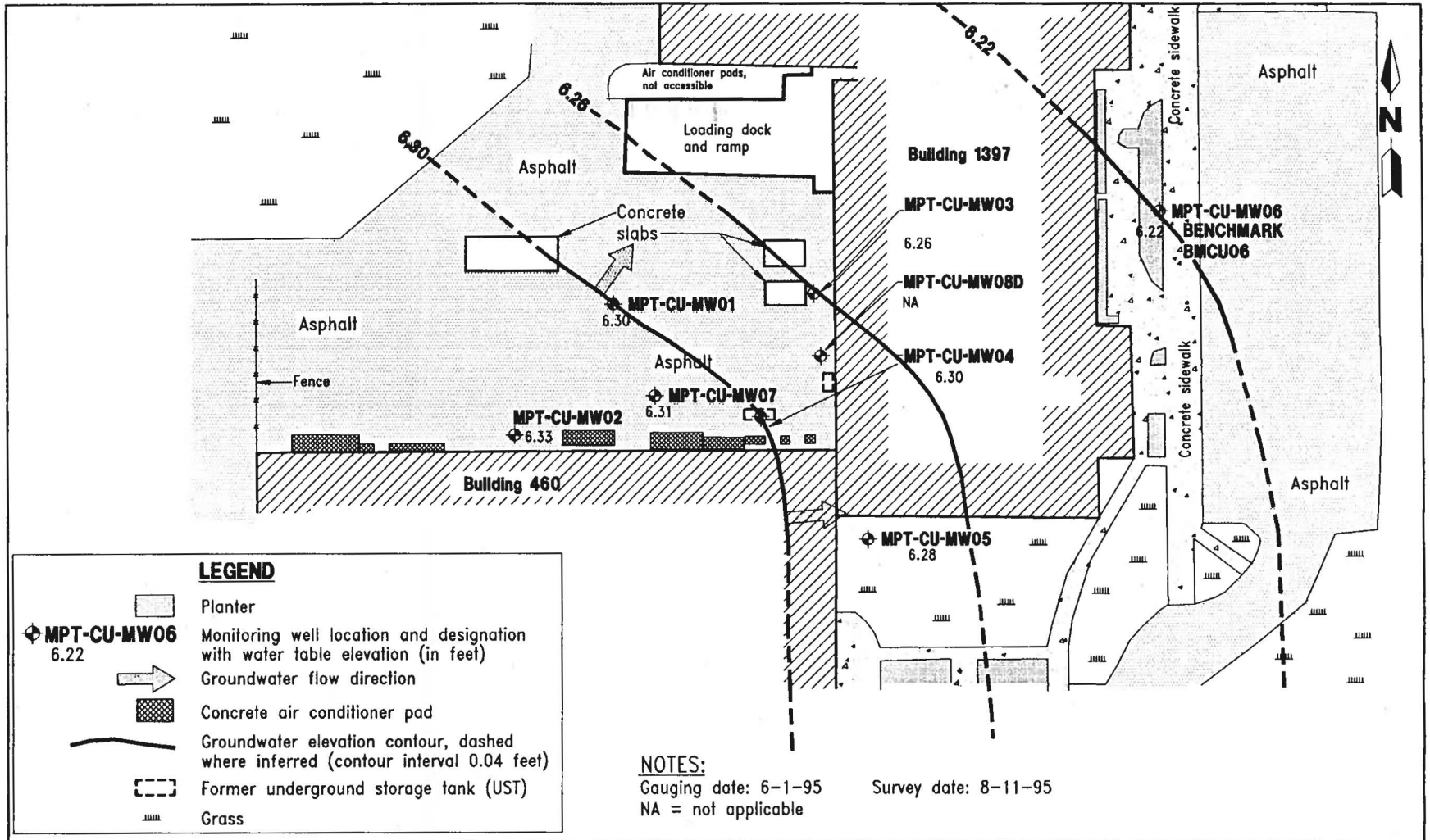
Monitoring Well Number	Total Well Depth (feet bls)	Screened Interval (feet bls)	TOC Elevation (feet MSL)	June 1, 1995		September 1, 1995	
				Depth to Water (feet BTOC)	Water Level Elevation (feet MSL)	Depth to Water (feet BTOC)	Water Level Elevation (feet MSL)
MPT-CU-MW01	13.0	3.0 to 13.0	11.28	4.98	6.30	2.35	8.93
MPT-CU-MW02	13.0	3.0 to 13.0	11.28	4.95	6.33	2.35	8.93
MPT-CU-MW03	13.0	3.0 to 13.0	11.29	5.03	6.26	2.41	8.88
MPT-CU-MW04	13.0	3.0 to 13.0	11.54	5.24	6.30	2.62	8.92
MPT-CU-MW05	13.0	3.0 to 13.0	11.71	5.43	6.28	2.77	8.94
MPT-CU-MW06	13.0	3.0 to 13.0	11.05	4.83	6.22	2.22	8.83
MPT-CU-MW07	13.0	3.0 to 13.0	11.33	5.02	6.31	2.40	8.93
MPT-CUMW08D	30.0	25.0 to 30.0	11.37	5.10	6.27	2.47	8.90

Notes: bls = below land surface.
MSL = mean sea level.
BTOC = below top of casing.
D = deep monitoring well

5.3 AQUIFER CHARACTERIZATION. Slug tests were conducted in two shallow monitoring wells, MW03 and MW04, to characterize the hydrological properties of the upper zone of the Shallow Aquifer System. The slug test data are used to calculate the hydraulic conductivity (K), which in turn is used to estimate the groundwater flow velocity and aquifer transmissivity.

A slug test is so-called because a slug (fixed volume) is either added to or removed from a monitoring well to displace the water column relative to the static water level. The test measures the recovery rate as the displaced water column equilibrates to the static water level. The recovery rate is directly proportional to the hydraulic conductivity of the aquifer. The equipment used for a slug test consists of a slug (a 5- or 10-foot length of 1-inch PVC pipe filled with sand and sealed at both ends), a data logger, and a pressure transducer. A nylon string tied to an eye-bolt attached to one end of the slug is used to lower it into and remove it from the monitoring well.

Slug tests were conducted at the site on June 9, 1995, by executing the following steps: (1) lowering a pressure transducer connected to a data logger into a monitoring well to electronically record water levels; (2) lowering an appro-



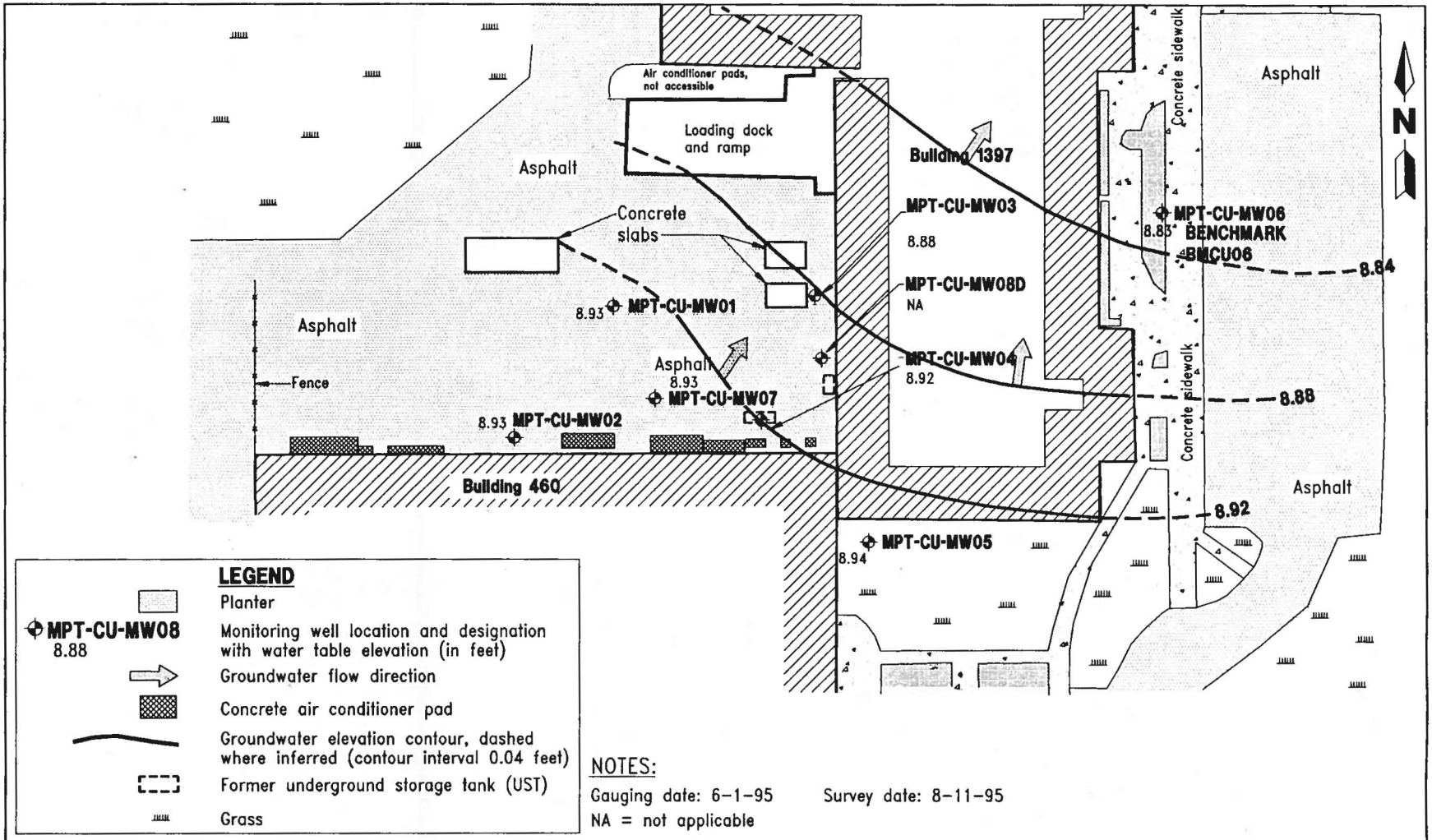
0 30 60
SCALE: 1 INCH = 60 FEET

H:\9500\005100\CCK-NP-NAB-PS\01-30-96

FIGURE 5-3
WATER TABLE ELEVATION CONTOUR MAP, JUNE 1, 1995

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA



NOTES:

Gauging date: 6-1-95 Survey date: 8-11-95

NA = not applicable

0 30 60

SCALE: 1 INCH = 60 FEET

H:\9500\005100\CCK-NP-NAB-PS\01-30-96

FIGURE 5-4
WATER TABLE ELEVATION CONTOUR MAP, SEPTEMBER 1, 1995

CONTAMINATION ASSESSMENT REPORT
BUILDING 460

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

priately-sized slug into the well, which creates a positive displacement of the water column; (3) allowing the water level in the well to equilibrate to the static water level; (4) rapidly withdrawing the slug from the well, which creates a negative displacement of the water column; and (5) electronically recording the recovery rate as the water column rises to equilibrate with the static water level.

The analytical solution presented by Bouwer and Rice (1976), developed for confined aquifers and partially penetrating wells, was used to determine hydraulic conductivity (K). Data from shallow monitoring wells, MW03 and MW04, are believed to represent conditions at Building 460.

Hydraulic conductivity (K) values derived from the slug test data ranged from 5.17 to 6.63 feet per day (ft/day). Based on an average K of 5.90 ft/day and gradient of 0.0006 ft/ft, the average linear pore water velocity (V) beneath the site was calculated to be 0.014 ft/day or 5.11 feet per year.

Aquifer characteristic calculations derived from the slug tests have been provided in Appendix G.

6.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 SUMMARY. Based on the findings of the soil, groundwater, and hydrologic assessment, the following is a summary of existing conditions at the site:

- The aquifer of concern at the site is the unconfined Shallow Surficial Aquifer. Water quality data indicate water in the upper part of the unconfined surficial aquifer is relatively fresh.

- The Shallow Surficial Aquifer was penetrated to a depth of 30 feet bls during this investigation. Subsurface sediments encountered at boring locations appear to be mostly fill material, which typically consisted of fine-grained sand, silt, and shell material. Naturally occurring sediments consisted of fine-grained sand and shell beds.

- The water table at the site was encountered at 5 to 6 feet bls.

- An area of excessively contaminated soil was detected near the former USTs, extending north approximately 30 feet, west approximately 50 feet, as well as south and east beneath Buildings 460 and 1264 for an unknown distance.

- Free product has not been observed in any monitoring well(s) at the site, to date.

- There are two production wells within a 1/2-mile radius of the site used to supply potable and irrigation water for NAVSTA Mayport. The closest potable well, N-3, is up-gradient of the site with an open hole interval in the Floridan Aquifer System. The well is separated from the Surficial Aquifer System by the confining sediments of the Hawthorn Group; therefore, petroleum contaminants in the groundwater at Building 460 should not be of concern to the potable water supply at NAVSTA Mayport.

- Analytical results indicated dissolved hydrocarbon constituents in groundwater at the site consisting of benzene, toluene, ethylbenzene, xylenes, naphthalenes, fluorene, and MTBE; however, constituents concentrations were well below NFA criteria except for MTBE in groundwater samples collected from MW04.

- The groundwater flow direction in the Shallow Surficial Aquifer is toward the northeast with a hydraulic gradient (I) of 0.0006 ft/ft. Hydraulic conductivity (K) values derived from the slug test data ranged from 5.17 to 6.63 ft/day. Based on an average K of 5.90 ft/day and gradient of 0.0006 ft/ft, the average linear pore water velocity (V) beneath the site was calculated to be 0.014 ft/day or 5.11 feet per year.

6.2 CONCLUSIONS AND RECOMMENDATIONS. In accordance with Chapter 62-770, the Navy recommends remediation of excessively contaminated soil by natural biodegradation and proposes monitoring only for petroleum-contaminated groundwater at the site.

All monitoring wells should be resampled for the compounds detected in the groundwater samples collected in June 1995. Monitoring wells MPT-CU-01 through MPT-CU-08D should be resampled because the time interval since they were last sampled exceeds the FDEP 6-month limit. The samples should be analyzed for U.S. Environmental Protection Agency Methods 602 (including methyl tert-butyl ether) and 610 because compounds from those groups were detected during the previous analyses.

If the resampling results confirm the previous analytical data, then a monitoring only proposal (MOP) will be the appropriate recommendation for the site. The MOP will recommend collection and analysis of groundwater samples on a quarterly basis from monitoring wells MPT-CU-02 (upgradient), MPT-CU-04 (downgradient), MPT-CU-07 (source area), and MPT-CU-08D (vertical extent). The resampling of monitoring wells MPT-CU-01 through MPT-CU-08D will be considered the initiation of the MOP. After monitoring is complete, the analyses will be compared to State target levels to determine if the monitoring only program should continue.

If a trend in decreasing contaminant concentrations is observed, the continuation of the monitoring only program will be considered appropriate; however, if contaminant levels drop below State target levels at the end of the monitoring period, a no further action plan will be submitted.

7.0 PROFESSIONAL REVIEW CERTIFICATION

This CAR was prepared under the direct supervision of a professional geologist registered in the State of Florida. The work and professional opinions rendered in this report were conducted or developed in accordance with commonly accepted procedures consistent with applicable standards of practice. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report referenced in public literature. Recommendations are based upon interpretations of the applicable regulatory requirements, guidelines, and relevant issues discussed with regulatory personnel during the site assessment. If conditions that differ from those described are determined to exist, the undersigned geologist should be notified to evaluate the effects of any additional information on this assessment or the recommendations made in this report. This report meets the criteria set forth in Chapter 492 of the Florida Statutes with regard to good professional practices as applied to Chapter 62-770, FAC. This CAR was developed for Building 460, NAVSTA Mayport, Mayport, Florida, and should not be construed to apply to any other site.

Joseph F. Fugitt

Joseph F. Fugitt
Professional Geologist
P.G. No. 1613

2-9-96

Date

REFERENCES

Bouwer, H., and R.C. Rice, 1976, "A Slug Test for Determining Hydraulic Conductivity for Unconfined Aquifers with Completely or Partially (penetrating wells)," *Water Resources Research*, Volume 12, pp. 423-428.

Bouwer, H., 1989, "The Bouwer and Rice Slug Test, an Update," *Groundwater*, Volume 127, pp. 304-309.

Causey, L.V., and Phelps, G.G., 1978, Availability and Quality of Water from Shallow Aquifers in Duval County, Florida: U.S. Geological Survey Water Resources Investigations 78-92, 36 p.

Fairchild, R.W., 1972, The Shallow Aquifer System in Duval County, Florida: Florida Bureau of Geology Report of Investigations No. 59, 50 p.

Florida Department of Environmental Protection, 1994, Guidelines for Assessment and Remediation of Petroleum Contaminated Soil: Bureau of Waste Cleanup, 48 p.

Florida Department of Environmental Regulation, 1990, No Further Action and Monitoring Only Guidelines for Petroleum Contaminated Sites: 6 p.

Franks, B.J., 1980, The Surficial Aquifer at the Naval Station near Mayport, Florida: U.S. Geological Survey Open File Report 80-765, 13 p.

Geraghty & Miller, Inc., 1983, Hydrogeologic Assessment and Ground-water Monitoring Plan, U.S. Naval Station, Mayport, Florida.

Geraghty & Miller, Inc., 1989, AQTESOLV, Aquifer Test Design and Analysis: Computer program version 1.00.

Leve, G.W., 1966, Groundwater in Duval and Nassau Counties, Florida: Florida Bureau of Geology Report of Investigation 43.

Leve, G.W., 1968, The Floridan Aquifer in Northeast Florida: Groundwater, vol. 6, no. 2, p. 19-29.

Spechler, R.M., 1982, Generalized Configuration of the Top of the Limestone Unit of the Lower Part of the Surficial Aquifer, Duval County, Florida: U.S. Geological Survey Water-Resources Investigations Open-File Report 82-336, 1 sheet.

U.S. Geological Survey 1982, Mayport Florida Quadrangle, 7.5-minute topographic series.

White, 1970, Geomorphology of the Florida Peninsula: Florida Bureau of Geology Bulletin 51, 164 p.

APPENDIX A

DISCHARGE REPORTING FORM

5090.16
Ser N4E4/ 00075
24 MAR 1994

Water Quality Division
Regulatory & Environmental Services
City of Jacksonville, Suite 412
421 West Church Street
Jacksonville, FL 32202-4111

Subj: DISCHARGE REPORTING FORMS FOR TANKS 460 AND 1587, NAVAL STATION MAYPORT FDEP FACILITY 168626008

Gentlemen:

Two Discharge Reporting Forms are forwarded for recently discovered contamination at Naval Station Mayport (NAVSTA). The first site was discovered during excavation and removal of heating oil tank #460 at old NEX/Commissary, Building 460. The tank had several corroded holes in it and it is not known how much fuel has leaked out of the tank. NAVSTA is performing an Interim Remedial Action to remove approximately 230 square yards of contaminated soil in accordance with FAC 17-770.

The second site was discovered when a contractor, attempting to install cathodic protection on BEQ Building 1587 heating oil tank system, was excavating along the side of tank #1587 and pulled-up contaminated soil. Contract work was stopped and the tank has been taken out of service. Until we can investigate and determine the location and cause of the leak, we are listing these as removal and corrosion, respectively.

Your Mr. John Assidy was at NAVSTA for tank removals on Wednesday, March 16, 1994, and has seen site 460 after the tank removal.

These sites will be added to NAVSTA's Petroleum Contamination Agreement with the State of Florida and we will proceed with a Contamination Assessment and Remedial Action as required.

If you have any further questions on this subject, please contact Cheryl Mitchell, N4E4, at 904-270-6730.

Sincerely,

DOUGLAS P. TOMLINSON
Lieutenant Commander, CEC, U.S. Navy
Staff Civil Engineer
By direction of
the Commanding Officer

Encl:
(1) FDER Form 17-761.900(1), Tank 460
(2) FDER Form 17-761.900(1), Tank 1587

5090.16
Ser N4E4/

Copy to:
FDEP Tallahassee (E. Nuzie/D. Clowes)
CINCLANTFLT (N4423)
SOUTHNAVFACENGCOM (Code 1842)
COMNAVAVNACTS Jacksonville (N3)
PWC Jacksonville (Code 300, 530)
ROICC JAXA NAS Jacksonville

bc: N4E Chron, N4E4, N7 c:\wp51\docs\ST-disch.AQD/pl/3-22

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-761.900(1)
Form Title Discharge Reporting Form
Effective Date December 10, 1990
DER Application No. _____ (Filled in by DER)

Discharge Reporting Form

Use this form to notify the Department of Environmental Regulation of:

1. Results of tank tightness testing that exceed allowable tolerances within ten days of receipt of test result.
2. Petroleum discharges exceeding 25 gallons on pervious surfaces as described in Section 17-761.460 F.A.C. within one working day of discovery.
3. Hazardous substance (CERCLA regulated), discharges exceeding applicable reportable quantities established in 17-761.460(2) F.A.C., within one working day of the discovery.
4. Within one working day of discovery of suspected releases confirmed by: (a) released regulated substances or pollutants discovered in the surrounding area, (b) unusual and unexplained storage system operating conditions, (c) monitoring results from a leak detection method or from a tank closure assessment that indicate a release may have occurred, or (d) manual tank gauging results for tanks of 550 gallons or less, exceeding ten gallons per weekly test or five gallons averaged over four consecutive weekly tests.

Mail to the DER District Office in your area listed on the reverse side of this form

PLEASE PRINT OR TYPE
Complete all applicable blanks

1. DER Facility ID Number: 168626008 2. Tank Number: 460 3. Date: 03/16/94

4. Facility Name: NAVAL STATION MAYPORT

Facility Owner or Operator: DEPARTMENT OF NAVY

Facility Address: NAVAL STATION MAYPORT

Telephone Number: (904) 270-6730 County: DUVAL

Mailing Address: NAVAL STATION MAYPORT, MAYPORT, FL 32228-0067

5. Date of receipt of test results or discovery: 03/16/94 month/day/year

6. Method of initial discovery. (circle one **only**)
A. Liquid detector (automatic or manual)
B. Vapor detector (automatic or manual)
C. Tightness test (underground tanks only).
D. Emptying and Inspection.
E. Inventory control.
F. Vapor or visible signs of a discharge in the vicinity.
G. Closure: REMOVING TANKS (explain)
H. Other: _____

7. Estimated number of gallons discharged: UNKNOWN

8. What part of storage system has leaked? (circle all that apply) A. Dispenser B. Pipe C. Fitting (D. Tank) E. Unknown

9. Type of regulated substance discharged. (circle one)
A. leaded gasoline
B. unleaded gasoline
C. gasohol
D. vehicular diesel
F. aviation gas
G. jet fuel
L. used/waste oil
(M. diesel)
O. new/lube oil
V. hazardous substance includes pesticides, ammonia, chlorine and derivatives (write in name or Chemical Abstract Service CAS number) _____
Z. other (write in name) _____

Cause of leak. (circle all that apply)
A. Unknown
B. Split
C. Loose connection
(D. Corrosion)
E. Puncture
F. Installation failure
G. Spill _____
H. Overfill
I. Other (specify) _____

Type of financial responsibility. (circle one)
A. Third party insurance provided by the state insurance contractor
B. Self-insurance pursuant to Chapter 17-769.500 F.A.C.
(C. Not applicable)
D. None

To the best of my knowledge and belief all information submitted on this form is true, accurate, and complete.

DOUGLAS P. TOMLINSON, LCDR, CEC, US NAVY
Printed Name of Owner, Operator or Authorized Representative

Douglas P. Tomlinson
Signature of Owner, Operator or Authorized Representative

APPENDIX B

SOIL DISPOSAL RECEIPTS

003462

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NO. 003461

11:49 AM MAR 29 1994

TRUCK NO. 97

GROSS WT. 75420 LBS TRANSPORTER Pritchett

TARE WT (M) 23600 LBS GENERATOR Naval Station Mayport

NET WT. 51820 LBS DRIVER

NET WT. 25.91 TON

CUSTOMER NUMBER: [redacted]

JOB NUMBER: 011203

WEIGHMASTER Kevin Rem

Weigher's Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1304

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 | 9 0 4 2 7 0 | 6 7 3 0

Containers

j. Description of Waste: Contaminated Soil (Diesel)

k. Quantity: 22 | Units: Y | No.: 0 1 | TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Signature
Shipment Date: 032994

Section II. TRANSPORTER

TRANSPORTER I

a. Name: Pritchett trucking, Inc.
b. Address: P.O. Box 311
Lake, Bulter, Fl 32054-0311
c. Driver Name/Title: CLAYTON, CARL (PRINT/TYPE)
d. Phone No.: 904-353-6815
e. Truck No.: 97
f. Vehicle License No./State: A92198 FL

Acknowledgement of Receipt of Materials.

g. Driver Signature
Shipment Date: 032999

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature
Shipment Date

Section III. DISPOSAL

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17N
Kingland, GA 31549
d. Mailing Address: Hwy 17N
Kingland, GA 31549

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent
Signature
Receipt Date: 32994

Section IV. OPERATOR

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type)
Operator's* Signature
Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both ___ % friable ___ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003463

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NO. 003463

12:09 PM MAR 29 1994

TRUCK NO. 719
GROSS WT. 73820 LBS TRANSPORTER Patchett Trucking
TARE WT (M) 23500 LBS GENERATOR Naval Station Mayport
NET WT. 50320 LBS DRIVER Lee Bryant
NET WT. 25.16 TON

CUSTOMER NUMBER: [redacted]

JOB NUMBER: 011203

WEIGHMASTER

Weighers Signature Stella Reed

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1305

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR (Complete Section I)

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: M Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

j. Description of Waste: ~~Diesel Contaminated Soil~~

k. Quantity: 22 Units: Y Containers: No. 01 TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, CCP, CEC, CW — Generator Authorized Agent Name
Douglas P. Tomlinson — Signature
Shipment Date: 032994

Section II. TRANSPORTER

TRANSPORTER I	TRANSPORTER II
a. Name: Pritchett trucking, Inc	h. Name:
b. Address: P.O.Box 311	i. Address:
Lake Bulter, Fl 32054-0311	
c. Driver Name/Title: Lee Bryant (PRINT/TYPE)	j. Driver Name/Title: (PRINT/TYPE)
d. Phone No.: 904-353-6415 e. Truck No.: 719	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: A9209W FL	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. Lee Bryant (Driver Signature) 032994 (Shipment Date)	n. (Driver Signature) (Shipment Date)

Section III. DESTINATION

a. Site Name: ~~Kedesh, Inc.~~
b. Physical Address: Hwy 17 N
Kingland, GA 31548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17 N
Kingland, GA 31548

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Buster Jet — Name of Authorized Agent
Signature
Receipt Date: 32994

Section IV. ASBESTOS

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional Information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) Operator's* Signature Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003464

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003463

12:25 PM MAR 29 1994

TRUCK NØ. 711
GRØSS WT. 75300 LBS TRANSPØRTER Pritchett
TARE WT (M) 24000 LBS GENERATØR Naval Station Mayport
NET WT. 51300 LBS DRIVER
NET WT. 25.65 TØN
CUSTØMER NUMBER: 00
JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1309

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 Units: Y No.: 0 1 TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Signature
Shipment Date: 0 3 2 9 9 4

Section II. TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking, Inc.
b. Address: P.O. Box 311
Lake Bulter, Fl 32054-0311
c. Driver Name/Title: William G Brannon (PRINT/TYPE)
d. Phone No.: 904-353-6815
e. Truck No.: 711
f. Vehicle License No./State: AG554V

Acknowledgement of Receipt of Materials.

g. Driver Signature
Shipment Date: 0 3 2 9 9 4

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature
Shipment Date

Section III. DISPOSAL

a. Site Name: Kedesh, Inc.
b. Physical Address: Hwy 17N
Kingland, GA 31548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17N
Kingland, GA 31549

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent
Signature
Receipt Date: 3 2 9 9 4

Section IV. ASBESTOS

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type)
Operator's* Signature
Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003465

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003464

12:31 PM MAR 29 1994

TRUCK NØ. 255
GRØSS WT. 71920 LBS TRANSPØRTER Rutelito Trucks
TARE WT (M) 23600 LBS GENERATØR Naval Station Mayport
NET WT. 48320 LBS DRIVER Grady Jackson
NET WT. 24.16 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1311

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: ~~Naval Station Mayport~~ Mayport, Fl 32228-0067
d. Address: ~~Naval Station Mayport~~ Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

j. Description of Waste: ~~Diesel Contaminated~~

k. Quantity | Units | No. 01 | TYPE T

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, CHR, CEC, USN — Generator Authorized Agent Name
Signature
032994 — Shipment Date

Section II TRANSPORTER(S)

TRANSPORTER I

a. Name: Pritchett Trucking, Inc.
b. Address: P.O. Box 311 Lake Bulter, Fl 32054-0311
c. Driver Name/Title:
d. Phone No.: 904-353-6915 (PRINT/TYPE) e. Truck No.: 255
f. Vehicle License No./State: A 8156W

Acknowledgement of Receipt of Materials.

g. Grady Jackson — Driver Signature
032994 — Shipment Date

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title:
k. Phone No.: (PRINT/TYPE) l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature
Shipment Date

Section III DESTINATION

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17 N Kingland, GA 31549
d. Mailing Address: Hwy 17N Kingland, GA 31548

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Burton — Name of Authorized Agent
Signature
32994 — Receipt Date

Section IV OPERATOR

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: Print/Type — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Shelli Shed

003467

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003466

12:39 PM MAR 29 1994

TRUCK NØ. 767

GRØSS WT. 69420 LBS TRANSPØRTER Mitchell Lindsey

TARE WT (M) 23500 LBS GENERATØR Naval Station Mayport

NET WT. 45920 LBS DRIVER

NET WT. 22.96 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1306

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 Units: Y No.: 01 TYPE: t

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Signature
Shipment Date: 032994

Section II TRANSPORT

TRANSPORTER I

a. Name: Pritchard Trucking
b. Address: P.O. Box 311
Lake Butler, Fl 32054-0311
c. Driver Name/Title: Donald Harris (PRINT/TYPE)
d. Phone No.: 904-353-6815
e. Truck No.: 767
f. Vehicle License No./State: A8189W FL

Acknowledgement of Receipt of Materials.

g. Driver Signature
Shipment Date: 032994

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature
Shipment Date

Section III DISPOSAL

a. Site Name: Kedesh, Inc
b. Physical Address: Hwy 17 North
Kingland, GA 31548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17N
Kingland, GA 31548

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent
Signature
Receipt Date: 329944

Section IV SEPARATION

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type)
Operator's* Signature
Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both ___ % friable ___ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003468

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003467

01:00 PM MAR 29 1994

TRUCK NØ. 215
GRØSS WT. 72840 LBS TRANSPØRTER
TARE WT (M) 20180 LBS GENERATØR
NET WT. 52660 LBS DRIVER

NET WT. 26.33 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1310

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport, Mayport, Fl 32228-0067
d. Address: Naval Station Mayport, Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y | 4 6 0 | 9 0 4 2 7 0 | 6 7 3 0

Containers

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 | Units: Y | No.: 01 | TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Signature
Shipment Date: 032994

TRANSPORTER

TRANSPORTER I	TRANSPORTER II
a. Name: Pritchett Trucking Inc.	h. Name:
b. Address: P.O. Box 311, Lake Butler, Fl 32054-0311	i. Address:
c. Driver Name/Title: ROBERT SEAMAN (PRINT/TYPE)	j. Driver Name/Title: (PRINT/TYPE)
d. Phone No.: 904-353-6815 e. Truck No.: 215	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: A91251N FL	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. Driver Signature: Robert Seaman — Shipment Date: 032994	n. Driver Signature: — Shipment Date:

SITE

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17 N, Kingland, GA 31548
d. Mailing Address: Hwy 17N, Kingland, GA 31548
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent: Bunter [illegible] — Signature — Receipt Date: 329944

SEC

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both ____ % friable ____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Stella L Rodd

003469

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003468

03:11 PM MAR 29 1994

TRUCK NØ. 798
GRØSS WT. 63120 LBS TRANSPØRTER Pritchett Trucking
TARE WT (M) 23400 LBS GENERATØR May Port Naval Station
NET WT. 39720 LBS DRIVER 798
NET WT. 19.86 TØN
CUSTØMER NUMBER: 00
JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1315

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR (Generator Information)

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

j. Description of Waste: Diesel
Contaminated Soil

k. Quantity | Units | Containers No. 0 1 | TYPE T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Douglas P. Tomlinson — Signature
032994 — Shipment Date

TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking Inc.
b. Address: P.O Box 311
Lake Bulter, Fl 32054-0311
c. Driver Name/Title: Dennis Lowery. (PRINT/TYPE)
d. Phone No.: 904-353-6819
e. Truck No.: 799
f. Vehicle License No./State: A 819 3W FL

Acknowledgement of Receipt of Materials.

g. Driver Signature — Shipment Date 032994

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature — Shipment Date

SITE

a. Site Name: Kedesh, Inc.
b. Physical Address: Hwy 17 N ~~34~~
Kingland, GA 31548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17N 31548
Kingland, GA

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date 32994

DESTRUCTION

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD - TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003470

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003469

03:16 PM MAR 29 1994

TRUCK NØ. 725

GRØSS WT. 73160 LBS TRANSPØRTER Butcher Lumber

TARE WT (M) 23500 LBS GENERATØR Port Wood Station

NET WT. 49660 LBS DRIVER

NET WT. 24.83 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1307

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR (Generator completes)

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport, Mayport, Fl 32228-0067
d. Address: Naval Station Mayport, Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 Units: Y Containers No.: 01 TYPE: t

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Douglas P. Tomlinson — Signature
Shipment Date: 032994

TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking, Inc.
b. Address: P.O. Box 311, Lake Butler, Fl 32054-0311
c. Driver Name/Title: Dean Glass owner operator (PRINT/TYPE)
d. Phone No.: 904-358-6815
e. Truck No.: #25
f. Vehicle License No./State: A2862X

Acknowledgement of Receipt of Materials.

g. Dean Glass #25 — Driver Signature — Shipment Date: 032994

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:

Acknowledgement of Receipt of Materials.

n. Driver Signature — Shipment Date

SITE

a. Site Name: Kedesh, Inc.
b. Physical Address: HWY 17 N, Kingland, GA 31549
c. Phone No.: 912-427-9674
d. Mailing Address: HWY 17 N, Kingland, GA 31548
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent: Buster [illegible] — Signature — Receipt Date: 32994

SE

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both ___ % friable ___ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD - TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Stella Fahrd

003471

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003470

03:19 PM MAR 29 1994

TRUCK NØ. 906
GRØSS WT. 63120 LBS TRANSPØRTER Pritchett Trucking
TARE WT (M) 23400 LBS GENERATØR Mg Pat Naval Station
NET WT. 39720 LBS DRIVER
NET WT. 19.86 TØN
CUSTØMER NUMBER: 00
JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1312

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 | Units: Y | No.: 01 | TYPE: T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCDR, CEC, USN — Generator Authorized Agent Name
Signature
Shipment Date: 032994

TRANSPORTER

TRANSPORTER I	TRANSPORTER II
a. Name: Pritchett Trucking, iNc	h. Name:
b. Address: P.O. Box 311	i. Address:
Lake Bulter, Fl 32054-0311	
c. Driver Name/Title: Michael B Gordon (PRINT/TYPE)	j. Driver Name/Title: (PRINT/TYPE)
d. Phone No.: 904-353-6913 e. Truck No.: 806	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: A821LW	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. Driver Signature — Shipment Date: 032994	n. Driver Signature — Shipment Date

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17 N
Kingland, GA ~~32054-0311~~ 31548
d. Mailing Address: Hwy N (17)
Kingland, GA 31548

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date: 32994

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: Print/Type — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD - TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003474

03:23 PM MAR 30 1994

TRUCK NØ. 783

GRØSS WT. 72640 LBS TRANSPØRTER Pritchett Trucking

TARE WT (M) 22520 LBS GENERATØR Mayport Naval Station

NET WT. 50120 LBS DRIVER

NET WT. 25.06 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature Stella Dadd

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003474

03:23 PM MAR 30 1994

TRUCK NØ. 783
GRØSS WT. 72640 LBS TRANSPØRTER Pritchett Trucking
TARE WT (M) 22520 LBS GENERATØR Mayport Naval Station
NET WT. 50120 LBS DRIVER
NET WT. 25.06 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature Stella LaRadd

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1317

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
~~Mayport, Fl 32228-0067~~
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

j. Description of Waste: Diesel Contaminated Soil

k. Quantity | Units | Containers No. 01 | TYPE t

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

CHERYLL MITCHELL — Generator Authorized Agent Name
Signature
03/31/94 — Shipment Date

TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking Inc.
b. Address: P.O. Box 311
Lake Bulter, Fl 32054-0311
c. Driver Name/Title: Anthony Jones (PRINT/TYPE)
d. Phone No.: 904-353-6815 e. Truck No.: 783
f. Vehicle License No./State: A06411X Fla
Acknowledgement of Receipt of Materials.
g. Driver Signature — Shipment Date 3 30 94

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.: l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature — Shipment Date

SITE

a. Site Name: Kedesh, Inc.
b. Physical Address: Hwy 17 N
Kingland, GA [redacted]548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17 N
Kingland, GA 31548

e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date

ASBESTOS

a. Operator's* Name: N/A
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Shelle Dodd

003474

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

ADD'L 460
SOIL REMOVAL

TICKET NO. 003473

03:19 PM MAR 30 1994

TRUCK NO. 804
GROSS WT. 71700 LBS TRANSPORTER Pritchett trucking
TARE WT (M) 23500 LBS GENERATOR Mayport Naval Station
NET WT. 48200 LBS DRIVER
NET WT. 24.10 TON

CUSTOMER NUMBER: 00

JOB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1316

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

Units	No.	TYPE
	0 1	T

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

j. Description of Waste: Diesel Contaminated Soil
k. Quantity

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

CHERYLL MITCHELL — Generator Authorized Agent Name
Signature
03/30/94 — Shipment Date

TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking, inc
b. Address: P.O. Box 311
Lake Bulter, Fl 32054-0311
c. Driver Name/Title: JEFFREY L. STABEL (PRINT/TYPE)
d. Phone No.: 904-353-6815
e. Truck No.: 804
f. Vehicle License No./State: A8194 W Fl
Acknowledgement of Receipt of Materials.
g. Driver Signature — Shipment Date: 03/30/94

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature — Shipment Date

SITE

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17 N
Kingland, GA 31548
d. Mailing Address: Hwy 17 N
Kingland, GA 31548
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date

ASBESTOS

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: Print/Type — Operator's* Signature — Date
f. Name and Address of Responsible Agency:
g. ☐ Friable; ☐ Non-friable; ☐ Both ____ % friable ____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD - TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

003473

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003472

02:51 PM MAR 30 1994

TRUCK NØ. 251
GRØSS WT. 67460 LBS TRANSPØRTER Pritchett Trucking
TARE WT (M) 23500 LBS GENERATØR May Port Naval Sta
NET WT. 43960 LBS DRIVER Augusta Williams
NET WT. 21.98 TØN
CUSTØMER NUMBER: 00
JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature Shelli Ford

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1321

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

GENERATOR

a. Generator Name: Naval Station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 322280067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: M Y 4 6 0 9 0 4 2 7 0 6 7 3 0

Containers

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

j. Description of Waste: diesel Contamianted Soil

k. Quantity | Units | No. 0 1 | TYPE T

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

CHERYLL MITCHELL — Generator Authorized Agent Name
Signature
03/30/94 — Shipment Date

TRANSPORTER

TRANSPORTER I	TRANSPORTER II
a. Name: Pritchett Trucking Inc.	h. Name:
b. Address: P.O. Box 311 Lake Bulter, Fl 32054-0311	i. Address:
c. Driver Name/Title: Augustus Williams (PRINT/TYPE)	j. Driver Name/Title: (PRINT/TYPE)
d. Phone No.: 904-353-6815 e. Truck No.: 251	k. Phone No.: l. Truck No.:
f. Vehicle License No./State: A8153W	m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.	Acknowledgement of Receipt of Materials.
g. Driver Signature — Shipment Date 03 29 94	n. Driver Signature — Shipment Date

SITE

a. Site Name: Kedesh, Inc.
c. Phone No.: 912-427-9674
b. Physical Address: Hwy 17 N
Kingland, GA 31548
d. Mailing Address: N Hwy 17
Kingland, GA 31548
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date

WASTE

a. Operator's* Name: N/A
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

Stella Edwards

003466

Kedesh Soils & Asphalt

901 Highway 17 North
Kingsland, GA 31548
(912) 427-9674

TICKET NØ. 003465

12:35 PM MAR 29 1994

TRUCK NØ. 783
GRØSS WT. 74160 LBS TRANSPØRTER Pritchett trucking
TARE WT (M) 22520 LBS GENERATØR Naval Station Mayport
NET WT. 51640 LBS DRIVER
NET WT. 25.82 TØN

CUSTØMER NUMBER: 00

JØB NUMBER: 011203

WEIGHMASTER

Weighers Signature

V & W CONSTRUCTION & SERVICE CO.
NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

№ 1308

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

Section I. GENERATOR (Generator completes all of Section I)

a. Generator Name: Naval station Mayport
b. Generating Location: Bldg 460 Naval Station Mayport
c. Address: Naval Station Mayport
Mayport, Fl 32228-0067
d. Address: Naval Station Mayport
Mayport, Fl 32228-0067
e. Phone No.: 904-270-6730
f. Phone No.:

If owner of the generating facility differs from the generator, provide:

g. Owner's Name:
h. Owner's Phone No.:

i. V & W WASTE CODE: m y | 4 6 0 | 9 0 4 2 7 0 | 6 7 3 0

Containers

j. Description of Waste: Diesel Contaminated Soil

k. Quantity: 22 | Units: Y | No.: 01 | TYPE: t

TYPE
DM - METAL DRUM
DP - PLASTIC DRUM
B - BAG
BA - 6 MIL. PLASTIC BAG or WRAP
T - TRUCK
O - OTHER

UNITS
P - POUNDS
Y - YARDS
M³ - CUBIC METERS
Y³ - CUBIC YARDS
O - OTHER

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Douglas P. Tomlinson, LCR, CEC, VCS — Generator Authorized Agent Name
Douglas P. Tomlinson — Signature
03 29 94 — Shipment Date

Section II. TRANSPORTER

TRANSPORTER I

a. Name: Pritchett Trucking, Inc.
b. Address: P.O Box 311
Lake Bulter, Fl 32054-0311
c. Driver Name/Title: Anthony Jones (PRINT/TYPE)
d. Phone No.: 904-353-6915
e. Truck No.: 783
f. Vehicle License No./State: AQ641X FL
Acknowledgement of Receipt of Materials.
g. Driver Signature — Shipment Date: 03 29 94

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. Driver Signature — Shipment Date

Section III.

a. Site Name: Kedesh, Inc.
b. Physical Address: Hwy 17 N
Kingland, GA 31548
c. Phone No.: 912-427-9674
d. Mailing Address: Hwy 17 N
Kingland, GA 31548
e. Discrepancy Indication Space:

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

f. Name of Authorized Agent — Signature — Receipt Date: 3 29 94

Section IV. ASBESTOS

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

e. Operator's* Name & Title: (Print/Type) — Operator's* Signature — Date

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both ____ % friable ____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both

2/91 **WHITE - DESTINATION RETAIN; CANARY - RETURN TO GENERATOR; PINK - RETURN TO OPERATOR; GOLD -TRANSPORTER RETAIN; GREEN - GENERATOR RETAIN**

APPENDIX C

CLOSURE ASSESSMENT REPORT

5090.16
Ser N4E4/ 00139

30 JUN 1994

Storage Tank Regulation Section
Northeast District
Florida Department of Environmental Protection
7825 Baymeadows Way, Suite B200
Jacksonville, FL 32256-7577

Subj: STORAGE TANK CLOSURE FORMS FOR TEN TANKS AT NAVAL STATION MAYPORT, FACILITY ID 168626008

Gentlemen:

In accordance with FAC 17-761, Naval Station Mayport (NAVSTA) is submitting Closure Assessment Forms (CAF) for tanks #G-147, G-253A, 450, 9-A, 9-B, 13-A, 1391-A, 38, 338N, 338S (10 tanks - three regulated, seven non-regulated) removed from NAVSTA in May 1994. Also provided are FDEP Inspection Forms for these tanks completed by the City of Jacksonville. A written notification of the tank removal work was submitted in March 1994 by the contractor, V & W Construction, Moss Point, Mississippi, to the City of Jacksonville Water Quality Division prior to initiation of work. The last update of the Tank Management Inventory System (TIMS), submitted by NAVSTA to FDEP Tallahassee in November 1993 as part of the Navy's Alternate Procedures Agreement, stated that the tanks were to be removed in June 1994.

The enclosed CAFs are incomplete because analytical data on the groundwater has not been obtained by the contractor. In order to meet the submittal timeframe requirements of 17-761, NAVSTA is submitting the partial reports now and will submit updated forms upon receipt of the analytical data from the contractor.

Included in this submittal package is a CAF for two non-regulated tanks (338N & 338S) removed during this contract. Although the tank removal was performed by V & W Construction, the site was already under assessment by the Corps of Engineers, Savannah District (COE). Therefore, NAVSTA is submitting the CAF for this site without the tank removal contractor's signature because they are not performing the assessment. The information required on the CAF has already been presented in the CAR and CAR Addendum 1 submitted to FDEP Tallahassee in July 1992 and July 1993, respectively. In order to complete the CAR on this site, additional analytical data will be required now that the tank has been removed - the same data required on the CAF.

5090.16
Ser N4E4/ 00139
30 JUN 1994

The COE is waiting on the current installation of a new tank at this site to be completed before obtaining this data. NAVSTA will submit the required data in the CAR Addendum 2 to FDEP Tallahassee. If your office needs a copy of this data or the CAR in order to close-out these tanks, please contact NAVSTA.

If you have any questions, please contact Cheryl Mitchell, N4E4, NAVSTA, at 904-270-6730.

Sincerely,

DOUGLAS P. TOMLINSON
Commander, CEC, U.S. Navy
Staff Civil Engineer
By direction of
the Commanding Officer

Encl:
(1) DEP Forms 17-761.900(6) (CAF)
(2) DEP Inspection Report Forms

Copies to: (w/o encls)
FDEP Tallahassee (Waste Mgt Div/E. Nuzie)
City of Jacksonville WQD (J. Assidy)
ROICC JAXA NAS Jacksonville (LT Hurst) (w/encls)
PWC Jacksonville (Code 300)
SOUTHNAVFACENGCOM (Code 1842)
COMNAVBASE Jacksonville (N3)
COE Savannah District (C. Smith)

V & W Construction
5710 2nd Street
Moss Point, MS 39563

bc: N4E Chron, N4E4 c:\-St-tank\Ten-clos.DEP/pl/6-30

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
POLLUTANT STORAGE TANK SYSTEM
INSPECTION REPORT FORM - COVER PAGE

PRINTED: 03/16/94

..ITY ID #: 168626008 COUNTY: DUVAL
ILITY NAME: US NAVY-MAYPORT NAVAL STATION
ILITY LOCATION: MAYPORT NAVAL STATION, MAYPORT
ILITY CONTACT: CHERYL MITCHELL PHONE: (904) 270-6730
ER: US NAVY PHONE: (904) 246-5268
ER ADDRESS: MAYPORT NAVAL STATION, JACKSONVILLE, FL, 32228-5000
ER CONTACT: JOSE R. NEGRON OWNER CHANGE DATE: 06/24/86
ITUDE:30-23-21 LONGITUDE:81-24-41 FAC TYPE: FEDERAL GOVERNMENT
T UST COMPLIANCE DATE:09/08/93 LAST AST COMPLIANCE DATE:09/08/93
TAMINATION DATA AVAILABLE: OTHER

NK #	SIZE	CONTENT	INSTALL DATE	UNDER OR ABOVE	TANK TYPE	INTEGRAL PIPING	MONITORING SYSTEM	TANK STAT
	1000	D	XX/69	U	C	B	Y	U
	3000	A	XX/69	U	C	Y	Y	U
	210000	L	XX/54	U	BC	B	BD	U
	210000	L	XX/54	U	BC	B	BD	U
41-A	5000	L	XX/70	U	C	B	D	U
41-B	35000	N	XX/70	U	C	B	D	U
41-C	35000	N	XX/70	U	C	B	D	U
41-D	35000	N	XX/70	U	C	B	D	U
	210000	L	XX/54	U	BC	B	BD	U
23	10000	A	XX/74	U	C	B	Y	F
30	40000	O	XX/69	U	C	B	D	U
	40000	O	XX/69	U	C	B	D	U
	15000	M	XX/81	U	C	B	D	U
343	10000	M	XX/81	U	C	B	D	U
363	7500	M	XX/74	U	C	B	D	U
391	5000	M	XX/80	U	C	B	I	U
393	10000	M	XX/80	U	C	B	D	U
397	2000	M	XX/80	U	C	B	I	U
4	598000	E	XX/60	U	BC	B	D	U
430-A	6000	M	XX/80	U	C	B	D	U
430-B	6000	M	XX/80	U	C	B	D	U
461	4000	L	XX/79	U	C	B	I	U
488	20133	M	XX/81	U	C	B	I	U
490-A	1000	L	XX/81	U	C	B	I	U
490-B	1000	L	XX/81	U	C	B	I	U
15	598000	E	XX/60	U	BC	B	D	U
16	1555000	D	XX/60	U	C	B	D	U

MORE TANKS LISTED NEXT PAGE

INSPECTION TYPE (CHOOSE ONE)
__ ROUTINE
__ INSTALL
__ ABANDONED
__ DISCHARGE
✓ CLOSURE
__ REINSPECT

SITE INFORMATION (ALL THAT APPLY)
__ NEAR PUB WELL
__ CONTAMINATED
__ COMPLAINT
__ ACID TANKS
__ REPAIRED
__ UPGRADED
__ UST & AST
__ HAZARD MAT

DER DISTRICT OR LOCAL PROGRAM: Duval County

ISPECTOR NAME (PRINT) J. Assidy
3-24-94
INSPECTOR'S SIGNATURE & DATE

CONTACT NAME (PRINT) CHERYL MITCHELL
3/24/94
CONTACT'S SIGNATURE & DATE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
POLLUTANT STORAGE TANK SYSTEM
INSPECTION REPORT FORM - COVER PAGE

PRINTED: 03/24/94

LITY ID #: 168626008 COUNTY: DUVAL
LITY NAME: US NAVY-MAYPORT NAVAL STATION
LITY LOCATION: MAYPORT NAVAL STATION, MAYPORT
(LITY CONTACT: CHERYL MITCHELL PHONE: (904) 270-6730

OMMENTS: TANKS # 460 & 460 G
TANKS & PIPING REMOVED FROM SITE.
CONTAMINATED SOIL. READINGS IN EXCESS OF 50ppm
OR DIESEL. TANK #460 WAS FOR ON SITE HEATING. TANK #460G
WAS FOR EMERGENCY GENERATOR.

Name: [illegible]
Facility I.D.#: 16[illegible]
Date: 3-24-91

UNDERGROUND STORAGE TANK CLOSURE INSPECTION FORM

		Yes	No	Unk	N/A
REGISTRATION AND NOTIFICATION 17-761.400 & 450 FAC: Comments:					
1. All of the facility's tanks properly registered; 400 TANK LISTED ON TIMS	1.	✓			✓
2. Proper notification made 30 days prior to tank(s) closure; .450 (1) (a)	2.	✓			
3. Proper notice given 24 hours prior to storage tank(s) closure; .450 (4)	3.	✓			
CLOSURE PROCEDURES/STATUS: 17.761.800 Comments:					
4. Certified contractor performed the tank removal(s); .740 (2)	4.	✓			
5. Storage tank(s) properly closed and removed from the site; (2) (d)	5.	✓			
6. Storage tank(s) properly closed and filled in place; (2) (d)	6.				✓
7. Storage tank(s) properly closed within 90 days of discovery; (2) (a)	7.				✓
8. All liquid & sludge removed from the tank(s); (2) (d)	8.	✓			
9. Storage tanks properly purged or inerted prior to transport; (2) (d)	9.	✓			
10. All piping capped and/or removed;	10.	✓			
11. All monitoring wells left in place for contamination assessment purposes; (2) (f)	11.				✓
12. All monitoring wells have been properly abandoned; .800 (2) (f)	12.				✓
13. A closure assessment was properly performed; .800 (3),	13.			✓	
DISCHARGE REPORTING 17-761.460, F.A.C.: Comments:					
14. Evidence of contamination or a discharge reported (Explain in comments) 460 (1), (2) and (3)	14.	✓	✓		
15 Discharge Reporting Form (DRF) submitted; 460 (2)	15.	✓			
DISCHARGE RESPONSE Comments:					
16. Free product present; (Explain in comments)	16.	✓	✓		
17 Free product being removed; 17-761.800 (3) (d) & 17-761.820 (2)	17.	✓			

Comments: FREE PRODUCT WAS REMOVED WITH SOIL & STOCKPILED ON SITE UNDER PLASTIC. ANALYSIS TO BE PERFORMED & SUBMITTED WITH CLOSURE REPORT.

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DER Form # 17-761 SOF(5)
Form Title Closure Assessment Form
Effective Date December 10, 1990
DER Application No _____ (Filled in by DER)

Closure Assessment Form

Owners of storage tank systems that are replacing, removing or closing in place storage tanks shall use this form to demonstrate that a storage system closure assesment was performed in accordance with Rule 17-761 or 17-762, Florida Administrative Code. Eligible Early Detection Incentive (EDI) and Reimbursement Program sites do not have to perform a closure assessment.

Please Print or Type
Complete All Applicable Blanks

1. Date: 5-2-94
2. DER Facility ID Number: 168626008 3. County DUVAL
4. Facility Name: NAVAL STATION MAYPORT
5. Facility Owner: DEPARTMENT OF NAVY
6. Facility Address: NAVAL STATION MAYPORT, MAYPORT, FL 32228-0067
7. Mailing Address: --SAME--
8. Telephone Number: (904) 270-6730 9. Facility Operator U. S. GOVERNMENT
10. Are the Storage Tank(s): **(Circle one or both)** A. Aboveground or (B.) Underground
11. Type of Product(s) Stored: #460 - HEATING OIL, DIESEL & #6-460 - DIESEL FOR GENERATOR
12. Were the Tank(s): **(Circle one)** A. Replaced (B.) Removed C. Closed in Place D. Upgraded (aboveground tanks only)
13. Number of Tanks Closed: 2 TANKS: #460, #6-460 14. Age of Tanks: 24 YEARS

Facility Assessment Information

Yes	No	Not Applicable	
☐	☒		1. Is the facility participating in the Florida Petroleum Liability Insurance and Restoration Program (FPLIRP)?
☒	☐		2. Was a Discharge Reporting Form submitted to the Department? If yes, When: 24 MARCH 1994 Where: CITY OF JACKSONVILLE WATER QUALITY
☒	☐		3. Is the depth to ground water less than 20 feet?
☐	☒	☐	4. Are monitoring wells present around the storage system? If yes, specify type: ☐ Water monitoring ☐ Vapor monitoring
☒	☐	☒	5. Is there free product present in the monitoring wells or within the excavation?
☐	☐	☒	6. Were the petroleum hydrocarbon vapor levels in the soils greater than 500 parts per million for gasoline? Specify sample type: ☐ Vapor Monitoring wells ☐ Soil sample(s)
☒	☐	☐	7. Were the petroleum hydrocarbon vapor levels in the soils greater than 50 parts per million for diesel/kerosene? Specify sample type: ☐ Vapor Monitoring wells ☒ Soil sample(s)
☐	☐	☒	8. Were the analytical laboratory results of the ground water sample(s) greater than the allowable state target levels? (See target levels on reverse side of this form and supply laboratory data sheets)
☐	☐	☒	9. If a used oil storage system, did a visual inspection detect any discolored soil indicating a release?
☐	☒		10. Are any potable wells located within ¼ of a mile radius of the facility?
☐	☒		11. Is there a surface water body within ¼ mile radius of the site? If yes, indicate distance: _____

Northwest District 160 Governmental Center Pensacola, Florida 32501-5794 904-436-8300
Northeast District 7825 Baymeadows Way, Suite B 200 Jacksonville, Florida 32207 904-796-4200
Central District 3319 Maguire Blvd. Suite 232 Orlando, Florida 32803-3767 407-894-7555
Southwest District 4520 Oak Fair Blvd. Tampa, Florida 33610-7347 813-623-5561
South District 2295 Bay St Fort Myers, Florida 33901 2896 813-332-6975
Southeast District 1900 S. Congress Ave. Suite A West Palm Beach, Florida 33406 407-433-2650

DER Form # 17-761.900(6)
Form Title Closure Assessment Form
Effective Date December 10, 1990
DER Application No _____ (Filled in by DER)

12. A detailed drawing or sketch of the facility that includes the storage system location, monitoring wells, buildings, storm drains, sample locations, and dispenser locations must accompany this form.
13. If a facility has a pollutant storage tank system that has both gasoline and kerosene/diesel stored on site, both EPA Method 602 and EPA Method 610 must be performed on the ground water samples obtained.
14. Amount of soils removed and receipt of proper disposal.
15. If yes is answered to any one of questions 5-9, a Discharge Reporting Form 17-761.900(1) indicating a suspected release shall be submitted to the Department within one working day.
16. A copy of this form and any attachments must be submitted to the Department's district office in your area and to the locally administered program office under contract with the Department within 60 days of completion of tank removal or filling a tank with an inert material.

D P Tomlinson

D.P. TOMLINSON, LCDR, CEC, U.S. NAVY STAFF CIVIL ENGINEER — 6/30/94
Signature of Owner — Date

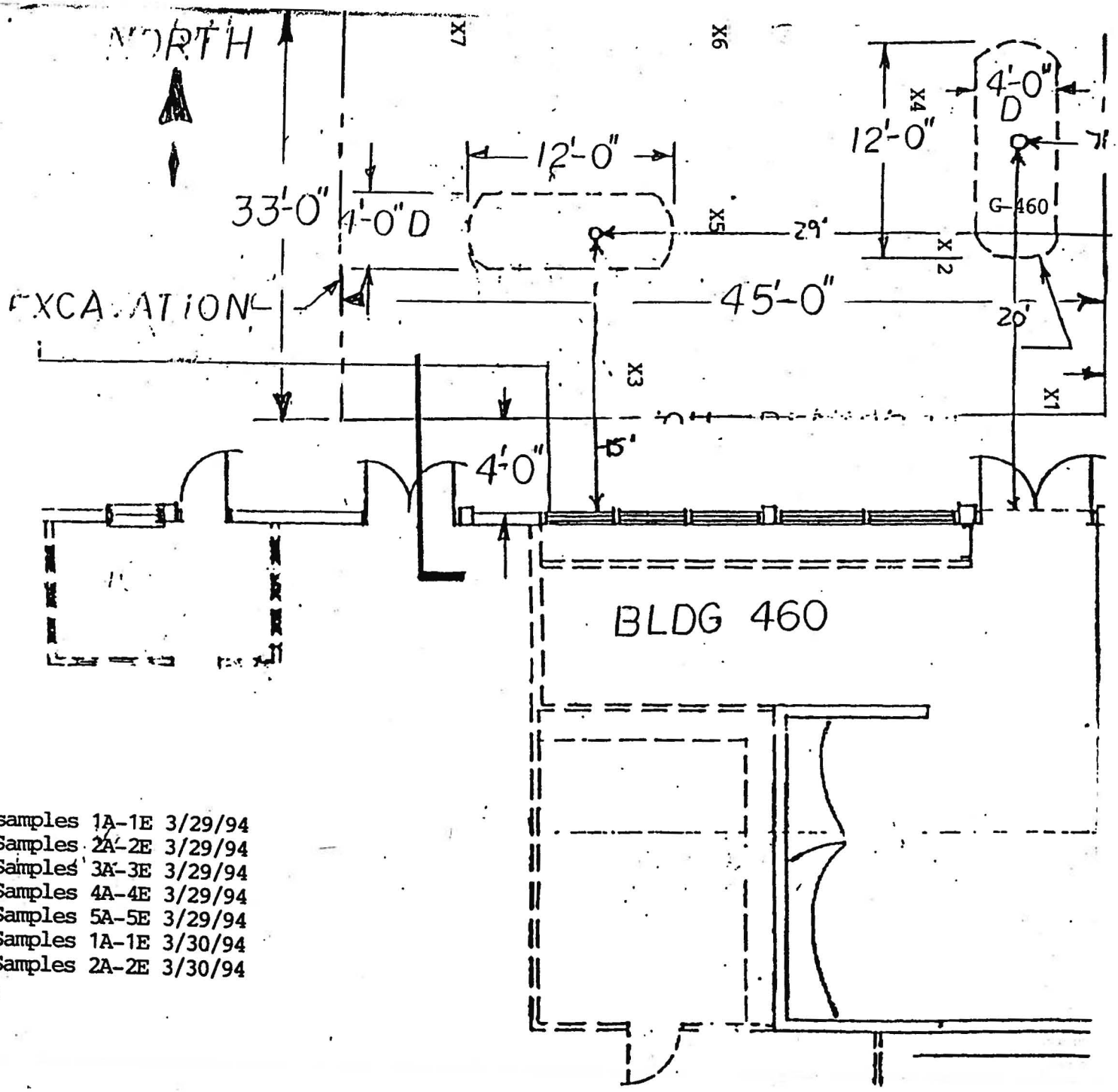
Venia Walters — 5-2-94
Signature of Person Performing Assessment — Date

Quality Control Manager
Title of Person Performing Assessment

State Ground Water Target Levels That Affect A Pollutant Storage Tank System Closure Assessment

State ground water target levels are as follows:

1. For gasoline (EPA Method 602):
   a. Benzene — 1 ug/l
   b. Total VOA — 50 ug/l
      - Benzene
      - Toluene
      - Total Xylenes
      - Ethylbenzene
   c. Methyl Test-Butyl Ether (MTBE) — 50 ug/l
2. For kerosene/diesel (EPA Method 610):
   a. Polynuclear Aromatic Hydrocarbons (PAHS) (Best achievable detection limit, 10 ug/l maximum)



X1 samples 1A-1E 3/29/94
X2 Samples 2A-2E 3/29/94
X3 Samples 3A-3E 3/29/94
X4 Samples 4A-4E 3/29/94
X5 Samples 5A-5E 3/29/94
X6 Samples 1A-1E 3/30/94
X7 Samples 2A-2E 3/30/94

SCALE: 1/8" = 1'-0"
UNLESS NOTEL

I E PLAN BLDG 460
N /STA MAYPORT
C OSURE DIAGRAM
SHT 1 OF

XI

Our Quality Control Is Your Quality Assurance

APR. 16

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Ethyl benzene	0.6	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total BTEX	0.6	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/01/94	RL
TRPH	6010	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10893-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10893-1

X2

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 2-A to 2-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Ethyl benzene	3.2	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Total BTEX	3.2	mg/kg	5030/8021	0.125	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/01/94	RL
TRPH	6490	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10893-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 2-A to 2-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10893-2

X3

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-3

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 3-A to 3-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
TRPH	510	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
EPA 602 Compounds	.	mg/kg	5030/8021		03/31/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	03/31/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	03/31/94	04/01/94	RL

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10893-3

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 3-A to 3-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10893-3

X4

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-4

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 4-A to 4-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/01/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
luene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Ethyl benzene	0.4	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Total BTEX	0.4	mg/kg	5030/8021	0.05	04/01/94	04/01/94	RL
Dilution Factor	1	mg/kg	5030/3021	.	04/01/94	04/01/94	RL
TRPH	4110	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10893-4

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 4-A to 4-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10893-4

X5

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10893-5

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 5-A to 5-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/02/94	RL
Benzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Chlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Toluene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Ethyl benzene	2.0	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
MTBE	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Total BTEX	2.0	mg/kg	5030/8021	0.125	04/01/94	04/02/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/02/94	RL
TRPH	2800	mg/kg	9073	3.0	04/02/94	04/02/94	PB
TCLP Extraction	DONE		1311		03/31/94	04/01/94	DS
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Lead	BLD	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS
TCLP Mercury	BDL	mg/l	1311/7471	0.001	03/31/94	04/01/94	DS
TCLP Silver	BDL	mg/l	1311/6010A	0.1	03/31/94	04/01/94	DS
TCLP Barium	BDL	mg/l	1311/6010A	0.10	03/31/94	04/01/94	DS

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10893-5

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Building 460
Soil Analysis

Label: 5-A to 5-E
Date Sampled: 03/29/94
Date Received: 03/29/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10893-5

X6

Our Quality Control Is Your Quality Assurance

APR. 16

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10924-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis

Label: 1-A to 1-E
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

Bldg 460

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/05/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
lorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
oluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/05/94	RL
TRPH	4000	mg/kg	9073	3.0	04/05/94	04/05/94	PB
TCLP Extraction	DONE		1311		04/02/94	04/03/94	EG
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Lead	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Mercury	BDL	mg/l	1311/7471	0.001	04/02/94	04/04/94	EG
TCLP Silver	BDL	mg/l	1311/6010A	0.1	04/02/94	04/04/94	EG
TCLP Barium	4.84	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10924-1

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg. 460

Label: 1-A to 1-E
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10924-1

X7

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 1
Date: 04/07/94
Log #: 10924-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg 460

Label: 2-A to 2-B
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

Parameter	Results	Units	Method	Detection Limit	Extr. Date	Analysis Date	Analys
EPA 602 Compounds	.	mg/kg	5030/8021		04/01/94	04/05/94	RL
Benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
orobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Toluene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Ethyl benzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total xylenes	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
MTBE	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,2-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,3-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
1,4-Dichlorobenzene	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Total BTEX	BDL	mg/kg	5030/8021	0.05	04/01/94	04/05/94	RL
Dilution Factor	1	mg/kg	5030/8021	.	04/01/94	04/05/94	RL
TRPH	102	mg/kg	9073	3.0	04/05/94	04/05/94	PB
TCLP Extraction	DONE		1311		04/02/94	04/03/94	EG
TCLP Cadmium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Lead	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Selenium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Arsenic	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Chromium	BDL	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG
TCLP Mercury	BDL	mg/l	1311/7471	0.001	04/02/94	04/04/94	EG
TCLP Silver	BDL	mg/l	1311/6010A	0.1	04/02/94	04/04/94	EG
TCLP Barium	3.75	mg/l	1311/6010A	0.10	04/02/94	04/04/94	EG

Client #: 624J
Address: V & W CONSTRUCTION & SVC CO.
5710 2nd Street
Moss Point, MS 39563
ATTN: Venisa Watkins

Page: 2
Date: 04/07/94
Log #: 10924-2

Sample Description V & W CONSTRUCTION & SVC CO.
92-C-0739
Naval Station Mayport
Soil Analysis
Bldg. 460

Label: 2-A to 2-B
Date Sampled: 03/30/94
Date Received: 03/31/94
Collected By: CLIENT

BDL = Below Detection Limits

* These compounds are Screened Only, with an estimated detection limit.

All Analyses were performed using EPA, ASTM, USGS, or Standard Methods

Respectfully Submitted,

Marc Rippen
Laboratory Director

QAP # 90-376G
HRS # E86240, 86356
SUB HRS# 86122, 86109, E86048
ADEM ID# 40720
SC CERT #96031

10924-2

APPENDIX D

PRELIMINARY GROUNDWATER ANALYTICAL DATA

Quanterra Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

PROJECT NO. 0856703

MAYPORT BLDG 460

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

QUANTERRA INCORPORATED
Certification Numbers: E84059,HRS84297
FDEP CompQAP: 870270G

for
Joanne Anderson
Project Manager

MAY 23, 1995

Quanterra
Environmental Services

EXECUTIVE SUMMARY - Detection Highlights

B5E180122

PARAMETER	RESULT	REPORTING LIMIT	UNIT	METHOD
P4				
Methyl tert-butyl ether	7.6	1.0	ug/L	CFR136A 602

Quanterra
Environmental Services

ANALYTICAL METHODS SUMMARY

Parameters	Methods
Purgeable Aromatics	CFR136A 602

References:

CFR136A "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Quanterra
Environmental Services

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

WO #	LABORATORY ID	SAMPLE IDENTIFICATION
C007C	B5E180122-001	P1
C007D	B5E180122-002	P2
C007E	B5E180122-003	P3
C007G	B5E180122-004	P4
C007H	B5E180122-005	P5

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

P1

WO #: C007C101
LAB #: B5E180122-001
MATRIX: WATER

DATE SAMPLED: 5/15/95
DATE RECEIVED: 5/18/95

- GC Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Methyl tert-butyl ether	ND	1.0	CFR136A 602	05/19/95	5139010
Benzene	ND	1.0	CFR136A 602	05/19/95	5139010
Ethylbenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Toluene	ND	1.0	CFR136A 602	05/19/95	5139010
Chlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Xylenes (total)	ND	1.0	CFR136A 602	05/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	107	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

P2

WO #: C007D101
LAB #: B5E180122-002
MATRIX: WATER

DATE SAMPLED: 5/15/95
DATE RECEIVED: 5/18/95

- GC Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Methyl tert-butyl ether	ND	1.0	CFR136A 602	05/19/95	5139010
Benzene	ND	1.0	CFR136A 602	05/19/95	5139010
Ethylbenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Toluene	ND	1.0	CFR136A 602	05/19/95	5139010
Chlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Xylenes (total)	ND	1.0	CFR136A 602	05/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	105	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

P3

WO #: C007E101
LAB #: B5E180122-003
MATRIX: WATER

DATE SAMPLED: 5/15/95
DATE RECEIVED: 5/18/95

- GC Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Methyl tert-butyl ether	ND	1.0	CFR136A 602	05/19/95	5139010
Benzene	ND	1.0	CFR136A 602	05/19/95	5139010
Ethylbenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Toluene	ND	1.0	CFR136A 602	05/19/95	5139010
Chlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Xylenes (total)	ND	1.0	CFR136A 602	05/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	104	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

P4

WO #: C007G101
LAB #: B5E180122-004
MATRIX: WATER

DATE SAMPLED: 5/15/95
DATE RECEIVED: 5/18/95

- GC Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Methyl tert-butyl ether	7.6	1.0	CFR136A 602	05/19/95	5139010
Benzene	ND	1.0	CFR136A 602	05/19/95	5139010
Ethylbenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Toluene	ND	1.0	CFR136A 602	05/19/95	5139010
Chlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Xylenes (total)	ND	1.0	CFR136A 602	05/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	106	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

ABB ENVIRONMENTAL SERVICES

P5

WO #: C007H101
LAB #: B5E180122-005
MATRIX: WATER

DATE SAMPLED: 5/17/95
DATE RECEIVED: 5/18/95

- GC Volatiles -

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION-ANALYSIS DATE	QC BATCH
Methyl tert-butyl ether	ND	1.0	CFR136A 602	05/19/95	5139010
Benzene	ND	1.0	CFR136A 602	05/19/95	5139010
Ethylbenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Toluene	ND	1.0	CFR136A 602	05/19/95	5139010
Chlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	CFR136A 602	05/19/95	5139010
Xylenes (total)	ND	1.0	CFR136A 602	05/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	104	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

Quality Control Summary

Quanterra QC Program Summary

Method Blanks

Laboratory Control Samples

Matrix Spike/Matrix Spike Duplicates

Chain-of-Custody

Quanterra
Environmental Services

Quanterra Quality Control Program Summary

Quanterra Environmental Services considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with analytical results. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow. Further documentation of specific policies and procedures in use are available, upon request, from the Quanterra Quality Control Department.

The program described below provides Quanterra's interpretation of QC requirements described in SW-846, 3rd edition -Final Update II. Additional interpretations specific to other aspects of methods performed, such as instrument calibration and bench procedures, are described in program-specific documents (e.g. US Corps of Engineers, AFCEE, etc.) and associated method standard operating procedures. Where explicit program requirements or project requirements exist, certain elements of the Quanterra QC Program may be superseded by these requirements.

Elements of the Quanterra QC Program

Where other clear regulatory guidance, contract specifications, or client requirements are not available, the Quanterra QC Program provides guidance for Batch QC requirements. The Quality Control Batch is a set of up to 20 field samples of similar matrix, which are processed together under the same conditions, within the same time frame. Included in each Quality Control Batch is a Method Blank, Laboratory Control Sample, and Matrix Spike Duplicate. For methods that require independent sample preparation prior to analysis, the QC Batch is defined at the preparation stage. For methods that do not require independent sample preparation, the QC Batch is defined at the instrument. The QC Batch Number is provided on each result page in association with the parameter(s) presented, and may be used to cross-reference sample results with the associated QC data.

Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interference and background contamination levels associated with each applicable analytical method. Method blanks include all aspects of actual laboratory procedures involving sample preparation and analysis, substituting analyte-free water or solid for the actual sample. Under normal circumstances, the Method Blank should not exhibit analytes of interest above the reported detection limit. Due to the presence of some analytes in a typical laboratory setting, the following common laboratory contaminants are exceptions to this rule, provided they are not present in the method blank at greater than five times the reporting limit.

Volatiles	Semi-Volatiles	Metals
Methylene chloride	Dimethyl phthalate	Calcium
Toluene	Diethyl phthalate	Magnesium
2-Butanone	Di-n-butyl-phthalate	Sodium
Acetone	Butyl benzyl phthalate	
	Bis (2-ethylhexyl) phthalate	

A method blank is performed with each analytical batch. A minimum of 5% of all laboratory analyses are method blanks.

Laboratory Control Sample (LCS) Evaluations

Known concentrations of designated matrix spike (target analyte) compounds are added to a method blank prior to extraction and analysis. Percent recovery determinations of individual target analytes in the LCS demonstrate the laboratory's method performance for the QC Batch relative to these target analytes (or other individual components represented by a subset of control analytes). Percent recovery data is displayed alongside acceptance criteria, that is typically derived from laboratory historical data. Failure of a Laboratory Control Sample to meet established recovery criteria for control analytes is cause for corrective actions to occur, which typically includes re-extraction and re-analysis of all samples associated with the QC Batch. An LCS is performed with each analytical batch. A minimum of 5% of all laboratory analyses are laboratory control samples.

Quanterra Quality Control Program Summary (continued)

Surrogate Spike Recovery Evaluations

For GC and GC/MS analyses, known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added to sample fractions prior to sample extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is one indication of the overall method efficiency for the individual sample. The surrogate spike recovery data is displayed alongside acceptance limits at the bottom of each applicable analytical result report page. Where sufficient laboratory-generated data does not yet exist to determine appropriate control limits, advisory limits may be enacted until sufficient data is collected to allow implementation of control limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Evaluations

In conjunction with the analysis of a client-provided field sample, a known concentration of designated matrix spike compounds (target analytes) are added to two aliquots of the actual sample. Percent recovery determinations are calculated from both spiked aliquots, using target analyte concentrations already present in the actual sample as a baseline. The percent recovery determinations indicate the accuracy of the method specific to the target analytes (or other individual components represented by a subset of control analytes) in the individual sample matrix. Comparison of the percent recoveries in the two spiked aliquots yields a relative percent difference (RPD). Percent recovery and relative percent difference data is displayed alongside historical criteria, that may be used to judge individual sample matrix effects for specific analytes. MS/MSD data is evaluated by the laboratory with respect to the individual sample matrix. In cases where MS/MSD data indicate sample method performance outside of historical criteria, the laboratory control sample results are referenced to ensure acceptable method performance by the laboratory for the sample batch. For analyses which are inappropriately suited for matrix spikes (e.g. pH), non-spiked duplicate analyses are performed to generate precision data. Matrix spike duplicates are typically performed on at least one sample within each analytical batch. A minimum of 10% of all laboratory analyses are matrix spikes or duplicates.

Corrective Action Evaluations

The goal of the Quanterra Quality Control Program is to generate data that demonstrates process control, and allows for client usability of data. Where the analytical process is demonstrated to vary from established criteria, or client requirements have not been met, data evaluation resulting in corrective action may be required. Corrective action may include re-preparation and/or reanalysis of field samples and QC samples. Where appropriate or necessary to allow proper interpretation of results presented in the final report, details of corrective actions taken during the laboratory processing of samples are presented as a case narrative at the front of the report. Alternatively, routine corrective action, such as reanalysis, may be footnoted on individual sample result pages.

Analytical Result Qualifier Flags

Where applicable , data qualifiers may be appended to analytical results in order to allow for proper interpretation of the result presented. Typically, the presence of data qualifier flag on an analytical result page is accompanied by a footnote explaining the qualifier. Common data qualifiers include, but are no limited to the following:

J -indicates an estimated concentration is reported due to method limitations such as matrix interference or instrumental detection limitations.

B -indicates the presence of a particular analyte in the associated laboratory method blank.

DIL -indicates percent recovery determination was not possible due to dilution associated with the sample matrix conditions or high target analyte concentrations.

X -indicates internal standards used for a GC or GC/MS analysis did not meet established criteria, typically due to a sample matrix effect.

E -indicates an estimated concentration is reported due to analyte response beyond the established instrumental calibration range, typically due to presence of a wide range of target analyte concentrations.

Quanterra
Environmental Services

METHOD BLANK REPORT

LAB #: B5E190000-010

GC VOLATILES

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	EXTRACTION-ANALYSIS DATE	QC BATCH
Benzene	ND	1.0	5/19/95	5139010
Chlorobenzene	ND	1.0	5/19/95	5139010
1,2-Dichlorobenzene	ND	1.0	5/19/95	5139010
1,3-Dichlorobenzene	ND	1.0	5/19/95	5139010
1,4-Dichlorobenzene	ND	1.0	5/19/95	5139010
Ethylbenzene	ND	1.0	5/19/95	5139010
Toluene	ND	1.0	5/19/95	5139010
Xylenes (total)	ND	1.0	5/19/95	5139010
Methyl tert-butyl ether	ND	1.0	5/19/95	5139010

SURROGATE RECOVERY	%	ACCEPTABLE LIMITS
Trifluorotoluene	106	(73 - 131)

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT

Quanterra
Environmental Services

LCS - DCS REPORT

QC BATCH: 5139010
LAB #: B5E190000-010 C

WO #:
PREPARATION DATE: 5/18/95
DATE ANALYZED: 5/18/95

GC Volatiles

COMPOUND	LCS PERCENT RECOVERY	DCS PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS
Benzene	97	124	(39-150)	24	25
Toluene	98	126	(46-148)	25	25
Chlorobenzene	104	121	(55-135)	15	25

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Environmental Services, Tampa
Sample Shipper Evaluation and Receipt Form

Client: ABB Project Name/Number: Mayport

Samples Received by: Carol McNulty Date Received: 5/18/95
Signature

Sample Evaluation Form by: Carol McNulty
Signature

Type of shipping containers samples received in:

Quanterra cooler: X Client cooler: _____

Quanterra shipper _____ Box _____ Other _____

Any "NO" responses or discrepancies should be explained in the "Comments" section.

		Yes	No
1)	Were custody seals on shipping container(s) intact?		X
2)	Were custody papers properly included with samples?	X	
3)	Were custody papers properly filled out (ink, signed, match labels)?	X	
4)	Did all bottles arrive in good condition (unbroken)?	X	
5)	Were all bottle labels complete (sample no., date, signed, analysis preservatives)?	X	
6)	Were correct bottles used for the tests indicated?	X	
7)	Were proper sample preservativion techniques indicated?	X	
8)	Were samples received within adequate holding times?	X	
9)	Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found, indicate in comment section)	X	
10)	Were samples in direct contact with wet ice? NOTE TEMPERATURE BELOW	X	
11)	Were samples accepted into the laboratory? (If "No", see comments)	X	

Cooler # _____ Temp 2 C Cooler # _____ Temp. _____ C

Comments: _____

308/bjj/52/forms/shipper.xls

Interlaboratory Chain of Custody

BRECKENRIDGE PKWY., STE. H
TAMPA, FL 33610
PHONE (813) 621-0784 FAX (813) 623-6021

Quanterra Environmental Services

.IENT CODE ABBES
JOTE / SAR NUMBER
ıain-of Custody Record

76535

PROJ. NO. 856703
PROJECT NAME/LOCATION Mayport Bldg 460
;AMPLERS: (Signature) Dan Plugge

TA. NO.	DATE	TIME	COMP.	GRAB.	STATION LOCATION	NO. OF CON-TAINERS	PARAMETER: EPA Method 602						REMARKS
	5-15-95	10:45		X	P1	1		X					24 hour expedited service
	"	11:00		X	P2	1		X					Please fax results to
	"	11:15		X	P3	1		X					904-264-5632
	"	11:30		X	P4	1		X					
	5-17-95	11:00		X	P5	1		X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Dan Plugge	5-17-95 4:00	Carol McMulty 5/18/95			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

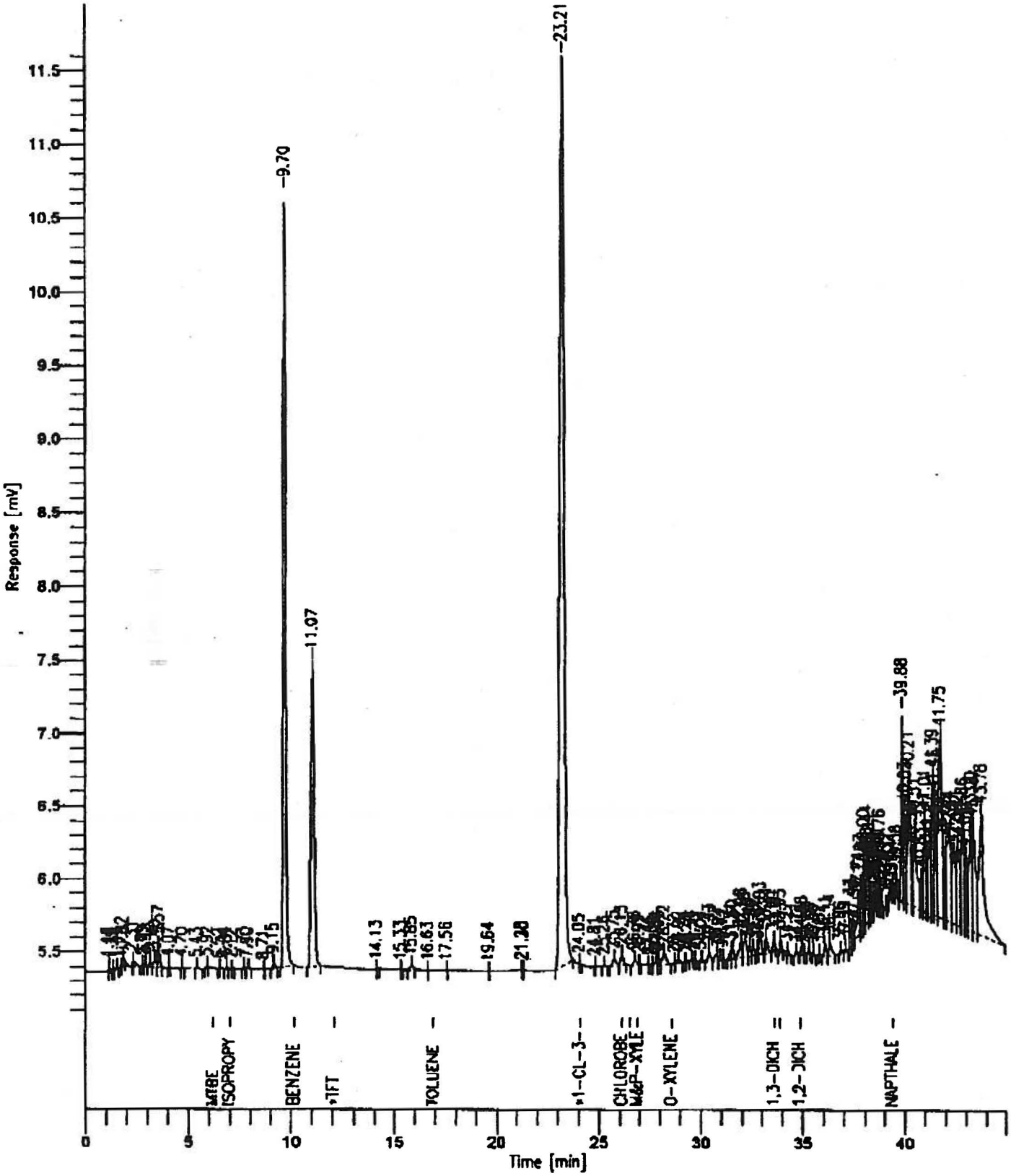
Distribution Original Accompanies Shipment. Copy returned with Report.

RM 034

V1B PID Chromatogram

Sample Name : E180122-1
FileName : C:\TC4\V1\V181530.raw
Method : V1B
Start Time : 0.00 min End Time : 45.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #: Page 1 of 1
Date : 5/19/95 09:17
Time of Injection: 5/19/95 08:32
Low Point : 5.04 mV High Point : 11.63 mV
Plot Scale: 6.6 mV



Software Version: 4.0<4J28>
Sample Name : E180122-1 Time : 5/19/95 14:07
Sample Number: Study : WC086
Operator :

Instrument : V1 Channel : B A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 4280272061 Data Acquisition Time: 5/19/95 08:32
Delay Time : 0.00 min.
End Time : 45.00 min.
Sampling Rate : 2.0000 pts/sec

Raw Data File : C:\TC4\V1\V1B1530.RAW
Result File : C:\TC4\V1\V1B1530.RST
Inst Method : V1B from C:\TC4\V1\V1B1530.RST
Proc Method : C:\TC4\V1\V1B from C:\TC4\V1\V1B1530.RST
Calib Method : C:\TC4\V1\V1B0504 from C:\TC4\V1\V1B1530.RST
Sequence File : C:\TC4\V1\V1_0517.SEQ

Sample Volume : 1.0000 mL Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00

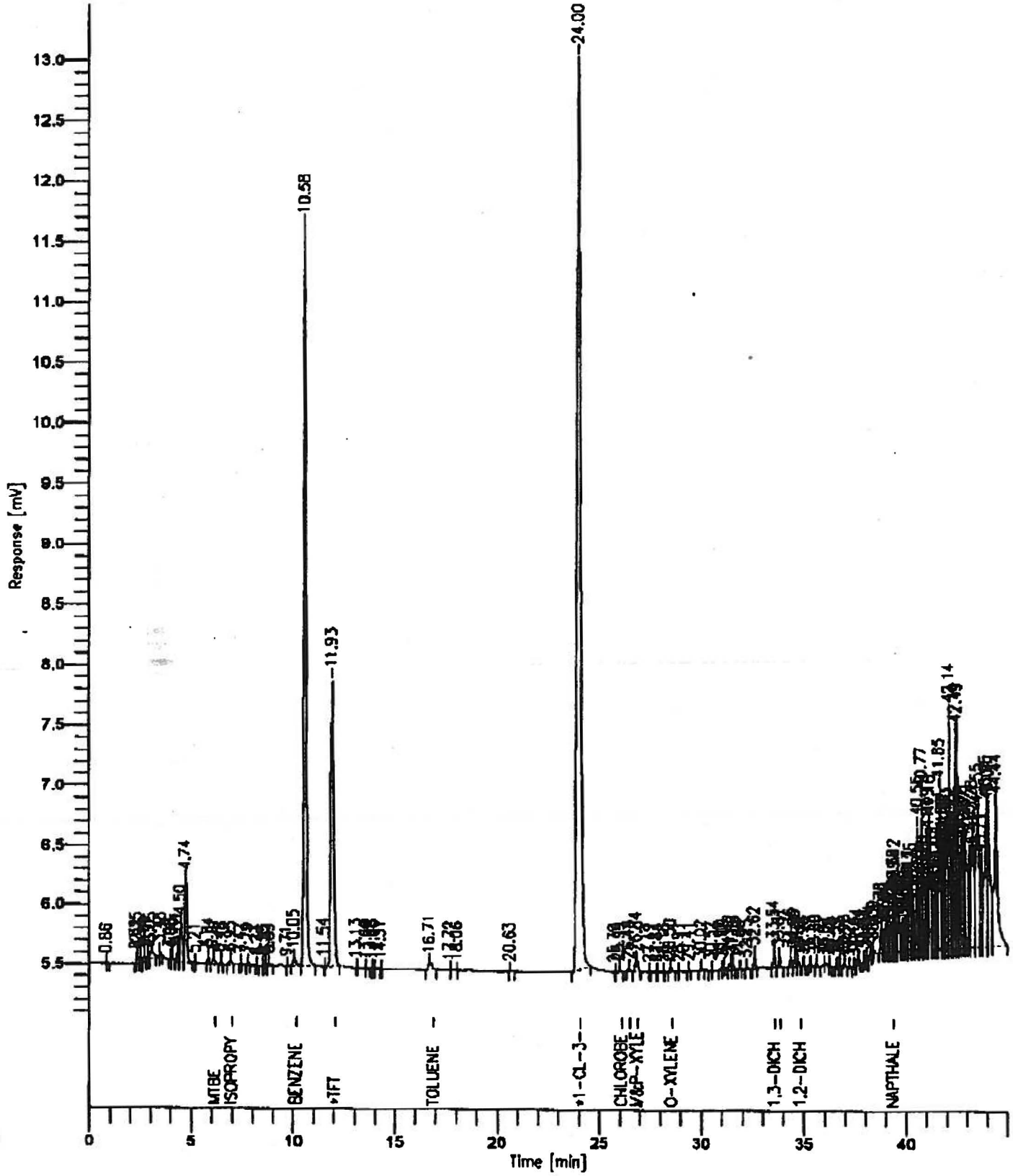
V1B PID Report

Delta RT (%)	Time (min)	Component Name	Amount (ng)	Purge Amount	Dil. Fact.	Amount (ppb)	Area (µV·s)	Height (µV)	RRf (height)
-------	6.21	MtBE	0.000	5.0	1	0.000	0	0	----------
-3e-15	7.12	Isopropyl Ether	3.432 -	5.0	1	0.686	22	4	25.9152
-------	10.16	Benzene	0.000	5.0	1	0.000	0	0	----------
-4e-15	11.07	*TFT	107.157 +	5.0	1	21.431	22134	2116	1.9924
-------	16.91	Toluene	0.000	5.0	1	0.000	0	0	----------
5e-15	23.21	*1-Cl-3-F-benzene	0.000	5.0	1	0.000	82310	6229	1.0000
-9e-16	25.75	Chlorobenzene	0.768	5.0	1	0.154	595	51	0.4649
9e-16	26.13	Ethylbenzene	1.153	5.0	1	0.231	696	73	0.4892
5e-15	26.77	m&p-Xylene	0.508	5.0	1	0.102	511	40	0.3963
6e-15	28.22	o-Xylene	1.017	5.0	1	0.203	1011	78	0.4070
7e-15	33.60	1,3-Dichlorobenzene	0.592	5.0	1	0.118	397	67	0.2741
-1e-15	33.93	1,4-Dichlorobenzene	0.871	5.0	1	0.174	584	101	0.2690
9e-15	34.98	1,2-Dichlorobenzene	0.837	5.0	1	0.167	362	70	0.3747
7e-15	39.41	Napthalene	0.389	5.0	1	0.078	156	63	0.1933
							108777	8892	

V1B PID Chromatogram

Sample Name : W100122-2
FileName : C:\TC4\V1\V181531.raw
Method : V1B
Start Time : 0.00 min End Time : 45.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #: Page 1 of 1
Date : 5/19/95 10:08
Time of Injection: 5/19/95 09:22
Low Point : 5.05 mV High Point : 13.07 mV
Plot Scale: 8.0 mV



Software Version: 4.0<4J28>
Sample Name : E180122-2 Time : 5/19/95 10:08
Sample Number: Study : WC086
Operator :

Instrument : V1 Channel : B A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 4280272061 Data Acquisition Time: 5/19/95 09:22
Delay Time : 0.00 min.
End Time : 45.00 min.
Sampling Rate : 2.0000 pts/sec

Raw Data File : C:\TC4\V1\V1B1531.RAW
Result File : C:\TC4\V1\V1B1531.RST
Inst Method : V1B from C:\TC4\V1\V1B1531.RST
Proc Method : C:\TC4\V1\V1B
Calib Method : C:\TC4\V1\V1B0504
Sequence File : C:\TC4\V1\V1_0517.SEQ

Sample Volume : 1.0000 mL Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00

V1B PID Report

Delta RT [%]	Time [min]	Component Name	Amount [ng]	Purge Amount	Dil. Fact.	Amount [ppb]	Area [µV·s]	Height [µV]	RRF [height]
-1.5740	6.11	MtBE	1.585	5.0	1	0.317	512	44	1.3573
-0.8502	6.95	Isopropyl Ether	4.079	5.0	1	0.816	293	27	5.7391
-1.0726	10.05	Benzene	0.622	5.0	1	0.124	576	65	0.3655
-1.1297	11.93	*TFT	104.797	5.0	1	20.959	25304	2417	1.9924
------	16.91	Toluene	0.000	5.0	1	0.000	0	0	------
-0.2850	24.00	*1-Cl-3-F-benzene	0.000	5.0	1	0.000	96520	7611	1.0000
-0.4999	25.99	Chlorobenzene	0.191	5.0	1	0.038	158	16	0.4649
-0.1617	26.48	Ethylbenzene	0.339	5.0	1	0.068	230	26	0.4892
-0.1768	26.84	m&p-Xylene	0.959	5.0	1	0.192	795	92	0.3963
-0.2249	28.50	o-Xylene	0.407	5.0	1	0.081	286	38	0.4070
-0.1863	33.54	1,3-Dichlorobenzene	1.176	5.0	1	0.235	910	163	0.2741
-0.2237	33.81	1,4-Dichlorobenzene	0.659	5.0	1	0.132	614	94	0.2680
0.3146	34.98	1,2-Dichlorobenzene	0.112	5.0	1	0.022	46	11	0.3747
-0.0147	39.38	Napthalene	2.363	5.0	1	0.473	1677	465	0.1933
							128000	11070	

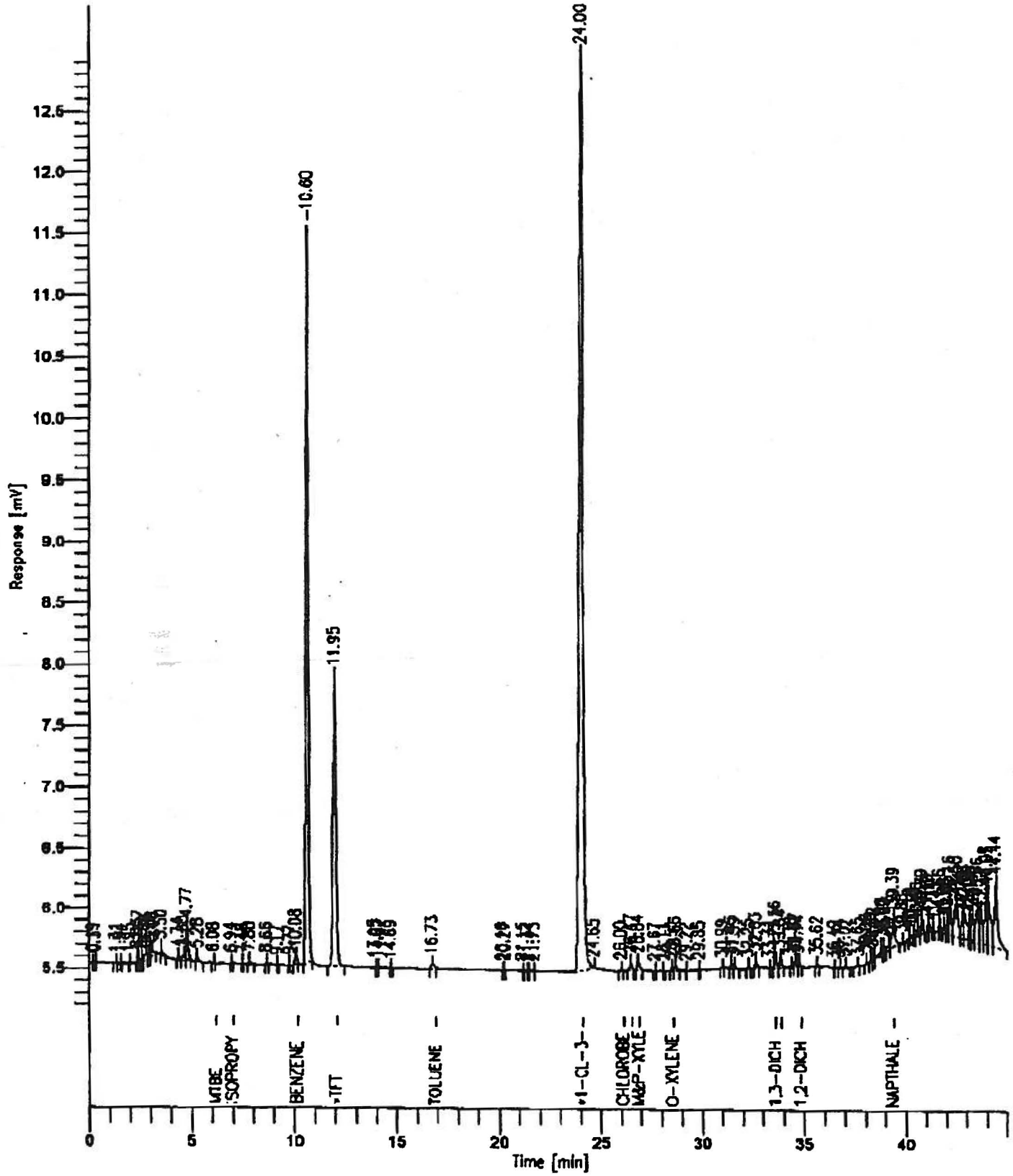
V1B PID Chromatogram

P3

Sample Name : E180122-3
FileName : C:\TC4\V1\V181532.raw
Method : V1B
Start Time : 0.00 min End Time : 45.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #:
Date : 5/19/95 10:58
Time of Injection: 5/19/95 10:13
Low Point : 5.10 mV High Point : 12.98 mV
Plot Scale: 7.9 mV

Page 1 of 1



Software Version: 4.0<4J28>
Sample Name : E180122-3 Time : 5/19/95 10:58
Sample Number: Study : WC086
Operator :

Instrument : V1 Channel : B A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 4280272061 Data Acquisition Time: 5/19/95 10:13
Delay Time : 0.00 min.
End Time : 45.00 min.
Sampling Rate : 2.0000 pts/sec

Raw Data File : C:\TC4\V1\V1B1532.RAW
Result File : C:\TC4\V1\V1B1532.RST
Inst Method : V1B from C:\TC4\V1\V1B1532.RST
Proc Method : C:\TC4\V1\V1B
Calib Method : C:\TC4\V1\V1B0504
Sequence File : C:\TC4\V1\V1_0517.SEQ

Sample Volume : 1.0000 mL Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00

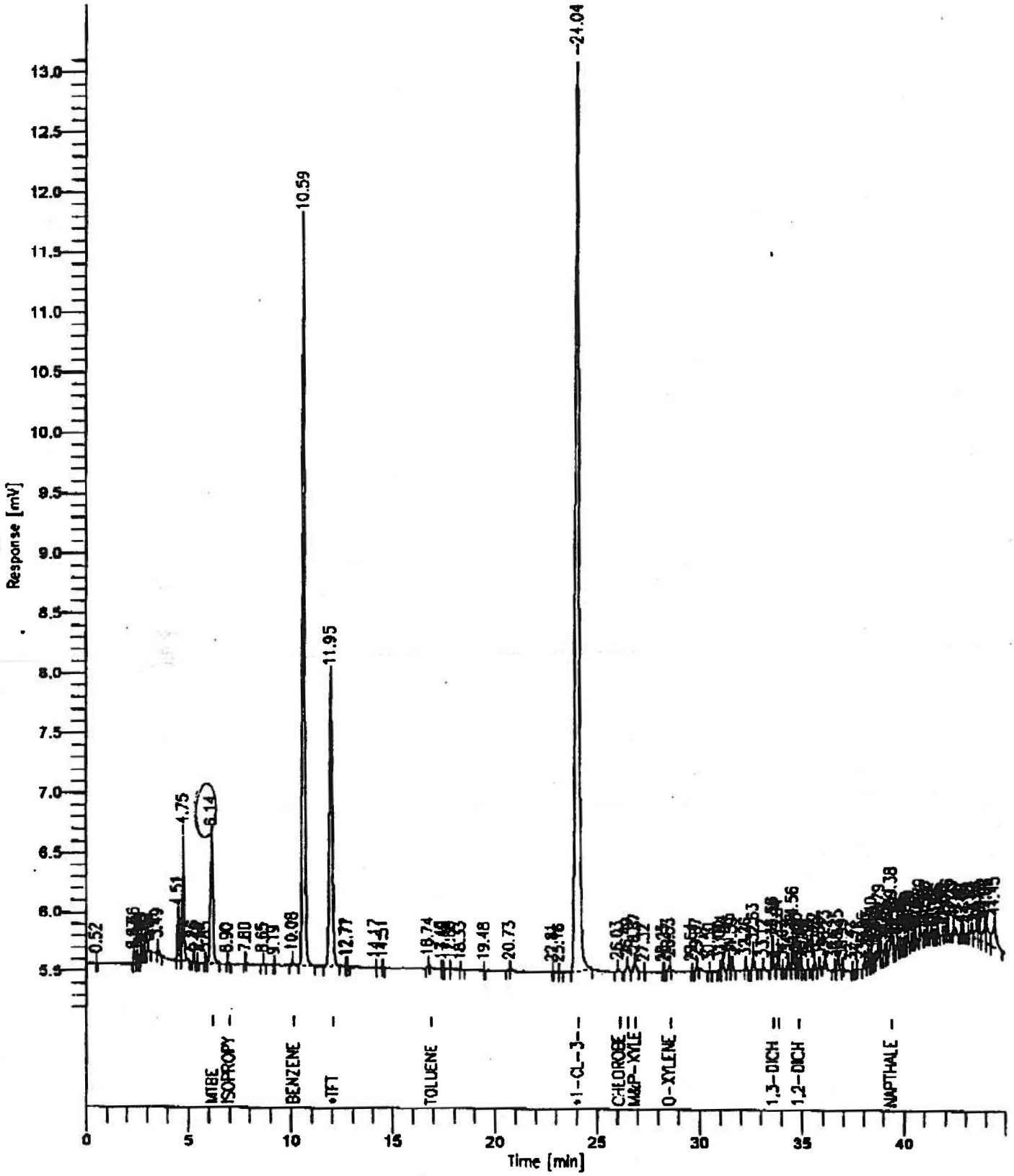
V1B PID Report

Delta RT (%)	Time (min)	Component Name	Amount (ng)	Purge Amount	Dil. Fact.	Amount (ppb)	Area (µV·s)	Height (µV)	RRF (height)
-2.1112	6.08	MtBE	0.287	5.0	1	0.057	51	8	1.3571
-1.0582	6.94	Isopropyl Ether	3.469	5.0	1	0.694	20	6	21.0459
-0.8334	10.08	Benzene	0.557	5.0	1	0.111	408	57	0.3655
-0.9892	11.95	*TFT	104.529	5.0	1	20.906	25106	2384	1.9924
-1.0768	16.73	Toluene	0.635	5.0	1	0.127	387	37	0.6473
-0.2983	24.00	*1-Cl-3-F benzene	0.000	5.0	1	0.000	95707	7488	1.0000
-0.4680	26.00	Chlorobenzene	0.166	5.0	1	0.033	100	13	0.4649
-0.1669	26.47	Ethylbenzene	0.854	5.0	1	0.171	564	65	0.4892
-0.1974	26.84	m&p-Xylene	0.698	5.0	1	0.140	566	68	0.3963
-0.1915	28.51	o-Xylene	0.254	5.0	1	0.051	157	23	0.4070
-0.1264	33.56	1,3-Dichlorobenzene	1.176	5.0	1	0.235	901	161	0.2741
-0.1302	33.84	1,4-Dichlorobenzene	0.609	5.0	1	0.122	538	85	0.2680
-0.3547	34.74	1,2-Dichlorobenzene	0.370	5.0	1	0.074	241	37	0.3747
0.0061	39.39	Napthalene	1.336	5.0	1	0.267	2092	259	0.1933
							126836	10690	

V1B PID Chromatogram

Sample Name : E180122-4 P4
FileName : C:\TC4\V1\V1B15J3.raw
Method : V1B
Start Time : 0.00 min End Time : 45.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #: Page 1 of 1
Date : 5/19/95 11:49
Time of Injection: 5/19/95 11:04
Low Point : 5.12 mV High Point : 13.17 mV
Plot Scale: 8.0 mV



Software Version: 4.0<4J28>
Sample Name : E180122-4 Time : 5/19/95 11:49
Sample Number: Study : WC086
Operator :

Instrument : V1 Channel : B A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 4280272061 Data Acquisition Time: 5/19/95 11:04
Delay Time : 0.00 min.
End Time : 45.00 min.
Sampling Rate : 2.0000 pts/sec

Raw Data File : C:\TC4\V1\V1B1533.RAW
Result File : C:\TC4\V1\V1B1533.RST
Inst Method : V1B from C:\TC4\V1\V1B1533.RST
Proc Method : C:\TC4\V1\V1B
Calib Method : C:\TC4\V1\V1B0504
Sequence File : C:\TC4\V1\V1_0517.SEQ

Sample Volume : 1.0000 mL Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00

V1B PID Report

Delta Rt (%)	Time (min)	Component Name	Amount (ng)	Purge Amount	Dil. Fact.	Amount (ppb)	Area (µV·s)	Height (µV)	RRF (height)
-1.1242	6.14	MtBE	38.103	5.0	1	7.621 *	10529	1072	1.3611
-1.5338	6.90	Isopropyl Ether	3.535 -	5.0	1	0.707	75	9	15.7605
-0.8389	10.08	Benzene	0.387	5.0	1	0.077	388	41	0.3655
-0.9849	11.95	*TFT	105.794 +	5.0	1	21.159	25796	2437	1.9924
-0.9762	16.74	Toluene	0.107	5.0	1	0.021	43	6	0.6473
-0.1457	24.04	*1-Cl-3-F-Benzene	0.000	5.0	1	0.000	97164	7658	1.0000
-0.3563	26.02	Chlorobenzene	0.299	5.0	1	0.060	224	25	0.4649
-0.1224	26.49	Ethylbenzene	0.642	5.0	1	0.128	448	50	0.4892
-0.0735	26.07	m&p-Xylene	0.872	5.0	1	0.174	726	84	0.3963
-0.1332	28.53	o-Xylene	0.447	5.0	1	0.089	292	42	0.4070
-0.1211	33.56	1,3-Dichlorobenzene	1.494	5.0	1	0.299	1115	209	0.2741
-0.1499	33.84	1,4-Dichlorobenzene	1.310	5.0	1	0.262	1126	187	0.2680
0.0795	34.09	1,2-Dichlorobenzene	0.353	5.0	1	0.071	248	36	0.3747
-0.0048	39.38	Napthalene	1.658	5.0	1	0.332	1567	328	0.1933
							139741	12183	

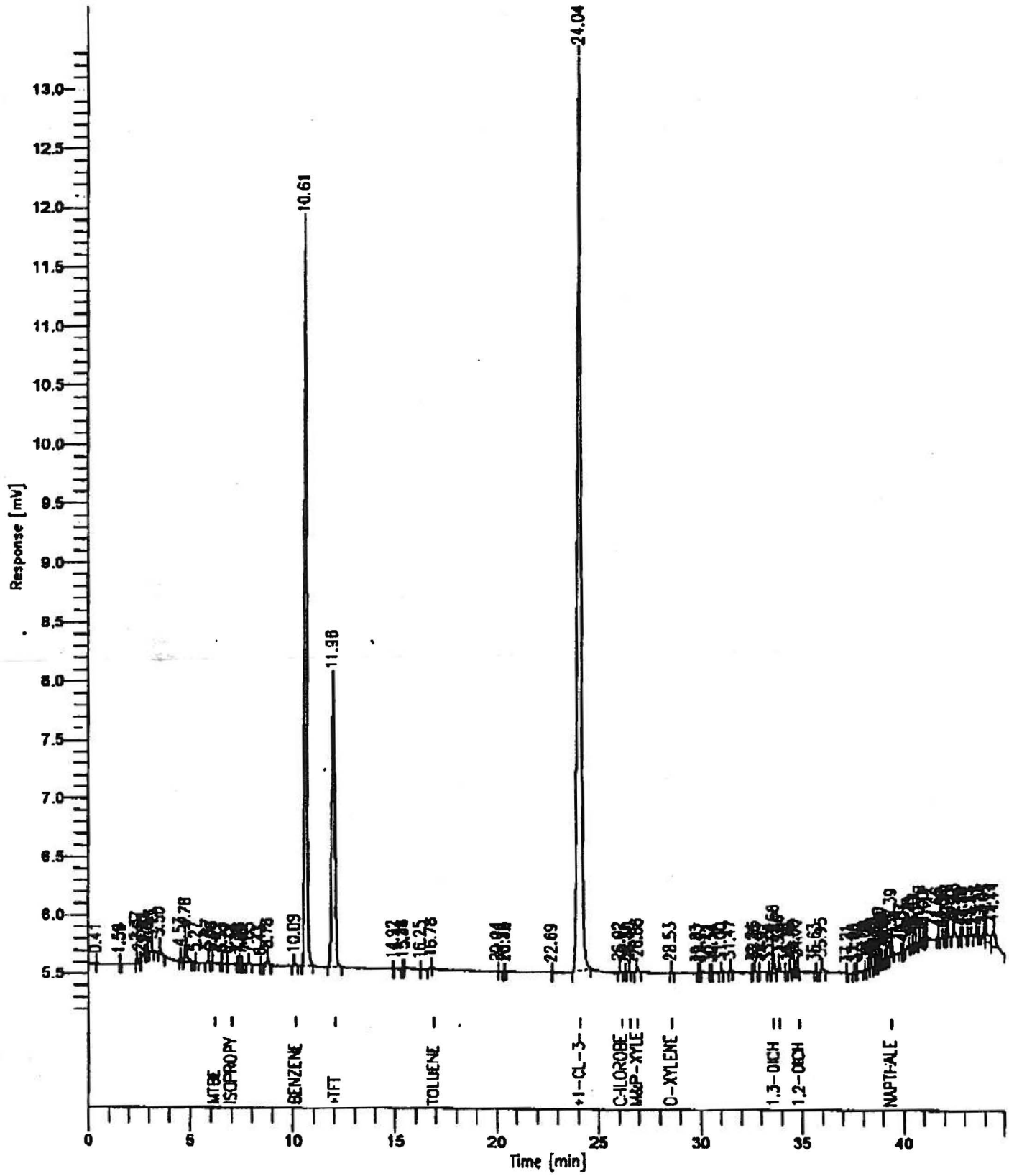
V1B PID Chromatogram

PS

Sample Name : E18U1ZZ-5
FileName : C:\TC4\V1\V181534.raw
Method : V1B
Start Time : 0.00 min End Time : 45.00 min
Scale Factor: 1.0 Plot Offset: 5 mV

Sample #:
Date : 5/19/95 12:40
Time of Injection: 5/19/95 11:55
Low Point : 5.13 mV High Point : 13.30 mV
Plot Scale: 8.2 mV

Page 1 of 1



Software Version: 4.0<4J28>
Sample Name : E180122-5 Time : 5/19/95 12:40
Sample Number: Study : WC086
Operator :

Instrument : V1 Channel : B A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 4280272061 Data Acquisition Time: 5/19/95 11:55
Delay Time : 0.00 min.
End Time : 45.00 min.
Sampling Rate : 2.0000 pts/sec

Raw Data File : C:\TC4\V1\V1B1534.RAW
Result File : C:\TC4\V1\V1B1534.RST
Inst Method : V1B from C:\TC4\V1\V1B1534.RST
Proc Method : C:\TC4\V1\V1B
Calib Method : C:\TC4\V1\V1B0504
Sequence File : C:\TC4\V1\V1_0517.SEQ

Sample Volume : 1.0000 mL Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00

V1B PID Report

Delta RT (%)	Time (min)	Component Name	Amount (ng)	Purge Amount	Dil. Fact.	Amount (ppb)	Area (µV·s)	Height (µV)	RRF (height)
-2.3126	6.06	MtBE	0.127	5.0	1	0.025	18	4	1.3571
-------	7.01	Isopropyl Ether	0.000	5.0	1	0.000	0	0	----------
-0.7446	10.09	Benzene	0.239	5.0	1	0.048	206	25	0.3655
-0.8625	11.96	*TFT	104.233	5.0	1	20.847	25621	2454	1.9924
-0.7872	16.77	Toluene	0.127	5.0	1	0.025	70	8	0.6473
-0.1141	24.04	*1-Cl-3-F-benzene	0.000	5.0	1	0.000	97950	7768	1.0000
-0.3616	26.02	Chlorobenzene	0.188	5.0	1	0.038	120	16	0.4649
-0.0517	26.50	Ethylbenzene	0.195	5.0	1	0.039	118	15	0.4892
-0.0301	26.88	m&p-Xylene	0.486	5.0	1	0.097	401	48	0.3963
-0.1186	28.53	o-Xylene	0.180	5.0	1	0.036	110	17	0.4070
-0.0836	33.58	1,3-Dichlorobenzene	1.163	5.0	1	0.233	932	165	0.2741
-0.0811	33.86	1,4-Dichlorobenzene	0.514	5.0	1	0.103	507	75	0.2680
-0.2830	34.77	1,2-Dichlorobenzene	0.261	5.0	1	0.052	122	27	0.3747
0.0204	39.39	Napthalene	0.777	5.0	1	0.155	484	156	0.1933
							126661	10777	

Quanterra
Environmental Services

5910 Brackenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

FAX TRANSMISSION

FROM: JOANNE ANDERSON
QUANTERRA

TO: Dan Plugge

NUMBER OF PAGES: 11

1. 904. 264-5632

Raw data

The information contained in this facsimile is privileged and confidential information, intended only for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copy of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone. Thank You.

fxccvr.doc

APPENDIX E

LITHOLOGIC LOGS

Project: Mayport Naval Station, Building 460		**Well ID:** MPT-CU-01S	**Boring ID:**
Client: SOUTHNAVFACENGCOM			**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)		**Date started:** 5/23/95	**Compltd:** 5/23/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.28 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ⊽** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/24/95		**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT AND ROAD ROCK:		SM		
					SAND: Light brown, fine grained, loose-medium dense sand, poorly sorted				
5							SC		
					SAND: Grey clay mixed with fine grained sand				
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460	**Well ID:** MPT-CU-02S	**Boring ID:**
Client: SOUTHNAVFACENGCOM		**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)	**Date started:** 5/23/95	**Compltd:** 5/23/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.28 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ⊽** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/24/95	**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT AND ROAD ROCK:		SM		
					SAND: Light brown, fine grained, loose-medium dense sand, poorly sorted		SM		
5					SAND: Grey clay mixed with fine grained sand		SC		
10									
15									
20									

ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460	**Well ID:** MPT-CU-03S	**Boring ID:**
Client: SOUTHNAVFACENGCOM		**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)	**Date started:** 5/23/95	**Compltd:** 5/23/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.29 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/24/95	**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT AND ROAD ROCK:		SM		
					SAND: light brown, fine grained, loose-medium dense sand, poorly sorted				
5							SC		
					SAND: dark grey, fine grained, loose-medium dense sand				
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460	**Well ID:** MPT-CU-04S	**Boring ID:**
Client: SOUTHNAVFACENGCOM		**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)	**Date started:** 5/23/95	**Compltd:** 5/23/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.54 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/24/95	**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT AND ROAD ROCK:		SM		
					SAND: light brown, fine grained, loose-medium dense sand, poorly sorted, slight hydrocarbon odor				
5							SC		
					SAND: dark grey, fine grained, loose-medium dense sand				
10									
15									
20									

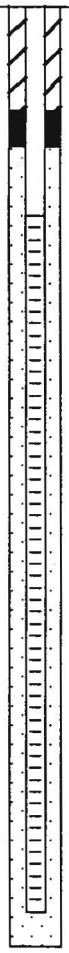


 ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460		**Well ID:** MPT-CU-05S	**Boring ID:**
Client: SOUTHNAVFACENGCOM			**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)		**Date started:** 5/23/95	**Compltd:** 5/23/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.71 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/24/95		**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					SAND: Light brown, fine grained, loose-medium dense sand, poorly sorted		SM		
5					CLAY: Grey clay, fine grained, mixed with sand, medium dense clay		SC		
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460		**Well ID:** MPT-CU-06S	**Boring ID:**
Client: SOUTHNAVFACENGCOM			**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)		**Date started:** 5/24/95	**Compltd:** 5/24/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.05 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 14Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Mark Joop	**Well development date:** 5/26/95		**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					SAND: White, fine grained, silty sand, medium dense sand, well sorted		SM		
5							SC		
					CLAY: Grey clay, fine grained, mixed with sand and shell fragments, poorly sorted				
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

Project: Mayport Naval Station, Building 460	**Well ID:** MPT-CU-07S	**Boring ID:**
Client: SOUTHNAVFACENGCOM		**Job No.:** 08567-04
Contractor: Groundwater Protection, Inc. (GPI)	**Date started:** 5/25/95	**Compltd:** 5/25/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 3.0 to 13.0	**Protection level:** D
TOC elev.: 11.33 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 13Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/26/95	**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT AND ROAD ROCK:		SM		
					SAND: Light brown, fine grained, loose-medium dense sand, poorly sorted				
5							SC		
					CLAY: Dark grey, fine grained, mixed with fine-grained sand, poorly sorted				
10									
15									
20									

 ABB ENVIRONMENTAL SERVICES, INC.

Project: NAS Mayport, Building 460		**Well ID:** MPT-CU-MW08D	**Boring ID:**
Client: SOUTHNAVFACENGCOM			**Job No.:** 08587-04
Contractor: Groundwater Protection, Inc. (GPI)		**Date started:** 5/24/95	**Compltd:** 5/25/95
Method: Hollow Stem Auger	**Casing dia.:** 2 in.	**Screened int.:** 25.0 to 30.0	**Protection level:** D
TOC elev.: 11.37 Ft.	**Type of OVM.:** Porta FID	**Total dpth:** 30Ft.	**Dpth to ∇** 5 (bls) Ft.
ABB Rep.: Dan Plugge	**Well development date:** 5/26/95		**Site:** Building 460

Depth Ft.	Laboratory Sample ID.	Sample	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.	Well diag.
					ASPHALT		SM		
					SAND: Limerock				
5			100%						
			100%					3,3,4,2	
			75%					3,6,7,12	
					SAND: brown, fine grained, poorly graded, interspersed with grey silty clay.				
10			75%					10,18,23,28	
			50%		SAND: Light grey, fine grained, densely packed		SC	16,30,35,45	
15			75%					3,7,12,20	
			100%					4,5,15,28	
			100%					28,40,48,R	
20			100%		SAND: Grey, fine-grained, densely packed, silty clay		SM	8,20,30,38	
			100%	150				6,8,11,15	
			100%	50				15,18,20,17	
25			100%	7	SAND: Grey, fine grained, densely packed, silty sand			10,12,15,16	
30									
35									

 ABB ENVIRONMENTAL SERVICES, INC.

APPENDIX F

GROUNDWATER ANALYTICAL DATA

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00101				CUG00201				CUG00301				CUG00401			
Collect Date:	01-JUN-95				01-JUN-95				01-JUN-95				01-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
1,1,1-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,1,2,2-Tetrachloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,1,2-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,1-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,1-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,2-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,2-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,2-Dichloropropane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,3-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
1,4-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
2-Chloroethyl vinyl ether	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Bromodichloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Bromoform	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Bromomethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Carbon tetrachloride	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Chlorobenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Chloroethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Chloroform	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Chloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Dibromochloromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Dichlorodifluoromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Methylene chloride	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	3.5	J	ug/l	2
Tetrachloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Trichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Trichlorofluoromethane	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Vinyl chloride	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
cis-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
trans-1,2-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
trans-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Benzene	1	U	ug/l	1	1	U	ug/l	1	1.9		ug/l	1	18		ug/l	2
Ethylbenzene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	29		ug/l	2
Toluene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Xylenes (total)	1.1		ug/l	1	1	U	ug/l	1	1	U	ug/l	1	2	U	ug/l	2
Methyl tert-butyl ether	1	U	ug/l	1	1	U	ug/l	1	12		ug/l	1	240		ug/l	2
Modified PAH's																
Acenaphthene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
Acenaphthylene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
Anthracene	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1	1	U	ug/l	1
Benzo (a) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Benzo (a) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Benzo (b) fluoranthene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Benzo (g,h,i) perylene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Benzo (k) fluoranthene	.15	U	ug/l	.15	.15	U	ug/l	.15	.15	U	ug/l	.15	.15	U	ug/l	.15
Chrysene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Dibenzo (a,h) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
Fluoranthene	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2
Fluorene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2.6		ug/l	2
Indeno (1,2,3-cd) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1
1-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	16		ug/l	2

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00101				CUG00201				CUG00301				CUG00401			
Collect Date:	01-JUN-95				01-JUN-95				01-JUN-95				01-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
2-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
Naphthalene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
Phenanthrene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2
Pyrene	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2
Total petroleum hydrocarbons	1	U	mg/l	1	1	U	mg/l	1	-				1	U	mg/l	1
Lead	5	U	ug/l	5	5	U	ug/l	5	5	U	ug/l	5	5	U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00401				CUG00401D				CUG00501				CUG00601			
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
1,1,1-Trichloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,1,2,2-Tetrachloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,1,2-Trichloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,1-Dichloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,1-Dichloroethene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichlorobenzene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,2-Dichloropropane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,3-Dichlorobenzene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
1,4-Dichlorobenzene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
2-Chloroethyl vinyl ether	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Bromodichloromethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Bromoform	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Bromomethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Carbon tetrachloride	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Chlorobenzene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Chloroethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Chloroform	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Chloromethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Dibromochloromethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Dichlorodifluoromethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Methylene chloride	-				3.4	J	ug/l	2	1.1	J	ug/l	1	1.6	J	ug/l	1
Tetrachloroethene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Trichloroethene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Trichlorofluoromethane	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Vinyl chloride	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
cis-1,3-Dichloropropene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
trans-1,2-Dichloroethene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
trans-1,3-Dichloropropene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Benzene	-				18		ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Ethylbenzene	-				30		ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Toluene	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Xylenes (total)	-				2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Methyl tert-butyl ether	-				230		ug/l	2	1	U	ug/l	1	1	U	ug/l	1
Modified PAH's																
Acenaphthene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	-			
Acenaphthylene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	-			
Anthracene	2	U	ug/l	2	1	U	ug/l	1	1	U	ug/l	1	-			
Benzo (a) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00401				CUG00401D				CUG00501				CUG00601			
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Benzo (a) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
Benzo (b) fluoranthene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
Benzo (g,h,i) perylene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
Benzo (k) fluoranthene	.15	U	ug/l	.15	.15	U	ug/l	.15	.15	U	ug/l	.15	-			
Chrysene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
Dibenzo (a,h) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
Fluoranthene	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2	-			
Fluorene	2	U	ug/l	2	2.9		ug/l	2	2	U	ug/l	2	-			
Indeno (1,2,3-cd) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	.1	U	ug/l	.1	-			
1-Methylnaphthalene	2	U	ug/l	2	15		ug/l	2	2	U	ug/l	2	-			
2-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	-			
Naphthalene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	-			
Phenanthrene	2	U	ug/l	2	2	U	ug/l	2	2	U	ug/l	2	-			
Pyrene	.2	U	ug/l	.2	.2	U	ug/l	.2	.2	U	ug/l	.2	-			
Total petroleum hydrocarbons	-				1	U	mg/l	1	1	U	mg/l	1	1	U	mg/l	1
Lead	-				5	U	ug/l	5	6	U	ug/l	6	5	U	ug/l	5

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00701				CUG00801				CUB00204				CUB00206			
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
1,1,1-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,1,2,2-Tetrachloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,1,2-Trichloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,1-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,1-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,2-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,2-Dichloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,2-Dichloropropane	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,3-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
1,4-Dichlorobenzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
2-Chloroethyl vinyl ether	1	U	ug/l	1	1	U	ug/l	1	-				-			
Bromodichloromethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Bromoform	1	U	ug/l	1	1	U	ug/l	1	-				-			
Bromomethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Carbon tetrachloride	1	U	ug/l	1	1	U	ug/l	1	-				-			
Chlorobenzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Chloroethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Chloroform	1	U	ug/l	1	1	U	ug/l	1	-				-			
Chloromethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Dibromochloromethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Dichlorodifluoromethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Methylene chloride	1	U	ug/l	1	2.4	J	ug/l	1	-				-			
Tetrachloroethene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Trichloroethene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Trichlorofluoromethane	1	U	ug/l	1	1	U	ug/l	1	-				-			
Vinyl chloride	1	U	ug/l	1	1	U	ug/l	1	-				-			
cis-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	-				-			
trans-1,2-Dichloroethene	1	U	ug/l	1	1	U	ug/l	1	-				-			
trans-1,3-Dichloropropene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Benzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Ethylbenzene	1	U	ug/l	1	1	U	ug/l	1	-				-			
Toluene	1	U	ug/l	1	1.2		ug/l	1	-				-			
Xylenes (total)	1	U	ug/l	1	3.9		ug/l	1	-				-			
Methyl tert-butyl ether	1	U	ug/l	1	1	U	ug/l	1	-				-			
Modified PAH's																
Acenaphthene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
Acenaphthylene	2	U	ug/l	2	2	U	ug/l	2	110	U	ug/kg	110	-			
Anthracene	1	U	ug/l	1	1	U	ug/l	1	57	U	ug/kg	57	-			
Benzo (a) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	16		ug/kg	5.7	-			

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- REPORT NUMBER 7261

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00701				CUG00801				CUB00204				CUB00206			
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Benzo (a) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	5.7	U	ug/kg	5.7	-			
Benzo (b) fluoranthene	.1	U	ug/l	.1	.1	U	ug/l	.1	5.7	U	ug/kg	5.7	-			
Benzo (g,h,i) perylene	.1	U	ug/l	.1	.1	U	ug/l	.1	64		ug/kg	5.7	-			
Benzo (k) fluoranthene	.15	U	ug/l	.15	.15	U	ug/l	.15	37		ug/kg	5.7	-			
Chrysene	.1	U	ug/l	.1	.1	U	ug/l	.1	36		ug/kg	5.7	-			
Dibenzo (a,h) anthracene	.1	U	ug/l	.1	.1	U	ug/l	.1	5.7	U	ug/kg	5.7	-			
Fluoranthene	.2	U	ug/l	.2	.2	U	ug/l	.2	90		ug/kg	5.7	-			
Fluorene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
Indeno (1,2,3-cd) pyrene	.1	U	ug/l	.1	.1	U	ug/l	.1	5.7	U	ug/kg	5.7	-			
1-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
2-Methylnaphthalene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
Naphthalene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
Phenanthrene	2	U	ug/l	2	2	U	ug/l	2	57	U	ug/kg	57	-			
Pyrene	.2	U	ug/l	.2	.2	U	ug/l	.2	71		ug/kg	5.7	-			
Total petroleum hydrocarbons	1	U	mg/l	1	1	U	mg/l	1	65		mg/kg	11	1700		mg/kg	67
Lead	5	U	ug/l	5	5	U	ug/l	5	-				-			

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- HITS REPORT -- REPORT NUMBER 7263

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00101				CUG00201				CUG00301				CUG00401			
Collect Date:	01-JUN-95				01-JUN-95				01-JUN-95				01-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
Methylene chloride	-	U	ug/l	1	-	U	ug/l	1	-	U	ug/l	1	3.5	J	ug/l	2
Benzene	-	U	ug/l	1	-	U	ug/l	1	1.9		ug/l	1	18		ug/l	2
Ethylbenzene	-	U	ug/l	1	-	U	ug/l	1	-	U	ug/l	1	29		ug/l	2
Toluene	-	U	ug/l	1	-	U	ug/l	1	-	U	ug/l	1	-	U	ug/l	2
Xylenes (total)	1.1		ug/l	1	-	U	ug/l	1	-	U	ug/l	1	-	U	ug/l	2
Methyl tert-butyl ether	-	U	ug/l	1	-	U	ug/l	1	12		ug/l	1	240		ug/l	2
Modified PAH's																
Benzo (a) anthracene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1
Benzo (g,h,i) perylene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1
Benzo (k) fluoranthene	-	U	ug/l	.15	-	U	ug/l	.15	-	U	ug/l	.15	-	U	ug/l	.15
Chrysene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1
Fluoranthene	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2
Fluorene	-	U	ug/l	2	-	U	ug/l	2	-	U	ug/l	2	2.6		ug/l	2
1-Methylnaphthalene	-	U	ug/l	2	-	U	ug/l	2	-	U	ug/l	2	16		ug/l	2
Pyrene	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- HITS REPORT -- REPORT NUMBER 7263

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080			
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460			
Locator	CUG00401				CUG00401D				CUG00501				CUG00601			
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
Methylene chloride	-				3.4	J	ug/l	2	1.1	J	ug/l	1	1.6	J	ug/l	1
Benzene	-				18		ug/l	2	-	U	ug/l	1	-	U	ug/l	1
Ethylbenzene	-				30		ug/l	2	-	U	ug/l	1	-	U	ug/l	1
Toluene	-				-	U	ug/l	2	-	U	ug/l	1	-	U	ug/l	1
Xylenes (total)	-				-	U	ug/l	2	-	U	ug/l	1	-	U	ug/l	1
Methyl tert-butyl ether	-				230		ug/l	2	-	U	ug/l	1	-	U	ug/l	1
Modified PAH's																
Benzo (a) anthracene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-			
Benzo (g,h,i) perylene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-			
Benzo (k) fluoranthene	-	U	ug/l	.15	-	U	ug/l	.15	-	U	ug/l	.15	-			
Chrysene	-	U	ug/l	.1	-	U	ug/l	.1	-	U	ug/l	.1	-			
Fluoranthene	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2	-			
Fluorene	-	U	ug/l	2	2.9		ug/l	2	-	U	ug/l	2	-			
1-Methylnaphthalene	-	U	ug/l	2	15		ug/l	2	-	U	ug/l	2	-			
Pyrene	-	U	ug/l	.2	-	U	ug/l	.2	-	U	ug/l	.2	-			

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

MAYPORT -- BUILDING 460
ANALYTICAL DATA -- HITS REPORT -- REPORT NUMBER 7263

Lab Sample Number:	B5F0601080				B5F0601080				B5F0601080				B5F0601080		
Site	MAYPORT 460				MAYPORT 460				MAYPORT 460				MAYPORT 460		
Locator	CUG00701				CUG00801				CUB00204				CUB00206		
Collect Date:	01-JUN-95				01-JUN-95				02-JUN-95				02-JUN-95		
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
EPA 601/602																
Methylene chloride	-	U	ug/l	1	2.4	J	ug/l	1	-				-			
Benzene	-	U	ug/l	1	-	U	ug/l	1	-				-			
Ethylbenzene	-	U	ug/l	1	-	U	ug/l	1	-				-			
Toluene	-	U	ug/l	1	1.2		ug/l	1	-				-			
Xylenes (total)	-	U	ug/l	1	3.9		ug/l	1	-				-			
Methyl tert-butyl ether	-	U	ug/l	1	-	U	ug/l	1	-				-			
Modified PAH's																
Benzo (a) anthracene	-	U	ug/l	.1	-	U	ug/l	.1	16		ug/kg	5.7	-			
Benzo (g,h,i) perylene	-	U	ug/l	.1	-	U	ug/l	.1	64		ug/kg	5.7	-			
Benzo (k) fluoranthene	-	U	ug/l	.15	-	U	ug/l	.15	37		ug/kg	5.7	-			
Chrysene	-	U	ug/l	.1	-	U	ug/l	.1	36		ug/kg	5.7	-			
Fluoranthene	-	U	ug/l	.2	-	U	ug/l	.2	90		ug/kg	5.7	-			
Fluorene	-	U	ug/l	2	-	U	ug/l	2	-	U	ug/kg	57	-			
1-Methylnaphthalene	-	U	ug/l	2	-	U	ug/l	2	-	U	ug/kg	57	-			
Pyrene	-	U	ug/l	.2	-	U	ug/l	.2	71		ug/kg	5.7	-			

U = NOT DETECTED J = ESTIMATED VALUE
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED

CH2M HILL QUALITY ANALYTICS

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
	Mayport 460

CLIENT NAME: ABB-ES

PROJECT MANAGER: Dan Plugge

COPY TO: Dan Plugge

REQUESTED COMP. DATE:

SAMPLING REQUIREMENTS: SDWA ☐ NPDES ☐ RCRA ☐ OTHER ____

CLIENT ADDRESS AND PHONE NUMBER: ABB ES 1536 Kingsley Ave, Suite 107 Orange Park FL 32073

ANALYSES REQUESTED

STA NO.	DATE	TIME	COMP	GRAB	SOIL	SAMPLE DESCRIPTIONS (12 CHARACTERS)	# OF CONTAINERS	601/602 - 40ml HCL	504.1 - 40ml HCL	418.1 - 1LA HCL	610 - 1LA Ice	239.2 - 500ml HNO3						LAB ID	REMARKS
	6-1-95	1300		X		CUT00101	3	3											CUT00101 - Trip Blank
	↑	1320		↓		CUG00701	7	2	2	1	1	1							
		1345				CUG00201	7	2	2	1	1	1							
		1415				CUG00101	7	2	2	1	1	1							
		1440				CUG00301	7	2	2	1	1	1							
		1520				CUG00801	7	2	2	1	1	1							
		1600				CUR00401	7	2	2	1	1	1							
		1610				CUG00401	7	2	2	1	1	1							
	↓	1620				CUG04D01	7	2	2	1	1	1							
	6-2-95	1115				CUG00601	7	2	2	1	1	1							
	"	1140		↓		CUG00501	7	2	2	1	1	1							

FOR LAB USE ONLY

LAB#		
LAB#		
PROJECT NO.		
ACK	VERIFIED	
QUOTE#	BS	
NO. OF SAMP	PG	OF

SAMPLED BY AND TITLE: Dan Plugge	DATE/TIME: 6-2-95 / 1510	RELINQUISHED BY: Dan Plugge	DATE/TIME: 6-2-95 / 1510
RECEIVED BY:	DATE/TIME: /	RELINQUISHED BY:	DATE/TIME
RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME
RECEIVED BY LAB:	DATE/TIME	SAMPLE SHIPPED VIA: UPS BUS FED-EX HAND OTHER ____	AIR BILL#

HAZWRAP/NEESA Y N

QC LEVEL 1 2 3

COC	ICE
ANA REQ	TEMP
CUST SEAL	Ph
SAMPLE COND.	

REMARKS: Trip Blank prepared by lab 5-17-95

ENTERED INTO LIMS ____ COC REVIEWED ____

CH2M HILL QUALITY ANALYTICS

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
	Mayport 460

CLIENT NAME: ABB-ES

PROJECT MANAGER: Dan Plugge

COPY TO: Dan Plugge

REQUESTED COMP. DATE:

SAMPLING REQUIREMENTS: SDWA ☐ NPDES ☐ RCRA ☐ OTHER ____

CLIENT ADDRESS AND PHONE NUMBER: ABB-ES 1536 Kingsley Ave, Suite 127, Orange Park, FL 32073

ANALYSES REQUESTED

STA NO.	DATE	TIME	COMP	GRAB	SOIL	SAMPLE DESCRIPTIONS (12 CHARACTERS)	# OF CONTAINERS	236.1/243.1	310.1	325.1 375.4	376.1 413.1	415.1	160.3	160.2	120.2	410.2	360.1	351.3	350.2	353.2	405.1	410.1	410.2	907B	8100	LAB ID
	6-1-95	16:00		X		CUR00401	15	←																	→	
	"	16:10		X		CUG00401	15																			

FOR LAB USE ONLY: LAB# ____ LAB# ____ PROJECT NO. ____ ACK ____ VERIFIED ____ QUOTE# ____ BS ____ NO. OF SAMP ____ PG ____ OF ____

REMARKS

SAMPLED BY AND TITLE	DATE/TIME	RELINQUISHED BY	DATE/TIME
Dan Plugge	6-2-95 2:15	Dan Plugge	6-2-95 / 1510
RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME
RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME
RECEIVED BY LAB:	DATE/TIME	SAMPLE SHIPPED VIA UPS BUS FED-EX HAND OTHER ____	AIR BILL#

HAZWRAP/NEESA Y N; QC LEVEL 1 2 3; COC; ICE; ANA REQ; TEMP; CUST SEAL; Ph; SAMPLE COND.

REMARKS

ENTERED INTO LIMS ____ COC REVIEW ____

CH2M HILL QUALITY ANALYTICS

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
	Mayport 460

CLIENT NAME: ABB-ES

PROJECT MANAGER: Dan Plugge

COPY TO: Dan Plugge

REQUESTED COMP. DATE:

SAMPLING REQUIREMENTS: SDWA ☐ NPDES ☐ RCRA ☐ OTHER ____

CLIENT ADDRESS AND PHONE NUMBER: ABB-ES 1536 Kingsley Ave, Suite 127 Orange Park, FL 32073

ANALYSES REQUESTED

STA NO.	DATE	TIME	COMP	GRAB	SOIL	SAMPLE DESCRIPTIONS (12 CHARACTERS)	# OF CONTAINERS	418.1	351.3	350.2	353.2	365.1	415.2	9078 Modified	3550/8100			LAB ID
	6-2-95	12:50		X	X	CUB00204	5	X	←						→			
	"	"		X	X	CUB00206	1	X										

FOR LAB USE ONLY: LAB# ____ LAB# ____ PROJECT NO. ____ ACK ____ VERIFIED ____ QUOTE# ____ BS ____ NO. OF SAMP ____ PG ____ OF ____

REMARKS: Please note 9078 is for total bacteria + specific petroleum degraders

SAMPLED BY AND TITLE	DATE/TIME	RELINQUISHED BY	DATE/TIME
[signature]	6-2-95 2:15	[signature]	6-2-95 1510
RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME
RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME
RECEIVED BY LAB:	DATE/TIME	SAMPLE SHIPPED VIA UPS BUS FED-EX HAND OTHER ____	AIR BILL#

HAZWRAP/NEESA Y N
QC LEVEL 1 2 3
COC ____ ICE ____
ANA REQ ____ TEMP ____
CUST SEAL ____ Ph ____
SAMPLE COND. ____

REMARKS

ENTERED INTO LIMS ____ COC REVIEWED ____

MW-4 Vol=1.32 X 5 = 6.60 gallons need to purge
NTU = 0.94 @ 7 gallons
EB @ 1600 sampled @ 1610, duplicate @ 1620
MW-5 did not sample

MW-6 did not sample

MW-7 vol = 1.36 x 5 = 6.78 gal need to purge
NTU = 0.08 @ 7 gallons
sampled @ 1320
DMW-8 Vol = 4.2 X 5 = 21 gal purged
NTU = 1.68 @ 21 gallons
sampled @ 1520
2000 left Mayport after moving samples to trailer and packing for shipment on Friday June 2

6-2-95 Friday Partly Cloudy ≈ 85°

Did not complete sampling of MW's 5 + 6 on 6-1-95; therefore, Joe Beauchamp and Dan Plugge arrived @ Bldg 460 @ 10:00
1045 Began purging MW-6 vol=1.39x5=6.94g
MW-6 sampled @ 1115
NTU = 0.40 @ 7 gallons
1130 Begin purging MW-5 vol=1.29x5=6.43g
NTU = 0.23 @ 7 gallons
sampled @ 1140
1250 collected soil samples from SB-2 @ 4' + 6' below grade
1530 FedEx picked up samples Airbill # 4430092671
1600 left Mayport

MW-7 vol = 1.04 × 5 = 5.20 gal purged
NTU = 0.28 @ 5 gal

MW-6 vol. = 1.01 × 5 = 5.05 gal. purged
NTU = 0.48 @ 5.05 gal purged

MW-4 vol = 1.07 × 5 = 5.35 gal. purged
NTU = 18.1 @ 5.35 gal.
~~will filter to sample~~
resampled NTU = 1.37

MW-1 vol. = 1.33 × 5 gal. = 6.65 gals purged
NTU = 0.45

17:50 Finished sampling
MW-1 was sampled for duplicate
Went to ABB trailer to pack samples for Fed Ex.

19:05 Finished packing & started for Fed Ex branch on Verna Rd.

19:50 Arrived at Fed Ex, shipped 3 coolers (A.W.B.# 3218101563

20:30 Arrived back at office

EOD

6-1-95
~~5-31-95~~ D.P.

Thursday Hot, Sunny, + Humid

1200 Arrived @ site 460 - Joe Beauchamp + Dan Plugge proceeded to gauge monitoring wells MW-1 through MW-7 and deep monitoring well MW-8

1215 Gauged MW's

	DTW	TD	Water Column Height
MW-1	4.98	13'	8.02
MW-2	4.95	13'	8.05
MW-3	5.03	13'	7.97
MW-4	5.24	13'	7.76
MW-5	5.43	13'	7.57
MW-6	4.83	13'	8.17
MW-7	5.02	13'	7.98
DMW-8	5.10	30'	24.90

1245 Standardize turbidity meter + begin purging
~~MW-7~~ D.P.

MW-1 Vol = 1.36 × 5 = 6.80 gal purged
NTU = 0.75 @ 7 gallons
sampled @ 1415

MW-2 vol = 1.37 × 5 = 6.85 gal purged
NTU = 0.33 D.P. @ 7 gallons
sampled @ 1345

MW-3 Vol = 1.35 × 5 = 6.75 gal purged
NTU = 0.02 @ 7 gallons
Sampled @ 14:40

5-26-95 (Friday)

730 Arrived @ site 1587. Drillers are cleaning up site and preparing to develop and move drums of soil & water to decon area
Dan Plugge

mw-3	began @	755	5 gallons	- 15 secs
mw-5	" "	"	" "	- 14 secs
MW-7	" "	800	" "	- 30 secs
mw-4	" "	805	" "	- 37 secs
→ hydrocarbon odor				
MW-6	" @	812	" "	- 33 secs

9:45 moved to 1586 to develop MW 10
5 gallons - 60 secs

1015 moved to 460 to develop wells & move drums

MW-05D	began @	10:25	5 gallons - 29 secs
mw-07S	" "	10:40	5 gallons - 49 secs
mw-05S	" "	11:00	5 gallons - 30 secs
MW-06S	" "	11:30	5 gallons - 30 secs

1145 begin moving drums to decon area designated by Mike Jaynes (ABB)

1400 completed drum moving and left site.

5-31-95 Wednesday Hot + Sunny + Humid

930 Mark Joop, Joe Beauchamp, + Dan Plugge arrived on site to begin sampling of site 1587.

1030 Gauged mw's

	DTW	TD	Height ~~Vol~~
MW-1	6.18	14.0	7.82
mw-2	5.80	13.5	7.70
mw-3	4.31	13.0	8.69
mw-4	7.69	14.0	6.31
mw-5	6.33	14.0	7.67
mw-6	8.05	14.0	5.95
mw-7	7.86	14.0	6.14

MW-3 vol. = 1.48 x 5 = 7.40 purged
NTU = 0.28, ~~32~~ @ 5 gal.
3.20 @ 6 gal.
0.95 @ 7.4 gal.

MW-2 vol. = 1.31 x 5 = 6.55 gals purged
NTU = 0.10 @ 5 gal
0.10 @ 6.55 gal.

MW-5 vol. = 1.30 x 5 = 6.50 gal. purged
NTU = .20 @ 4 gal
.20 @ 6 gal

APPENDIX G

AQUIFER CHARACTERISTICS

Estimates of average pore water velocity were obtained using the following formula:

$$V = (K*I)/n$$

where

V = seepage (velocity) (ft/day),
K = hydraulic conductivity (ft/day),
I = hydraulic gradient, and
n = estimated porosity.

Assuming an average hydraulic conductivity value of 6.63 ft/day from MW04 and 5.17 ft/day from MW03, an estimated porosity of 25 percent, and a hydraulic gradient of 0.0006 ft/ft in the northeast direction, the calculated average linear pore water velocities would be as follows:

a: Northeast direction - gradient calculated from wells MW04, MW05, and MW06.

V = (6.63 * 0.0006) / 0.25 and
V = (5.17 * 0.0006) / 0.25
V = 0.016 ft/day to 0.012 ft/day or
V = 5.84 ft/year to 4.38 ft/year

In order to calculate a transmissivity value from the slug test results, the following formula was used:

$$T = K * b$$

where

Tavg = average transmissivity square feet per day,
K = hydraulic conductivity (ft/day), and
b = aquifer test interval (approximate thickness in feet penetrated by well.

Based on the formula, the calculation for T would be as follows:

$$Tavg = (6.63+5.17)/2*13$$

$$Tavg = 76.7 ft^2/day$$

CALCULATION OF HYDRAULIC GRADIENT Contamination Assessment Report Credit Union, Building 460 NAVSTA Mayport, Mayport, Florida			
MONITORING WELL NUMBER	WATER TABLE ELEVATION (6-1-95)	DIFFERENCE BETWEEN ELEVATIONS	DISTANCE BETWEEN MONITORING WELLS
MW-4	6.30	0.08 feet	175 feet
MW-6	6.22		

$$Hydraulic\,Gradient = \frac{Difference\,Elevations(ft)}{Distance\,Monitoring\,Wells(ft)}$$

$$Hydraulic\,Gradient = \frac{0.08}{175} = 0.0005 ft/ft = 0.05 ft/100 ft$$

CALCULATION OF HYDRAULIC GRADIENT Contamination Assessment Report Credit Union, Building 460 NAVSTA Mayport, Mayport, Florida			
MONITORING WELL NUMBER	WATER TABLE ELEVATION (9-1-95)	DIFFERENCE BETWEEN ELEVATIONS	DISTANCE BETWEEN MONITORING WELLS
MW-5	8.94	0.11 feet	170 feet
MW-6	8.83		

$$Hydraulic\,Gradient = \frac{Difference\,Elevations(ft)}{Distance\,Monitoring\,Wells(ft)}$$

$$Hydraulic\,Gradient = \frac{0.11}{170} = 0.0006 ft/ft = 0.06 ft/100 ft$$

Estimates of average pore water velocity were obtained using the following formula:

$$V = (K*I)/n$$

where

V = seepage (velocity) (ft/day),
K = hydraulic conductivity (ft/day),
I = hydraulic gradient, and
n = estimated porosity.

Assuming an average hydraulic conductivity value of 6.63 ft/day from MW04 and 5.17 ft/day from MW03, an estimated porosity of 25 percent, and a hydraulic gradient of 0.0006 ft/ft in the northeast direction, the calculated average linear pore water velocities would be as follows:

a: Northeast direction - gradient calculated from wells MW04, MW05, and MW06.

V = (6.63 * 0.0006) / 0.25 and
V = (5.17 * 0.0006) / 0.25
V = 0.016 ft/day to 0.012 ft/day or
V = 5.84 ft/year to 4.38 ft/year

In order to calculate a transmissivity value from the slug test results, the following formula was used:

$$T = K * b$$

where

Tavg = average transmissivity (ft^2/day),
K = hydraulic conductivity (ft/day), and
b = aquifer test interval (approximate thickness in feet penetrated by well.

Based on the formula, the calculation for T would be as follows:

$$Tavg = (6.63+5.17)/2*13$$

$$Tavg = 76.7 ft^2/day$$

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S
Version 1.10

09/22/95 17:13:39

==

TEST DESCRIPTION

Data set........... MPTCU30.IP
Data set title..... MPTCU03 Run 1

Knowns and Constants:
No. of data points.................. 80
Radius of well casing............... 0.08333
Radius of well...................... 0.3333
Aquifer saturated thickness......... 70
Well screen length.................. 10
Static height of water in well...... 8.01
Log(Re/Rw).......................... 2.013
A, B, C............................. 2.444, 0.397, 0.000

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 4.1578E-003
y0 = -2.0799E-020

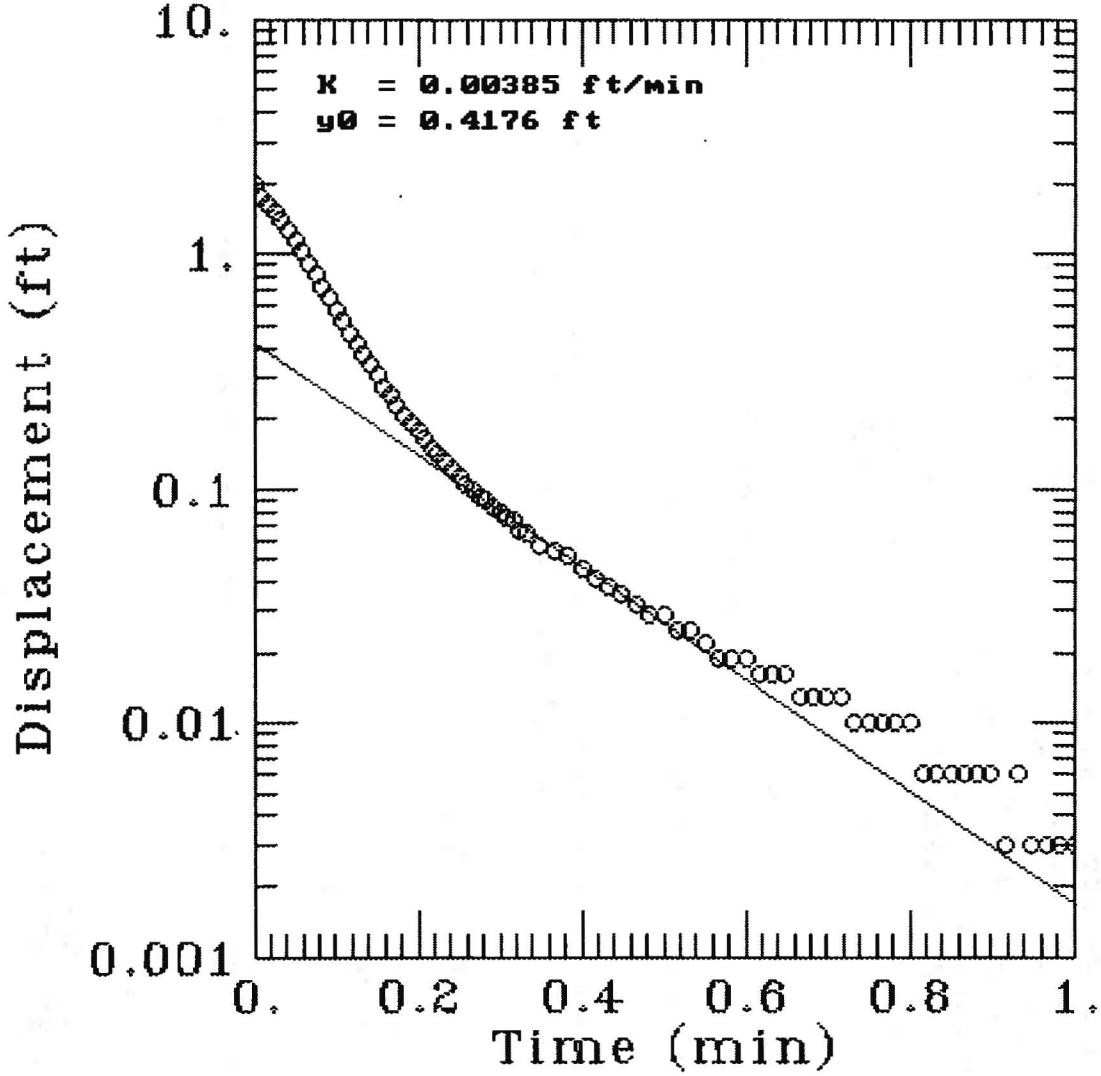
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 3.84956E-003
y0 = 4.17615E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	4.176E-001	1.000E+000	1.695E-003		

MPTCU03 Run 1



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU03
Run 1

0	1.972
0.0083	1.765
0.0166	1.632
0.025	1.515
0.0333	1.391
0.0416	1.264
0.05	1.14
0.0583	1.026
0.0666	0.918
0.075	0.819
0.0833	0.731
0.0916	0.651
0.1	0.581
0.1083	0.518
0.1166	0.464
0.125	0.416
0.1333	0.372
0.1416	0.337
0.15	0.305
0.1583	0.273
0.1666	0.251
0.175	0.226
0.1833	0.207
0.1916	0.191
0.2	0.175
0.2083	0.162
0.2166	0.149
0.225	0.14
0.2333	0.13
0.2416	0.121
0.25	0.111
0.2583	0.105
0.2666	0.099
0.275	0.092
0.2833	0.089
0.2916	0.083
0.3	0.079
0.3083	0.076
0.3166	0.073
0.325	0.067
0.3333	0.064
0.35	0.057
0.3666	0.054
0.3833	0.051
0.4	0.045
0.4166	0.041
0.4333	0.038
0.45	0.035

0.4666	0.032
0.4833	0.029
0.5	0.029
0.5166	0.025
0.5333	0.025
0.55	0.022
0.5666	0.019
0.5833	0.019
0.6	0.019
0.6166	0.016
0.6333	0.016
0.65	0.016
0.6666	0.013
0.6833	0.013
0.7	0.013
0.7166	0.013
0.7333	0.01
0.75	0.01
0.7666	0.01
0.7833	0.01
0.8	0.01
0.8166	0.006
0.8333	0.006
0.85	0.006
0.8666	0.006
0.8833	0.006
0.9	0.006
0.9166	0.003
0.9333	0.006
0.95	0.003
0.9666	0.003
0.9833	0.003
1	0.003
1.2	0
1.4	0
1.6	0
1.8	0
2	0
2.2	0
2.4	0
2.6	0
2.8	0
3	0
3.2	0
3.4	0
3.6	0
3.8	0
4	0
4.2	0
4.4	0
4.6	0

4.8	0
5	0
5.2	0

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S
Version 1.10

09/22/95 17:17:11

==

TEST DESCRIPTION

Data set........... MPTCU31.IP
Data set title..... MPTCU03 Run 2

Knowns and Constants:
- No. of data points.................. 80
- Radius of well casing............... 0.08333
- Radius of well...................... 0.333
- Aquifer saturated thickness......... 70
- Well screen length.................. 10
- Static height of water in well...... 8.01
- Log(Re/Rw).......................... 2.014
- A, B, C............................. 2.445, 0.398, 0.000

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

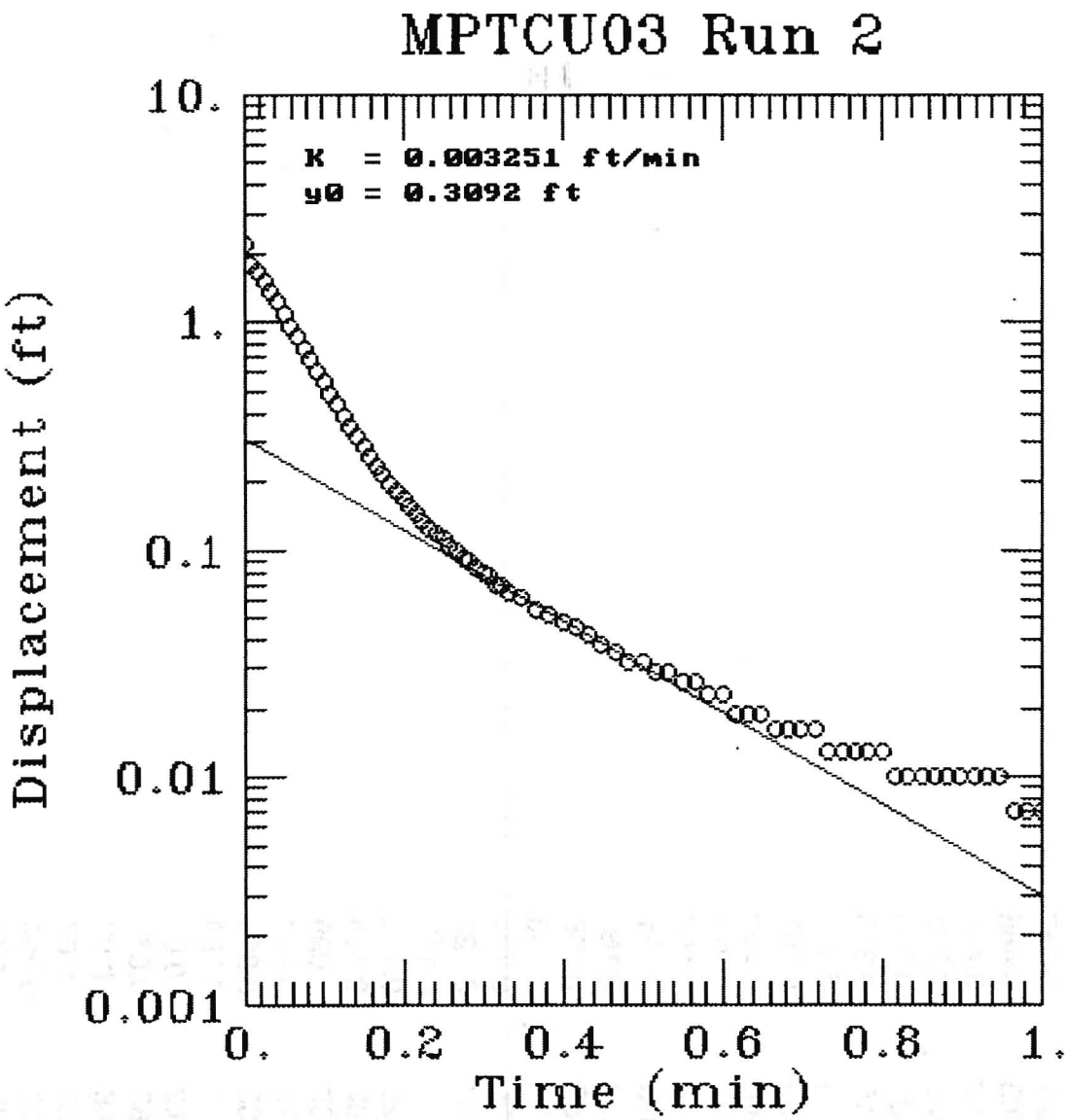
	Estimate
K =	3.5966E-003
y0 =	-2.0799E-020

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 3.25097E-003
y0 = 3.09164E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	3.092E-001	1.000E+000	2.960E-003		



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU03
Run #2

0	2.191
0.0083	1.817
0.0166	1.651
0.025	1.505
0.0333	1.363
0.0416	1.217
0.05	1.086
0.0583	0.966
0.0666	0.861
0.075	0.766
0.0833	0.683
0.0916	0.61
0.1	0.547
0.1083	0.486
0.1166	0.435
0.125	0.391
0.1333	0.353
0.1416	0.318
0.15	0.286
0.1583	0.261
0.1666	0.235
0.175	0.216
0.1833	0.197
0.1916	0.181
0.2	0.169
0.2083	0.156
0.2166	0.143
0.225	0.134
0.2333	0.124
0.2416	0.118
0.25	0.112
0.2583	0.105
0.2666	0.099
0.275	0.092
0.2833	0.089
0.2916	0.083
0.3	0.08
0.3083	0.077
0.3166	0.07
0.325	0.07
0.3333	0.064
0.35	0.061
0.3666	0.054
0.3833	0.051
0.4	0.048
0.4166	0.045
0.4333	0.042
0.45	0.038

0.4666	0.035
0.4833	0.032
0.5	0.032
0.5166	0.029
0.5333	0.029
0.55	0.026
0.5666	0.026
0.5833	0.023
0.6	0.023
0.6166	0.019
0.6333	0.019
0.65	0.019
0.6666	0.016
0.6833	0.016
0.7	0.016
0.7166	0.016
0.7333	0.013
0.75	0.013
0.7666	0.013
0.7833	0.013
0.8	0.013
0.8166	0.01
0.8333	0.01
0.85	0.01
0.8666	0.01
0.8833	0.01
0.9	0.01
0.9166	0.01
0.9333	0.01
0.95	0.01
0.9666	0.007
0.9833	0.007
1	0.007
1.2	0.004
1.4	0.004
1.6	0.004
1.8	0
2	0.004
2.2	0
2.4	0
2.6	0
2.8	0
3	0
3.2	0
3.4	0
3.6	0
3.8	0
4	0
4.2	0
4.4	0
4.6	0

4.8 0

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

Version 1.10

09/22/95 17:22:52

==

TEST DESCRIPTION

Data set........... MPTCU32.IP
Data set title..... MPTCU03 Run 3

Knowns and Constants:
- No. of data points................. 62
- Radius of well casing.............. 0.08333
- Radius of well..................... 0.333
- Aquifer saturated thickness........ 70
- Well screen length................. 10
- Static height of water in well...... 8.01
- Log(Re/Rw)......................... 2.014
- A, B, C............................ 2.445, 0.398, 0.000

==

ANALYTICAL METHOD

uwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

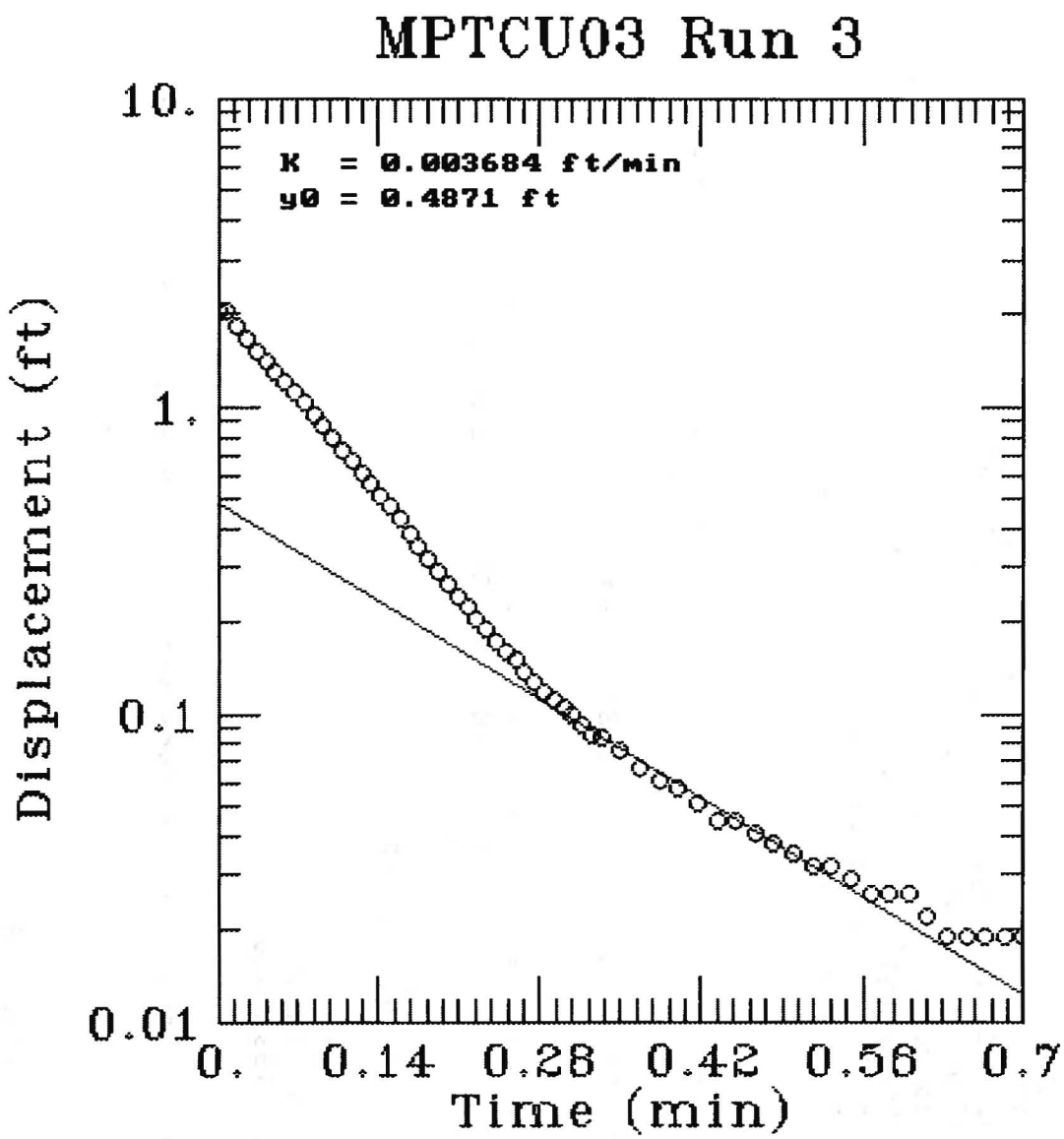
	Estimate
K =	4.9559E-003
y0 =	-2.0799E-020

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 3.68441E-003
y0 = 4.87108E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	4.871E-001	7.000E-001	1.219E-002		



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU03
Run #3

0	−0.165
0.0083	2.023
0.0166	1.813
0.025	1.645
0.0333	1.502
0.0416	1.388
0.05	1.289
0.0583	1.197
0.0666	1.115
0.075	1.032
0.0833	0.943
0.0916	0.864
0.1	0.794
0.1083	0.727
0.1166	0.67
0.125	0.613
0.1333	0.562
0.1416	0.518
0.15	0.473
0.1583	0.429
0.1666	0.388
0.175	0.353
0.1833	0.321
0.1916	0.292
0.2	0.264
0.2083	0.242
0.2166	0.223
0.225	0.203
0.2333	0.188
0.2416	0.172
0.25	0.159
0.2583	0.149
0.2666	0.137
0.275	0.127
0.2833	0.118
0.2916	0.111
0.3	0.105
0.3083	0.099
0.3166	0.092
0.325	0.086
0.3333	0.083
0.35	0.076
0.3666	0.067
0.3833	0.061
0.4	0.057
0.4166	0.051
0.4333	0.045
0.45	0.045

0.4666	0.041
0.4833	0.038
0.5	0.035
0.5166	0.032
0.5333	0.032
0.55	0.029
0.5666	0.026
0.5833	0.026
0.6	0.026
0.6166	0.022
0.6333	0.019
0.65	0.019
0.6666	0.019
0.6833	0.019
0.7	0.019
0.7166	0.016
0.7333	0.016
0.75	0.016
0.7666	0.013
0.7833	0.013
0.8	0.013
0.8166	0.013
0.8333	0.013
0.85	0.013
0.8666	0.01
0.8833	0.01
0.9	0.01
0.9166	0.01
0.9333	0.01
0.95	0.01
0.9666	0.01
0.9833	0.007
1	0.007
1.2	0.007
1.4	0.003
1.6	0.003
1.8	0.003
2	0.003
2.2	0.003
2.4	0.003
2.6	0.003
2.8	0
3	0.003
3.2	0.003
3.4	0
3.6	0
3.8	0
4	0
4.2	0
4.4	0

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

Version 1.10

09/22/95 12:16:03

==

TEST DESCRIPTION

Data set........... MPTCU40.IP
Data set title..... MPTCU04 Run 1

Knowns and Constants:
- No. of data points.................. 62
- Radius of well casing............... 0.08333
- Radius of well...................... 0.333
- Aquifer saturated thickness......... 70
- Well screen length.................. 10
- Static height of water in well...... 23
- Log(Re/Rw).......................... 2.459
- A, B, C............................. 2.445, 0.398, 0.000

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	5.5746E-003
y0 =	6.3604E-268

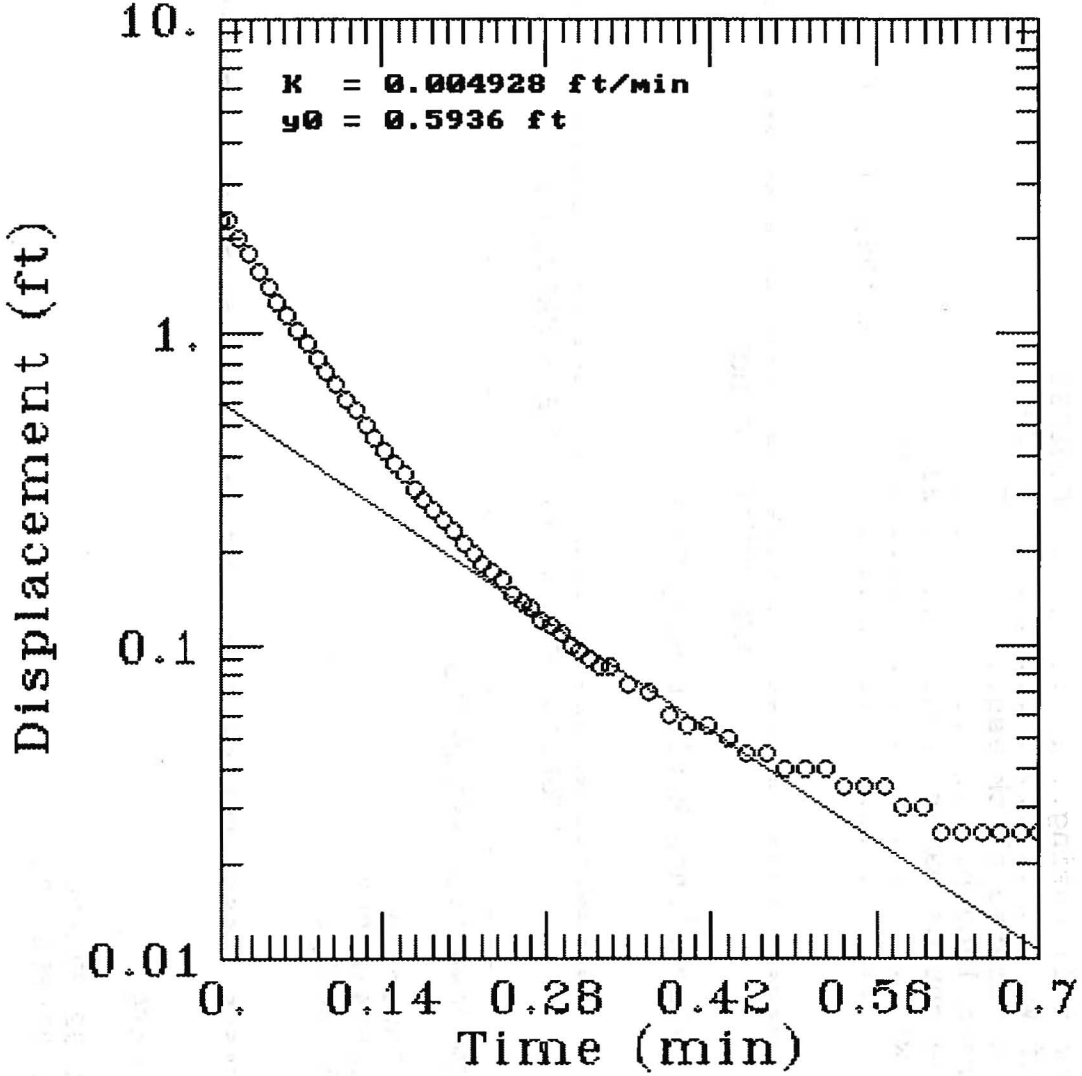
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 4.92777E-003
y0 = 5.93585E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	5.936E-001	7.000E-001	1.044E-002		

MPTCU04 Run 1



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU04
Run #1

0	−1.089
0.0083	2.283
0.0166	2.001
0.025	1.769
0.0333	1.577
0.0416	1.406
0.05	1.255
0.0583	1.134
0.0666	1.018
0.075	0.917
0.0833	0.826
0.0916	0.746
0.1	0.675
0.1083	0.61
0.1166	0.559
0.125	0.504
0.1333	0.458
0.1416	0.418
0.15	0.378
0.1583	0.352
0.1666	0.317
0.175	0.292
0.1833	0.272
0.1916	0.252
0.2	0.231
0.2083	0.211
0.2166	0.196
0.225	0.181
0.2333	0.171
0.2416	0.161
0.25	0.146
0.2583	0.136
0.2666	0.131
0.275	0.121
0.2833	0.116
0.2916	0.11
0.3	0.1
0.3083	0.095
0.3166	0.09
0.325	0.085
0.3333	0.085
0.35	0.075
0.3666	0.07
0.3833	0.06
0.4	0.055
0.4166	0.055
0.4333	0.05
0.45	0.045

0.4666	0.045
0.4833	0.04
0.5	0.04
0.5166	0.04
0.5333	0.035
0.55	0.035
0.5666	0.035
0.5833	0.03
0.6	0.03
0.6166	0.025
0.6333	0.025
0.65	0.025
0.6666	0.025
0.6833	0.025
0.7	0.025
0.7166	0.02
0.7333	0.02
0.75	0.02
0.7666	0.015
0.7833	0.015
0.8	0.02
0.8166	0.015
0.8333	0.015
0.85	0.015
0.8666	0.015
0.8833	0.015
0.9	0.01
0.9166	0.01
0.9333	0.01
0.95	0.01
0.9666	0.01
0.9833	0.01
1	0.01
1.2	0.01
1.4	0.005
1.6	0
1.8	0.005
2	0.005
2.2	0
2.4	0
2.6	0
2.8	0
3	0
3.2	0
3.4	0
3.6	0
3.8	−0.005
4	0
4.2	0

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S
Version 1.10

09/22/95 17:46:11

==

TEST DESCRIPTION

Data set........... MPTCU41.IP
Data set title..... MPTCU04 Run 2

Knowns and Constants:
No. of data points................... 124
Radius of well casing................ 0.08333
Radius of well....................... 0.333
Aquifer saturated thickness......... 70
Well screen length................... 10
Static height of water in well...... 7.88
Log(Re/Rw)........................... 2.007
A, B, C.............................. 2.445, 0.398, 0.000

==

ANALYTICAL METHOD

uwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

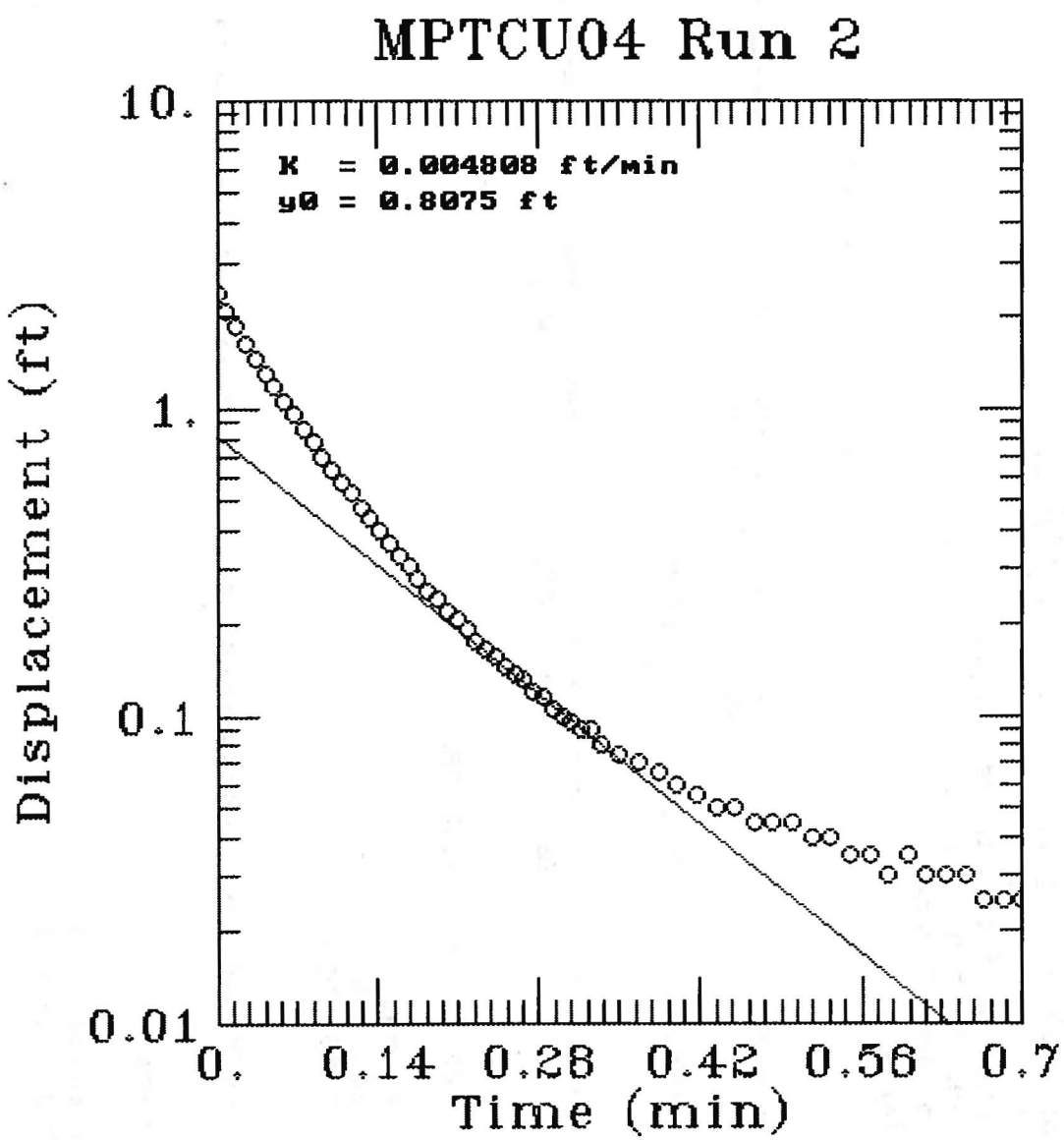
	Estimate
K =	4.3628E-003
y0 =	-2.0799E-020

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 4.80754E-003
y0 = 8.07535E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	8.075E-001	7.000E-001	6.450E-003		



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU04
Run #2

0	2.384
0.0083	2.082
0.0166	1.845
0.025	1.638
0.0333	1.461
0.0416	1.305
0.05	1.174
0.0583	1.058
0.0666	0.952
0.075	0.857
0.0833	0.776
0.0916	0.7
0.1	0.635
0.1083	0.579
0.1166	0.529
0.125	0.478
0.1333	0.438
0.1416	0.398
0.15	0.363
0.1583	0.332
0.1666	0.307
0.175	0.282
0.1833	0.257
0.1916	0.242
0.2	0.221
0.2083	0.206
0.2166	0.191
0.225	0.176
0.2333	0.166
0.2416	0.156
0.25	0.146
0.2583	0.136
0.2666	0.131
0.275	0.121
0.2833	0.115
0.2916	0.105
0.3	0.1
0.3083	0.095
0.3166	0.09
0.325	0.09
0.3333	0.08
0.35	0.075
0.3666	0.07
0.3833	0.065
0.4	0.06
0.4166	0.055
0.4333	0.05
0.45	0.05

0.4666	0.045
0.4833	0.045
0.5	0.045
0.5166	0.04
0.5333	0.04
0.55	0.035
0.5666	0.035
0.5833	0.03
0.6	0.035
0.6166	0.03
0.6333	0.03
0.65	0.03
0.6666	0.025
0.6833	0.025
0.7	0.025
0.7166	0.025
0.7333	0.025
0.75	0.02
0.7666	0.02
0.7833	0.02
0.8	0.02
0.8166	0.015
0.8333	0.02
0.85	0.02
0.8666	0.02
0.8833	0.015
0.9	0.02
0.9166	0.015
0.9333	0.015
0.95	0.015
0.9666	0.015
0.9833	0.015
1	0.015
1.2	0.01
1.4	0.01
1.6	0.005
1.8	0.005
2	0.005
2.2	0.005
2.4	0.005
2.6	0.005
2.8	0
3	0
3.2	0.005
3.4	0
3.6	0
3.8	0
4	0

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

Version 1.10

09/22/95 12:31:19

==

TEST DESCRIPTION

Data set........... MPTCU42.IP
Data set title..... MPTCU04 Run 3

Knowns and Constants:

- No. of data points.................. 62
- Radius of well casing............... 0.08333
- Radius of well...................... 0.333
- Aquifer saturated thickness......... 70
- Well screen length.................. 10
- Static height of water in well...... 7.88
- Log(Re/Rw).......................... 2.007
- A, B, C............................. 2.445, 0.398, 0.000

==

ANALYTICAL METHOD

uwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

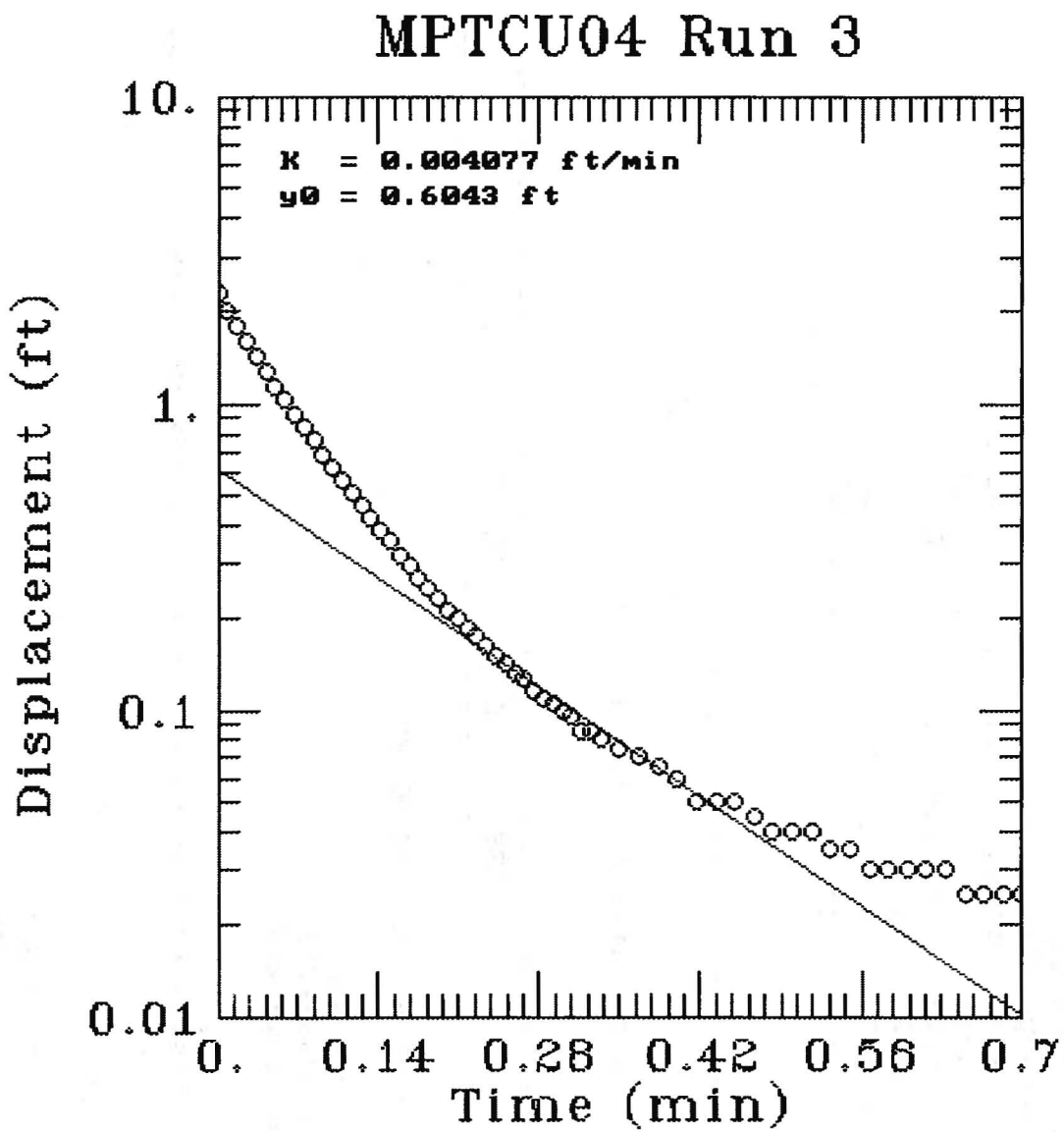
	Estimate
K =	4.3893E-003
y0 =	6.3604E-268

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 4.07720E-003
y0 = 6.04319E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	6.043E-001	7.000E-001	1.005E-002		



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

MPTCU04
Run #3

0	2.283
0.0083	2.006
0.0166	1.784
0.025	1.582
0.0333	1.416
0.0416	1.27
0.05	1.139
0.0583	1.028
0.0666	0.922
0.075	0.836
0.0833	0.756
0.0916	0.685
0.1	0.62
0.1083	0.564
0.1166	0.509
0.125	0.463
0.1333	0.423
0.1416	0.388
0.15	0.358
0.1583	0.322
0.1666	0.297
0.175	0.272
0.1833	0.252
0.1916	0.231
0.2	0.211
0.2083	0.201
0.2166	0.186
0.225	0.176
0.2333	0.161
0.2416	0.151
0.25	0.141
0.2583	0.131
0.2666	0.126
0.275	0.116
0.2833	0.11
0.2916	0.105
0.3	0.1
0.3083	0.095
0.3166	0.085
0.325	0.085
0.3333	0.08
0.35	0.075
0.3666	0.07
0.3833	0.065
0.4	0.06
0.4166	0.05
0.4333	0.05
0.45	0.05

0.4666	0.045
0.4833	0.04
0.5	0.04
0.5166	0.04
0.5333	0.035
0.55	0.035
0.5666	0.03
0.5833	0.03
0.6	0.03
0.6166	0.03
0.6333	0.03
0.65	0,025
0.6666	0.025
0.6833	0.025
0.7	0.025
0.7166	0.025
0.7333	0.02
0.75	0.02
0.7666	0.02
0.7833	0.02
0.8	0.02
0.8166	0.02
0.8333	0.02
0.85	0.015
0.8666	0.015
0.8833	0.015
0.9	0.015
0.9166	0.015
0.9333	0.015
0.95	0.015
0.9666	0.015
0.9833	0.015
1	0.015
1.2	0.01
1.4	0.01
1.6	0.005
1.8	0.005
2	0.005
2.2	0.005
2.4	0.005
2.6	0.005
2.8	0
3	0
3.2	0
3.4	0
3.6	0
3.8	0
4	0.005
4.2	0
4.4	0
4.6	0

4.8 0