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CONTAMINATION ASSESSMENT REPORT SITE 21 SLUDGE AT FUEL TANKS AREA NAS PENSACOLA FL

06/26/1997

NAVAL PUBLIC WORKS CENTER

CONTAMINATION ASSESSMENT REPORT

SITE 21, SLUDGE AT FUEL TANKS AREA
NAVAL AIR STATION
PENSACOLA, FLORIDA

PREPARED BY:

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TABLE OF CONTENTS

Contamination Assessment Report
Site 21, Sludge At Fuel Tanks Area
Naval Air Station
Pensacola, Florida

Section	Title	Page No.
1.0	**INTRODUCTION**	
	1.1 Purpose	1
	1.2 Site Location and Area of Investigation	1
	1.3 Site History and Operations	1
	1.4 Initial Remedial Action	5
	1.5 Results of Previous Investigations	5
	1.6 Regional Geology and Hydrogeology	10
	1.7 Well Survey	14
2.0	**SITE ASSESSMENT**	
	2.1 Soil Boring and Monitoring Well Construction Details	14
	2.2 Groundwater Flow Direction	18
	2.3 Groundwater Flow Rate	18
	2.4 Soil Assessment	18
	2.5 Site Specific Hydrogeology	22
	2.6 Surface Water Assessment	22
	2.7 Groundwater Quality Assessment	22
3.0	**CONCLUSIONS AND RECOMMENDATIONS**	
	3.1 Conclusions	43
	3.2 Recommendations	50
4.0	**PROFESSIONAL REVIEW CERTIFICATION**	52
5.0	**REFERENCES**	53

APPENDICES

LIST OF FIGURES

Contamination Assessment Report
Site 21, Sludge At Fuel Tanks Area
Naval Air Station
Pensacola, Florida

Figure	Title	Page No.
1-1	Regional Location Map of Project	2
1-2	Site Location Map	3
1-3	Site Specific Map	4
1-4	Soil Boring and Temporary Monitoring Well Locations Soil Borings B001 thru B018 Temporary Monitoring Wells TW014 thru TW018	6
1-5	Soil Headspace Survey Map NAS Pensacola, Site 21	11
2-1	Soil Boring Location Map Soil Borings SB-1 thru SB-113	16
2-2	Monitoring Well Locations Monitoring Wells MW-1 thru MW-25	17
2-3	Groundwater Flow Direction Map	21
2-4	Total Naphthalene Contamination Distribution Map	44
2-5	TPH Contamination Distribution Map	48
2-6	Lead Contamination Distribution Map	49

LIST OF TABLES

Contamination Assessment Report
Site 21, Sludge At Fuel Tanks Area
Naval Air Station
Pensacola, Florida

Table	Title	Page No.
1-1	Summary of Analytical Screening Results for Soil Samples from Soil Borings B001 thru B018	7
1-2	Summary of Analytical Screening Results of Groundwater Samples for Temporary Monitoring Wells TW014 thru TW018	9
1-3	Construction Details of Water-Supply Wells	15
2-1	Top of Casing and Groundwater Elevations Monitoring Wells MW-1 thru MW-25	19
2-2	Volatile Organic Compounds Concentrations in Soil Samples from SB-1 thru SB-113 and Monitoring Wells MW-1 thru MW-25	23
2-3	Summary of Volatile Organic Compounds Analytical Results for Groundwater Samples from Monitoring Wells MW-1 thru MW-25	39
2-4	Summary of PAHs Analytical Results for Groundwater Samples from Monitoring Wells MW-1 thru MW-25	41
2-5	Summary of TPH, Lead, and EDB Analytical Results for Groundwater Samples Monitoring Wells MW-1 thru MW-25	45

LIST OF APPENDICES

Contamination Assessment Report
Site 21, Sludge At Fuel Tanks Area
Naval Air Station
Pensacola, Florida

Appendices	Title	Page No.
APPENDIX A:	Monitoring Well Construction Diagram	
APPENDIX B:	Groundwater Flow Velocity Calculations	
APPENDIX C:	Lithologic Logs	
APPENDIX D:	Soil and Groundwater Analytical Results	
APPENDIX E.:	Tidal Fluctuation Data	

1.0 INTRODUCTION

1.1 PURPOSE

The Navy Public Works Center, Naval Air Station, Pensacola, Florida, was retained by Southern Division Navy Facilities Engineering Command (SOUTHNAVFACENGCOM) to investigate potential hydrocarbon contamination and conduct a contamination assessment and remediation plan (if warranted) at Site 21, the Sludge at Fuel Tanks Area, located at Pensacola Naval Air Station (NASP), Pensacola, Florida in December 1994.

The site was originally put under the Installation Restoration Program (IR) for NAS Pensacola, and designated as Site 21. The portion of IR Site 21 north of Radford Boulevard was removed from the IR Program list in July 1994 when only petroleum constituents were found at this location. The northern portion of IR Site 21 is designated as the Sludge At Fuel Tank Area herein.

The findings and conclusions of the field investigation for the Contamination Assessment for Site 21, Sludge At Fuel Tanks Area, are presented herein.

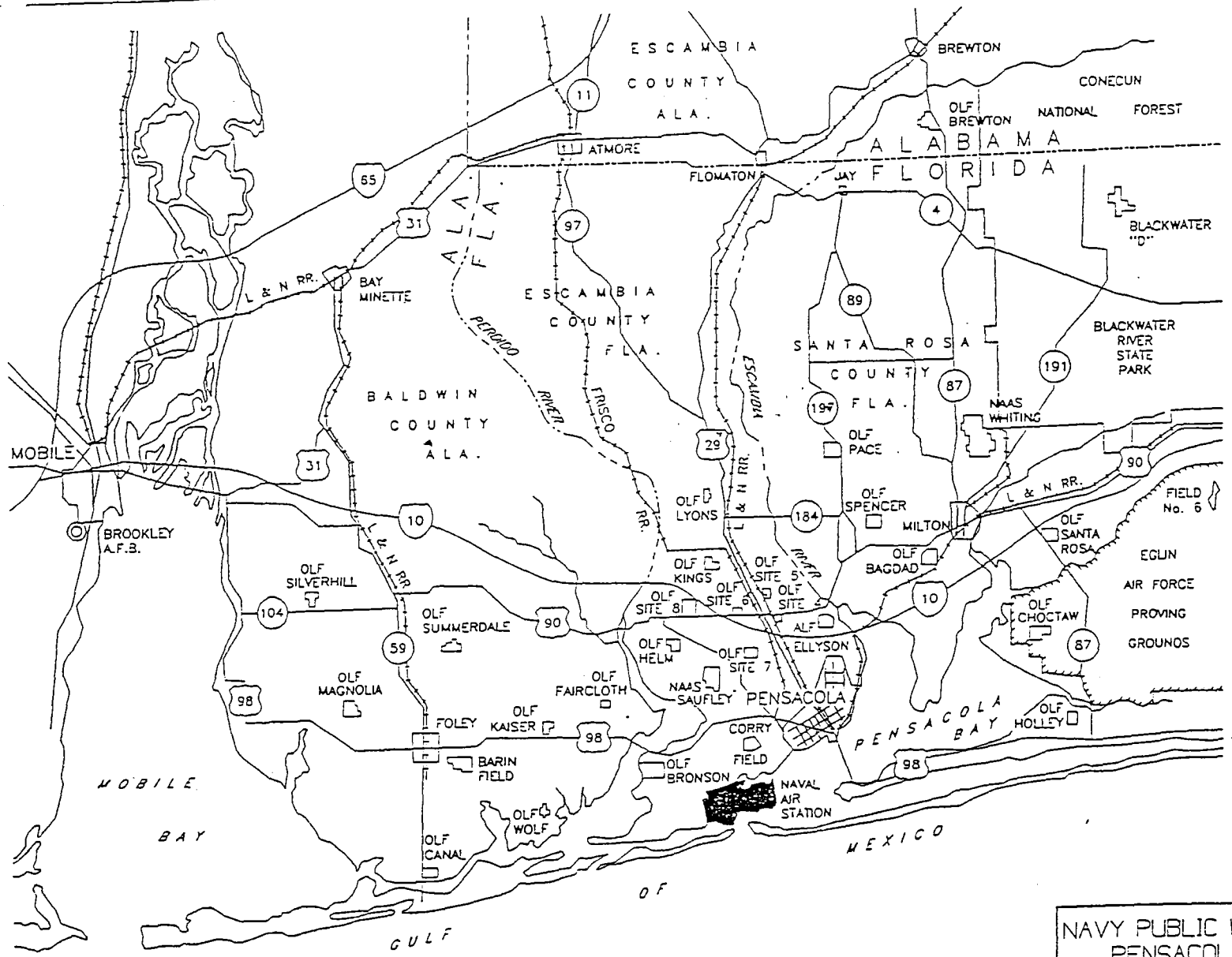
1.2 SITE LOCATION AND AREA OF INVESTIGATION

The Pensacola Naval Air Station (NASP) is approximately 5,800-acres and is located on a peninsula bounded on the east and south by Pensacola Bay and Big Lagoon and on the north by Bayou Grande (Figure 1-1). The Sludge At Fuel Tanks Area is located within the confines of NAS Pensacola in Section 1, Range 30W, Township 3S. The site is located approximately 400 feet north of Pensacola Bay. Former sludge disposal areas were previously located around the perimeters of nine aviation gasoline (AVGAS) aboveground storage tanks which were removed at an unknown date in the past. The tanks were located near the intersection of Duncan Road and Radford Boulevard. Site location maps which show the site in relation to surrounding features are included as Figures 1-2 and 1-3.

The site is primarily unpaved. The site is bordered on the north by the Bachelor's Enlisted Quarters (Buildings 3468, 3469, 3470 and 3472). To the west, east, and south, the site is bordered by paved areas consisting of Duncan Road, a parking lot, and Radford Boulevard, respectfully. The portion of Site 21 south of Radford Boulevard has been removed from the NAS IR Program and was reclassified as a petroleum only contaminated site.

1.3 SITE HISTORY AND OPERATIONS

The site is a former sludge disposal area located around the perimeter of five aviation gasoline (AVGAS) aboveground storage tanks (ASTs) near the intersection of Duncan Road and Radford Boulevard (Figure 1-3). These tanks were in use from the 1940's through the 1960's and annual cleaning and sludge removal were performed from 1951 to 1967 (NEESA 1983). The five tanks north of Radford Boulevard each had a capacity of 90,000 gallons (tank numbers 638, 640, 641, and 402). The exact date the tanks were removed is unknown. All the tanks were presumably asphalt-coated steel, each with a concrete secondary containment

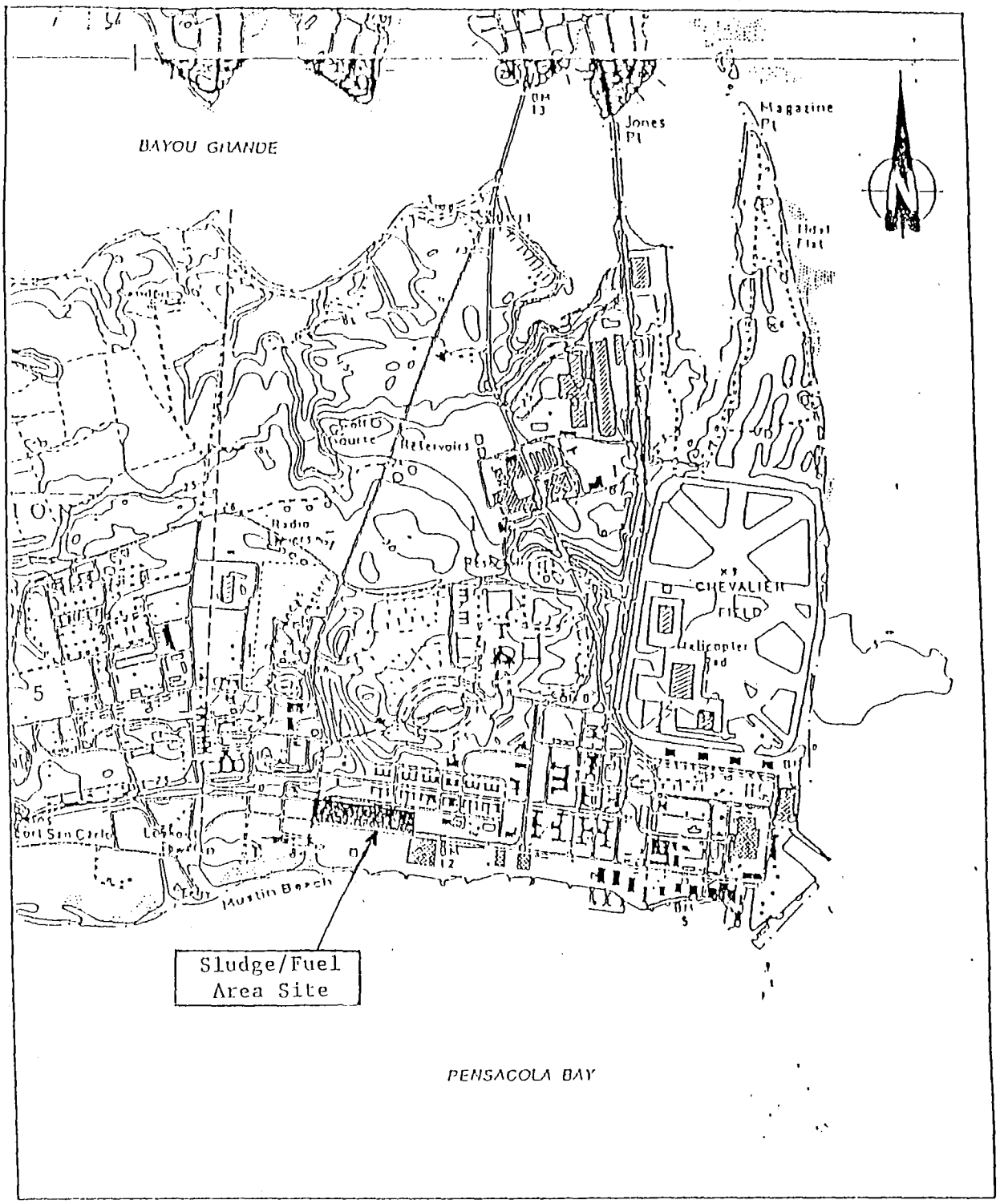


NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA

SCALE: 1" = 18 MI DATE: 10/18/94	FIGURE 1-1	DRAWN BY: GAC DWG. NO.: BORDER REVISED BY:

REGIONAL LOCATION MAP OF PROJECT

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangles: Fort Barrancas, FL 1970 and West Pensacola, FL 1970, Photorevised 1987

SCALE

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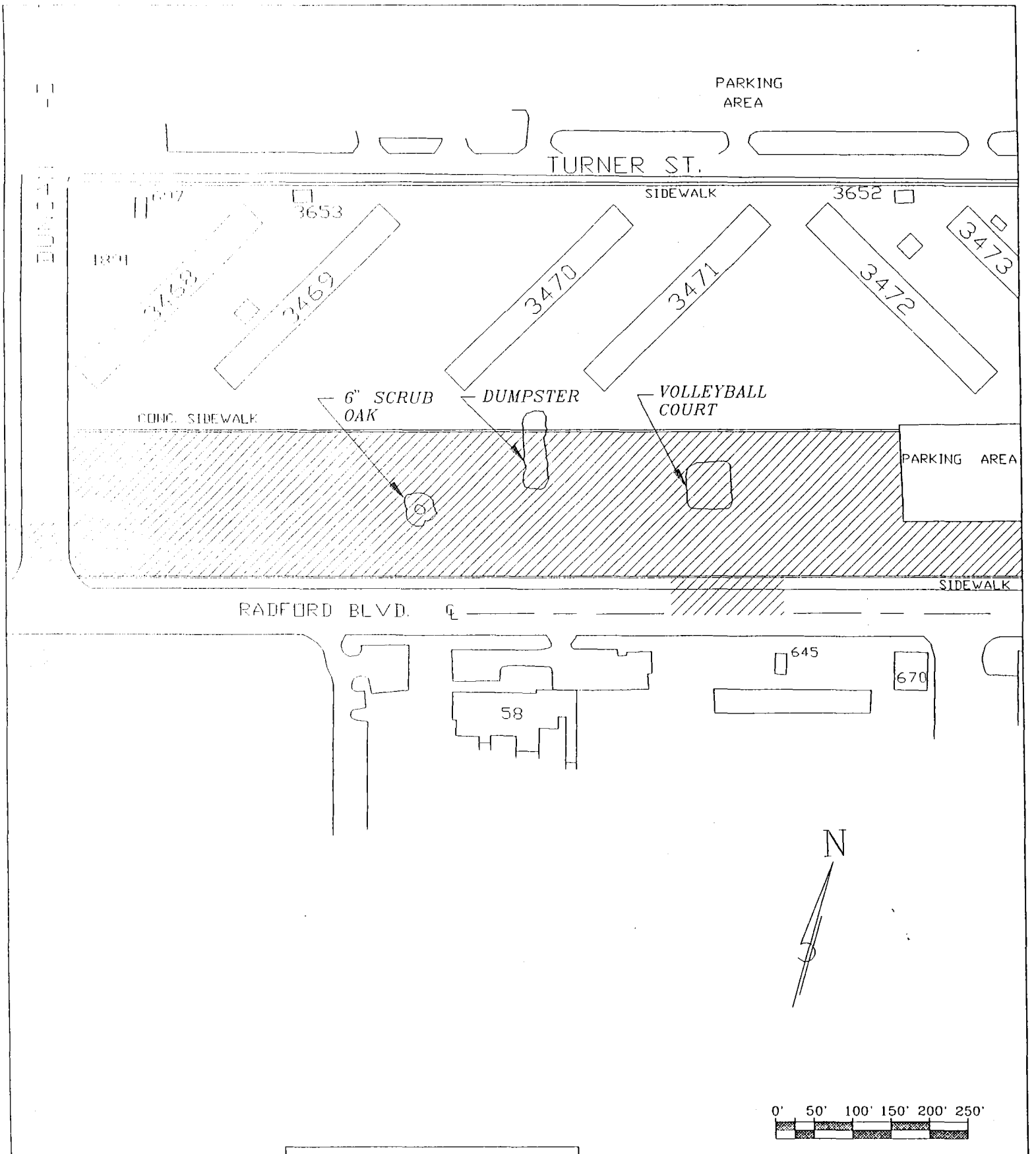
0 1000 2000 3000 4000 5000 FEET

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: 1" = 20' DATE: 10/31/95	FIGURE 1-2	LOCATION: GVC AS TO: SITE REVISED BY:
SITE LOCATION MAP-NAS PENSACOLA SLUDGE/FUEL SITE		
NOTE: UNDERGROUND TOPOL, PIPELINE, AND UTILITIES NOT PRESENT ON SITE		



LEGEND

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SITE 21 VICINITY

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 1-3	DRAWN BY: DWG. NO: REVISED BY:
SITE SPECIFIC MAP SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

wall and a surrounding wire fence.

From the 1940's to the 1960's, tank-bottom sludge was removed from the five AVGAS aboveground storage tanks and were disposed of in the surrounding soils. An estimated 360 cubic yards of sludge was disposed of around the perimeter of the tanks during that twenty year period, creating a doughnut-shaped disposal site with an area of approximately 1,650 square feet and an outside diameter of approximately 50 feet around each tank (NEESA 1983).

1.4 INITIAL REMEDIAL ACTION

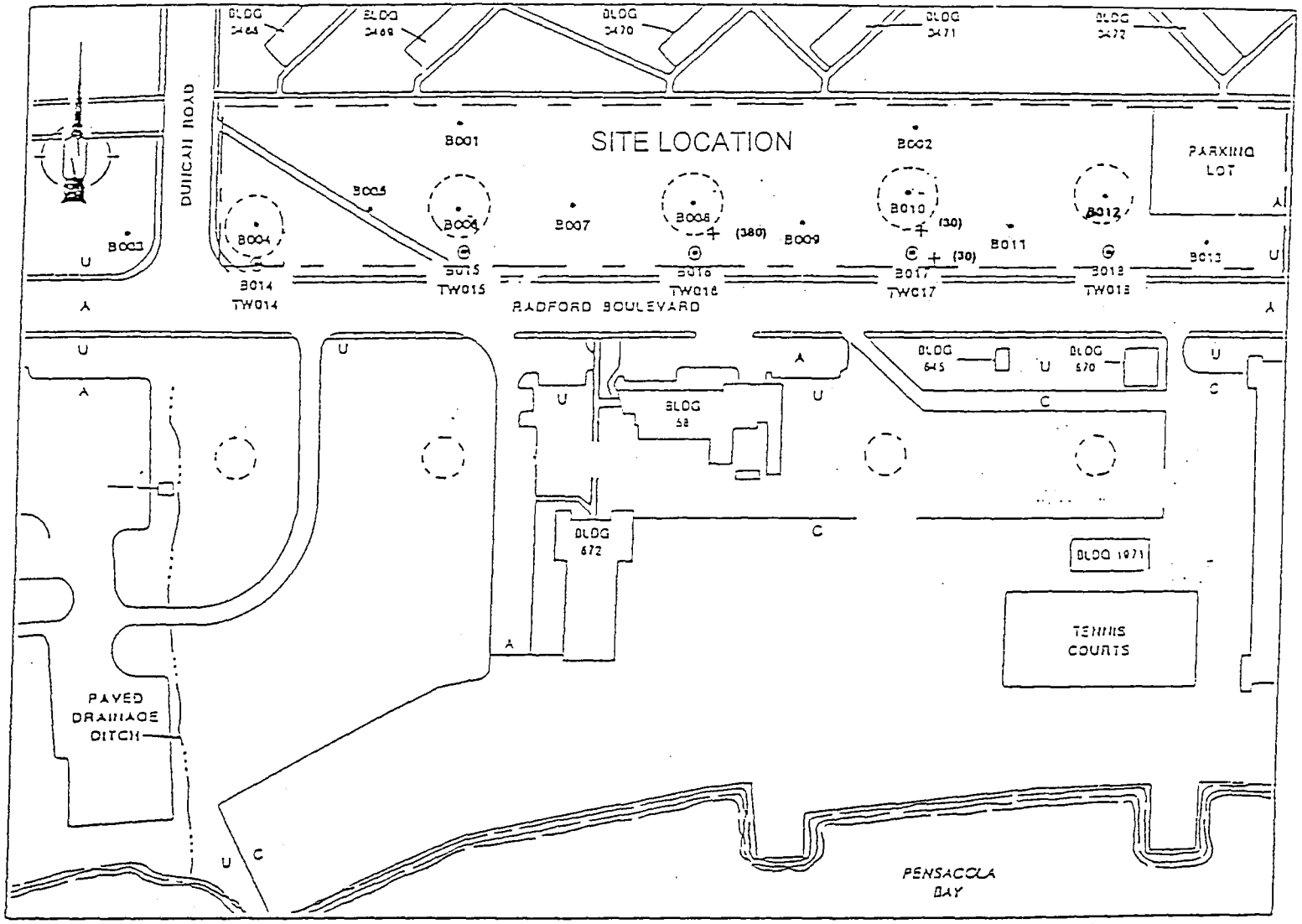
No initial remedial action activities were performed at the site.

1.5 RESULTS OF PREVIOUS INVESTIGATIONS

Phase I IR fieldwork was conducted at IR Site 21, north of Radford Boulevard, Sludge At Fuel Tanks Area from April 1991 to August 1991 by Ecology and Environment, Inc. Fieldwork included collecting 18 soil borings, installing 5 temporary monitoring wells, and conducting a soil headspace survey. See Figure 1-4 for location of the soil borings (B001 thru B018) and the temporary monitoring wells (TW014 thru TW018).

Composite soil samples were collected from each of the 18 soil borings completed at Site 21, Sludge At Fuel Tanks Area, using either hand-operated bucket augers or a solid-stem auger powered by a drill rig. The soil samples were analyzed for heavy metals, PAHs, TPHs, VOAs, and phenols as trichlorophenol. A summary of the results is shown in Table 1-1. Concentrations of arsenic, chromium, zinc, lead, cadmium, nickel, copper, and silver occurred infrequently and at isolated locations in the soil samples collected at the site. No metal concentrations in the soil samples exceeded the RCRA PCALs. No RCRA PCAL was established for lead. TPHs were detected in soil samples collected from seven of the 18 soil borings at the site. Soil borings collected from B007, B008, B010, B011, B012, B013 and B014 indicated concentrations of TPH at levels of 18 ppm, 12 ppm, 32 ppm, 17 ppm, 19 ppm, 10 ppm, and 110 ppm, respectfully, which exceeded the FDER target level of 5 ppm. No VOAs were detected in the soil samples collected from the Sludge At Fuel Tanks Area site. An elevated PAH concentration of 3,200 ppb was detected in the soil sample collected from soil sample B003A. No polychlorinated biphenyls (PCBs) or pesticides were detected in any of the soil samples collected at the Sludge At Fuel Tanks Area site.

Temporary, stainless steel monitoring wells, designated as TW14 thru TW18, were installed at 5 of the 18 borings (see Figure 1-4). Each well was constructed with 5 feet of 0.01-inch-slot, continuously wound, stainless steel screen, and installed to a depth that allowed the well screen to bracket the water table. The wells were installed using a solid-stem auger powered by a drill rig or stainless steel hand auger. Groundwater samples were collected from the temporary monitoring wells and analyzed for the screening parameters listed in Table 1-2. Concentrations of chromium, zinc, lead, and copper were detected in the groundwater samples collected from temporary monitoring wells TW014 thru TW018. Chromium was detected in the groundwater samples from temporary monitoring wells TW014 and TW015 at levels of



KEY:

- Former Aboveground Storage Tank (Approximate Location)
- BLDG 1971 — Building
- A — Asphalt-Paved Area
- C — Concrete-Paved Area
- U — Unpaved Area
- Soil Boring
- B001 — Soil Boring Number
- Temporary Monitoring Well
- TW001 — Temporary Monitoring Well Number
- Site Location Boundary
- (50) — Elevated Soil Headspace OVA Reading (ppm organic vapors-less methane)
- + — Elevated Soil Headspace OVA Reading (non-methane) Location

SCALE: 0 — 200 — 400 FEET

NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA

SCALE:	FIGURE 1-4	DRAWN BY: GAC
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SOIL BORING AND TEMPORARY WELL LOCATIONS-NAS PENSACOLA SLUDGE/FUEL SITE

CLIENT: ENVIRONMENTAL DEPT. TYNDALL AIR FORCE BASE PANAMA CITY, FLORIDA

TABLE 1-1
SUMMARY OF ANALYTICAL SCREENING RESULTS FOR SOIL SAMPLES
B001 THRU B018
NAVAL AIR STATION PENSACOLA
SITE 21, SLUDGE AT FUEL TANKS AREA

PARAMETER	SOIL BORING NUMBER								
	B001	B002	B003	B004	B005	B006	B007	B008	B009
Arsenic (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	9.6	BDL
Chromium (ppm)	BDL	3.9	2.6	BDL	1.6	BDL	BDL	BDL	1.2
Zinc (ppm)	BDL	7.9	BDL	BDL	5.9	BDL	2.6	5.8	2.3
Lead (ppm)	BDL	43	BDL	BDL	BDL	BDL	11	BDL	BDL
Cadmium (ppm)	BDL	1.1	BDL	BDL	BDL	BDL	0.7	BDL	BDL
Nickel (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Copper (ppm)	BDL	BDL	BDL	BDL	6.1	BDL	BDL	BDL	BDL
Silver (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TPHs (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	18	12	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total PAHs as Benzo-a-pyrene	BDL	BDL	3,200	BDL	BDL	BDL	BDL	BDL	BDL
Phenols as Trichlorophenol	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

NOTES: Soil samples from B001A thru B0018A were collected during the Phase I investigation by Ecology and Environment, Inc. from April to August 1991.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.

TABLE 1-1 (CONT.)

PARAMETER	SOIL BORING NUMBER								
	B010	B011	B012	B013	B014	B015	B016	B017	B018
Arsenic (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium (ppm)	BDL	2.2	BDL	BDL	1.4	BDL	BDL	1.4	BDL
Zinc (ppm)	6.8	14	5.6	7.3	46	BDL	50	14	8.6
Lead (ppm)	64	79	11	11	56	4.0	25	56	42
Cadmium (ppm)	0.59	0.72	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nickel (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	4.5	BDL	BDL
Copper (ppm)	BDL	BDL	BDL	BDL	4.3	BDL	BDL	2.8	BDL
Silver (ppm)	BDL	BDL	BDL	BDL	BDL	BDL	1.1	BDL	BDL
TPHs (ppm)	32	17	19	10	110	BDL	BDL	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total PAHs as Benzo-a-pyrene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenols as Trichlorophenol	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

NOTES: Soil samples from B001A thru B0018A were collected during the Phase I investigation by Ecology and Environment, Inc. from April to August 1991.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.

TABLE 1-2
SUMMARY OF ANALYTICAL SCREENING RESULTS FOR GROUNDWATER SAMPLES COLLECTED FROM TEMPORARY MONITORING WELLS TW014 THRU TW018
NAVAL AIR STATION PENSACOLA
SITE 21, SLUDGE AT FUEL TANKS AREA

PARAMETER	SAMPLE WELL NUMBER				
	TW014	TW015	TW016	TW017	TW018
Chromium	18	11	BDL	BDL	BDL
Zinc	120	220	780	3,600	170
Lead	320	110	240	1,000	BDL
Copper	70	31	58	98	BDL
TPHs (ppm)	BDL	1.9	BDL	6.5	BDL
Toluene	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL
Total Xylenes	BDL	BDL	BDL	30	BDL
1,1-Dichloroethene	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	BDL	BDL	BDL	BDL	BDL
Trans 1,2-Dichloroethene	BDL	BDL	BDL	BDL	BDL
Total PAHs as Benzo-a-pyrene	BDL	BDL	BDL	BDL	BDL
Phenols as Trichlorophenol	BDL	170	BDL	BDL	(L)

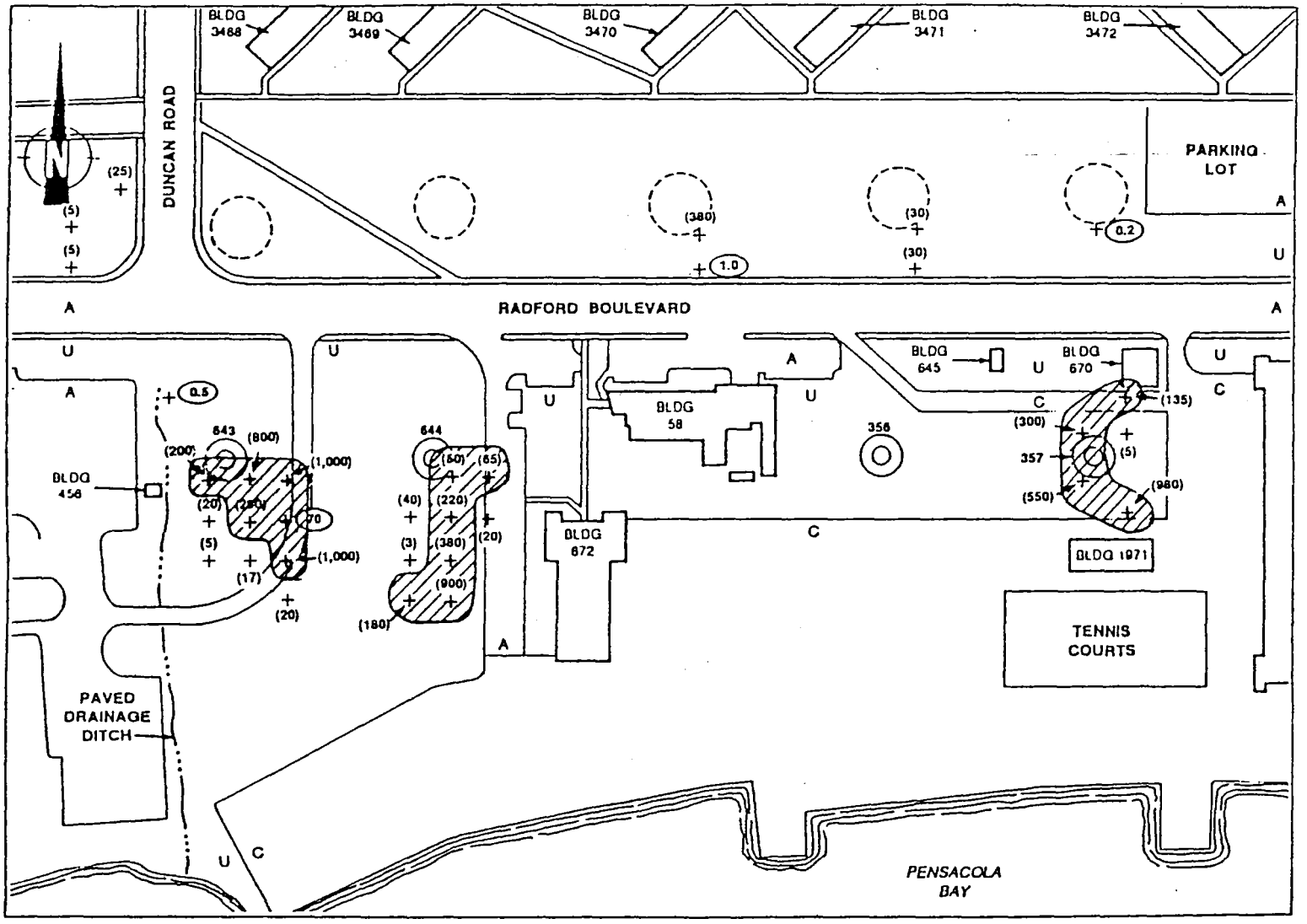
NOTES: Groundwater samples from TW014 thru TW018 were collected during the Phase I investigation by Ecology and Environment, Inc. from April to August 1991.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
(L) = Present below stated detection limit.

18 ppb and 11 ppb, respectfully, which did not exceed the Florida Primary Drinking Water Standard (FPDWs) of 50 ppb (FDER 1991). Zinc was detected in the groundwater samples from temporary monitoring wells TW014 thru TW018 at levels of 120 ppb, 220 ppb, 780 ppb, 3,600 ppb, and 170 ppb, respectfully. Lead was detected in the groundwater samples from temporary monitoring wells TW014 thru TW017 at levels of 320 ppb, 110 ppb, 240 ppb, and 1,000 ppb, respectfully, which exceeded the Florida Primary Drinking Water Standard (FPDWs) of 50 ppb (FDER 1991). Copper was detected in the groundwater samples from temporary wells TW014 thru TW017 at levels of 70 ppb, 31 ppb, 58 ppb, and 98 ppb, respectfully, which did not exceed the Florida Primary Drinking Water Standard (FPDWs) of 1,000 ppb for copper (FDER 1991). TPHs were detected in the groundwater samples from temporary monitoring wells TW015 and TW017 at levels of 1.9 ppm and 6.5 ppm, respectfully. Temporary monitoring well TWO17 exceeded the FDEP target cleanup level of 5 ppm for petroleum-contaminated groundwater (FDER 1990B). Total xylenes were detected in the groundwater sample from temporary monitoring well TW017 at a contamination level of 30 ppb which was below the FDEP target level of 50 ppb for Total VOAs. No VOAs were detected in the groundwater samples from temporary monitoring wells TW014 thru TW016 or TW018. No PAHs were detected in the groundwater samples collected from temporary monitoring well TW0-14 thru TW018. Phenol was detected in the groundwater sample collected from temporary monitoring well TW015 at a contamination level of 170 ppb. Phenol was not detected in any of the other temporary wells at this site.

A soil headspace survey was conducted at Site 21 across the gridded area north and south of Radford Boulevard. Only one composite soil sample was collected at most grid point locations because the water table was encountered at approximately 4 to 6 feet BLS. Figure 1-5 illustrates non-methane headspace readings significantly above background (>1 ppm) at each location. Elevated open-borehole OVA readings were obtained at the locations where elevated headspace readings were observed. Three areas north of Radford Boulevard, two of which correspond to former storage tank areas, exhibited elevated OVA readings ranging from 1.0 to 380 ppm above background. A thin layer of free product or petroleum sheen was detected on the groundwater encountered in two borings north of Radford Boulevard.

1.6 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Naval Air Station Pensacola is located in the Gulf Coastal Lowland Subdivision of the Coastal Plain Province physiographic division (Brooks 1981). NASP is located on a peninsula bounded on the east and south by Pensacola Bay and Big Lagoon and on the north by Bayou Grande. The most prominent topographic feature on the peninsula is an escarpment or bluff which parallels the southern and eastern shorelines and on which Fort Barrancas was built. Seaward of the escarpment is a nearly level marine terrace with surface elevations of approximately 5 feet above MSL. The central part of the peninsula, located landward of the escarpment, is a broad, gently rolling upland area with surface elevations up to 40 feet MSL (USGS 1970a, 1970b). Sandy soils occur throughout the NAS Pensacola area. As a result, most of the rainfall infiltrates directly into the subsurface. Consequently, there are few streams or surface water bodies on the peninsula.



KEY:

- Aboveground Fuel Storage Tank and Containment Wall
- Former Aboveground Storage Tank (Approximate Location)
- BLDG 1971 — Building
- A — Asphalt-Paved Area
- C — Concrete-Paved Area
- U — Unpaved Area
- + — Elevated Soil Headspace OVA Reading (non-methane) Location
- (50) — Elevated Soil Headspace OVA Reading (ppm organic vapors-less methane)
- 0.5 — Soil Headspace OVA Reading (ppm) Where Free Product or Petroleum Sheen was Present
- Area of Excessively Contaminated Soil (greater than 50 ppm)

SCALE

0 200 400 FEET

Figure 1-5
SOIL HEADSPACE SURVEY MAP — NAS PENSACOLA SITE 21

There are three principal hydrogeologic units of importance which underlie NASP. These are, in descending order, the Surficial Aquifer, the Intermediate System, and the Floridan Aquifer System.

The Surficial Aquifer occurs from land surface to a depth of approximately 300 feet at NASP and is composed of a sequence of unconsolidated to poorly indurated clastic deposits (Wagner et al. 1984). In this portion of Florida, the Surficial Aquifer constitutes an important source of water supply and is called the Sand-and-Gravel Aquifer (Southeastern Geological Society [SEGS] 1986). In the NASP vicinity, the Sand-and-Gravel Aquifer is made up of three zones based on contrasting permeabilities. These zones are referred to as the surficial zone, the low permeability zone, and the main producing zone (Wilkins et al. 1985).

The surficial zone is contiguous with land surface and contains groundwater under water table or perched water table conditions. The results of numerous borings conducted at NASP indicate that the surficial zone ranges in thickness between 40 and 70 feet and consists of tan and brown, fine to medium-grained quartz sand. Depth to the water table with the surficial zone is variable depending on location and ranges from less than 1 foot near surface water bodies to more than 20 feet in areas of higher elevation. Shallow groundwater in the surficial zone moves toward area of lower elevation and/or the nearest surface water body. Overall, the surficial zone has a high permeability (16 to 56 ft/day). Horizontal groundwater flow would generally be expected to be high.

The low permeability zone is underlying the surficial zone and is a zone of lower permeability sediments dominated by clay and silt-mixed material. At NASP this zone is generally composed of gray to blue, sandy, silty, slightly fossiliferous (shelly) clay and clayey sand ranging in thickness from 8 to 40 feet (G&M 1984, 1986). The result of laboratory permeability test conducted on samples from this zone indicate that vertical hydraulic conductivities are low (4.2×10^{-5} to 9.9×10^{-2} ft/day). Few, if any, wells are open to the low permeability zone at NASP; thus, no information is available regarding groundwater flow direction.

The main producing zone is the bottom portion of the Sand-and-Gravel Aquifer and consists mainly of sand and gravel interbedded with thin beds of silt and clay. The depth at which the main producing zone is encountered is somewhat variable, ranging from 60 to approximately 120 feet BLS at NASP. This zone generally has the highest permeability characteristics due to thicker and more persistent sand and gravel beds and is tapped by most of the major wells in the Pensacola area (Wilkins et al. 1985). The thickness of the main producing zone can be highly variable; however, it is estimated to be up to about 100 feet at NASP. Insufficient data exist for wells open to the main producing zone at NASP to determine direction of groundwater flow within this zone; however, the flow direction is assumed to be generally southward under ambient conditions. Pumpage of the supply wells would locally cause groundwater in this zone to flow toward the wells. A considerable potential exists for vertical groundwater flow from the surficial to the main producing zone at this location. It is not know to what extent this potential exists elsewhere at NASP.

The low limit of the Sand-and-Gravel Aquifer coincides with the top of a regionally extensive

and vertically persistent hydrogeologic unit of much lower permeability. This unit is referred to as the Intermediate System. In the vicinity of NASP, the top of the Intermediate System generally lies within the sediments termed Miocene Coarse Clastics or corresponds to the top of the Upper Member of the Pensacola Clay and occurs at a depth of approximately 300 feet (Wilkins et al. 1985). In general, the Intermediate System consists of fine-grained sediments and functions as an effective confining unit which retards the exchange of water between the overlying Sand-and-Gravel Aquifer and the underlying Floridan Aquifer System (SEGS 1986). The entire sequence is primarily poor to non-water bearing. In the NASP area, the Intermediate System is approximately 1,100 feet thick and is composed of the lower portion of the Miocene Coarse Clastics, the Upper Member of the Pensacola Clay, the Escambia Sand Member of the Pensacola clay, and the Lower Member of the Pensacola Clay; all are of Miocene Age.

Immediately underlying the Intermediate System and occurring at a depth of approximately 1,500 feet BLS at NASP is the Floridan Aquifer System. The Floridan Aquifer in this area is composed of the Middle to Lower Miocene Chickasawhay Limestone and undifferentiated Tampa State Limestone. Groundwater within the Floridan Aquifer in this area is highly mineralized and is not used for water supply (Wagner et al. 1984).

In the immediate vicinity of Site 21, the surficial zone of the Sand-and-Gravel Aquifer probably occurs to a depth of about 50 feet BLS. Although no deep borings have been completed in the immediate vicinity of either site, data from numerous borings completed at various sites on NASP indicate a general surficial zone thickness of approximately 50 feet. Furthermore, the surficial zone thickens toward the western portion of the base. G&M (1984) provides drilling logs for borings conducted on NASP prior to the Verification Study. Included in this report is information concerning a group of boring (boring group 10) which was completed approximately 0.75 mile east of Site 21. The lithologic description of cuttings from boring group 10, indicates that the surficial zone primarily consists of tan and brown, fine to medium-grained quartz sand. A total of 10 shallow monitoring wells, open to the surficial zone, have been installed during previous investigation at Site 21. These wells indicate that the water table generally occurs between 1 and 4 feet BLS. The water level data collected from wells located on Site 21 indicate groundwater flow direction in the surficial zone is to the south-southeast and the horizontal hydraulic gradient is approximately 0.004. Based on groundwater data collected at Site 21, G&M (1986) estimated a horizontal shallow ground-water flow velocity of 0.36 ft/day or 130 ft/yr.

Based on data collected from borings completed at other NASP locations, it is assumed that the low permeability zone of the Sand-and-Gravel Aquifer occurs at approximately 50 feet and extends to a depth of approximately 100 BLS (G&M 1984). Based on reported lithologic data from boring group 10 (G&M 1984), this zone would be expected to function as a confining or semiconfining unit restricting the flow of groundwater between the surficial zone and the main producing zone which underlies the unit. The direction of groundwater flow with the low permeability zone is unknown.

1.7 WELL SURVEY

Currently there are two potable water wells located at NASP that are permitted by the Northwest Florida Water Management District. Potable water to the base is mainly supplied by potable water wells located at Corry Station, located three miles to the north. The two potable water wells located at NASP are only used to supplement the potable water wells at Corry Station. NASP water supply wells (Wells No. 1 and No. 2) are located approximately 0.4 mile and 0.7 mile north of the Sludge At Fuel Tanks Area site, respectively. Supply wells No. 1 and No.2 were installed in 1942 to a depth of 174'6" and 178', respectfully, (open to the main producing zone). The wells yield, when in use, about 650 gpm, each. The depth to the static water level for supply well No. 1 and No. 2, in 1942, was approximately 23 feet and 24 feet, respectively. Well construction details are shown in Table 1-3.

2.0 SITE ASSESSMENT

2.1 SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS

PWC personnel initiated the investigation with the installation of 113 soil borings to a depth of approximately 5 feet BLS. These soil borings were installed by W.E.S. Inc. personnel on December 9, 10, 18, and 19, 1996. The soil borings were installed using a stainless steel hand auger. The stainless steel hand auger was decontaminated between borings using liquanox soap, isopropyl alcohol, and distilled water. Soil samples were collected from each borehole at 1, 3, and 5 feet intervals and analyzed for volatile organic vapors using an organic vapor analyzer (OVA) with a flame ionization detector. Soil boring cuttings were placed back into the boreholes upon completion of installation. Borings B1 thru B92 were initially installed in a grid pattern at approximately 50' apart as shown in Figure 2-1.

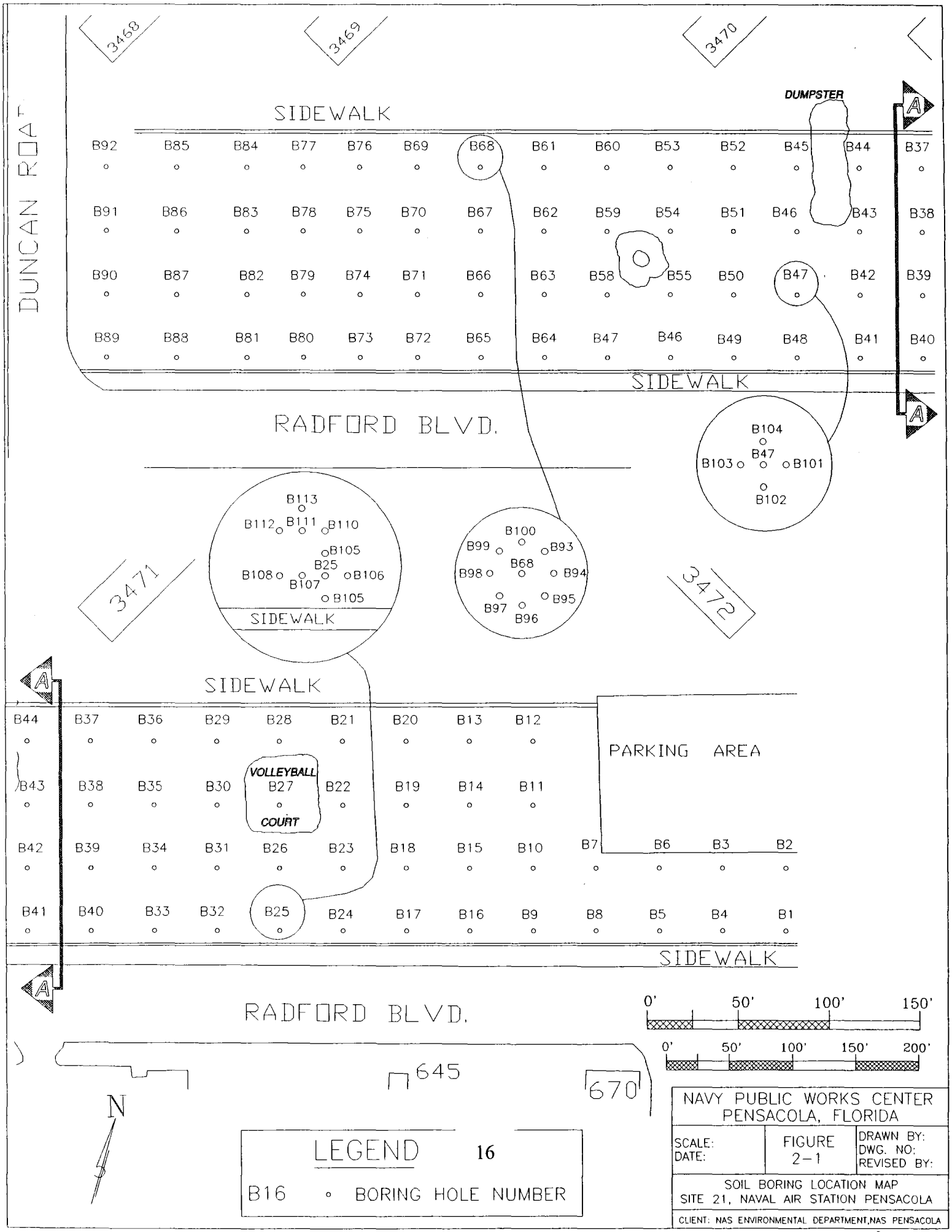
Shallow groundwater monitoring wells MW-1 thru MW-25 were installed at the site by W.E.S., Inc. personnel. Monitoring well MW-1 thru MW-5 were installed on February 7, 1996; MW-6 thru MW-13 were installed July 25, 1996; MW-14 thru MW-18 were installed August 29, 1996; MW-19 and MW-20 were installed September 10, 1996; and MW-21 thru MW-25 were installed November 6, 1996. A location map of the shallow wells is shown in Figure 2-2. The shallow groundwater monitoring wells were installed to a depth of 12.5' to 13.5' BLS depending on the groundwater depth. The monitoring wells were installed using a hollow stem auger with an inside diameter of 4 inches. The monitoring wells consist of 2-inch diameter by 10 feet of 0.0010 inch slotted schedule 40 PVC screen, threaded to between 2 feet and 3.0 feet of solid schedule 40 PVC riser. The filter sand pack for monitoring wells consisted of coarse silica sand with a mesh size of 20 to 30. The sand filter pack was placed in the annular space between the outside of the well screen and borehole from the bottom of the borehole to approximately 1.0 foot above the well screen. A 1.0 foot bentonite seal was placed above the sand pack with the remaining annular space filled with cement grout. A flush mounted manhole was installed around the top of the monitoring well with an 8" diameter manhole cover. A locking cap placed at the top of the monitoring wells completed the monitoring wells construction. The groundwater extracted during wells development was placed into steel 55 gallon drums and properly labeled for disposal. Plastic was placed under and on top of drill cuttings. The construction diagrams for shallow monitoring wells MW-1 thru MW-25 are shown in Appendix

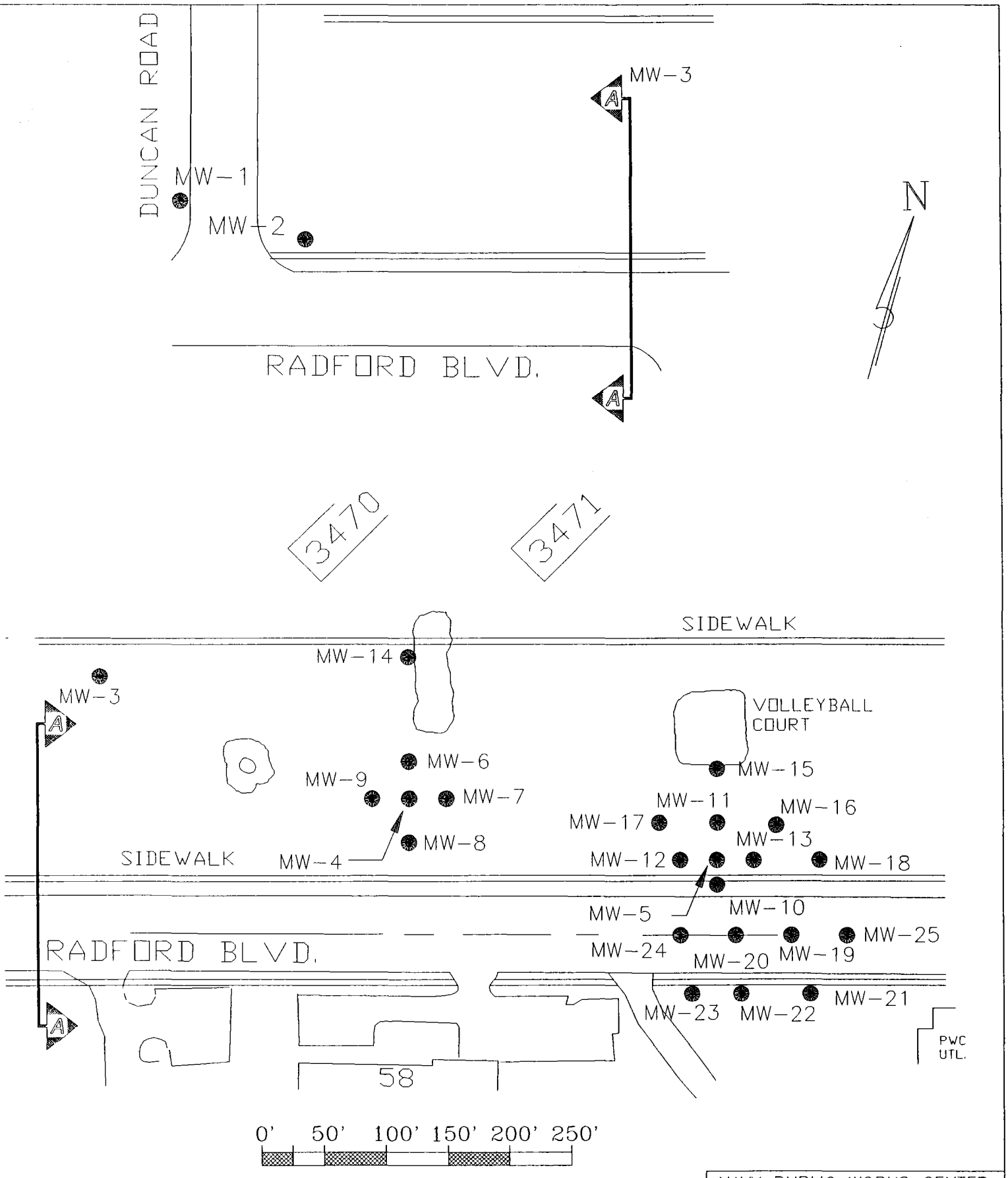
TABLE 1-3

CONSTRUCTION DETAILS OF WATER-SUPPLY WELLS

NAVAL AIR STATION, PENSACOLA, FLORIDA GROUNDWATER WELL NUMBER	#1	#2
Year Drilled	1942	1942
Depth Drilled	174' x 6"	178'
Length, outside casing	106"	114"
Diameter, outside casing	24" x 100' 12" x 106'	24" x 110' 12" x 114'
Material, outside casing	Steel	Steel
Depth to static water level	23'	24'
Normal suction lift (wkng. level)	32'	38'
Normal yield, GPM	650	650
Test yield, GPM	u/k	u/k
Type of grout	Cement	Cement
Drilling method	Rotary	Rotary
Type of strainer	Bronze	Bronze
Depth to top of strainer	106'	114'
Protection from surface water?	Yes	Yes
Is inundation of well possible?	No	No
Sale intrusion noted in past?	No	No
Has the well ever been contaminated?	No	No
Pump manufacturers' name	Layne Bowler	Layne Bowler
Model number	RKLC	RKLC
Capacity GPM	750	750
Check valve present in line?	Yes	Yes
Date of last servicing	Routine Maint.	Routine Maint.
Maintenance schedule (day/mo.)	Daily	Daily

Notes: uk=unknown
s.s.=stainless


3468
3469
3470
3471
3472
DUNCAN ROAD
SIDEWALK
DUMPSTER
A
B92 B85 B84 B77 B76 B69 B68 B61 B60 B53 B52 B45 B44 B37
B91 B86 B83 B78 B75 B70 B67 B62 B59 B54 B51 B46 B43 B38
B90 B87 B82 B79 B74 B71 B66 B63 B58 B55 B50 B47 B42 B39
B89 B88 B81 B80 B73 B72 B65 B64 B47 B46 B49 B48 B41 B40
RADFORD BLVD.
B104
B47
B103 B101
B102
B113
B112 B111 B110
B105
B25
B108 B107 B106
B105
B100
B99 B93
B68
B98 B94
B97 B95
B96
B44 B37 B36 B29 B28 B21 B20 B13 B12
PARKING AREA
VOLLEYBALL
B43 B38 B35 B30 B27 B22 B19 B14 B11
COURT
B42 B39 B34 B31 B26 B23 B18 B15 B10 B7 B6 B3 B2
B41 B40 B33 B32 B25 B24 B17 B16 B9 B8 B5 B4 B1
0' 50' 100' 150'
0' 50' 100' 150' 200'
645
670
N
LEGEND
16
B16 BORING HOLE NUMBER
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
DATE:
FIGURE
2-1
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL BORING LOCATION MAP
SITE 21, NAVAL AIR STATION PENSACOLA
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA



LEGEND

MW-3 ● MONITORING WELL NUMBER

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 2-2	DRAWN BY: DWG. NO: REVISED BY:
MONITORING WELL LOCATION MAP SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

A.

2.2 GROUNDWATER FLOW DIRECTION

The top of casing elevations for shallow monitoring wells MW-1 thru MW-25 were surveyed by Charlotte Engineering and Surveying. Survey benchmark is assumed elevation of 30.00 ft. at the northeast corner of existing concrete vault box. Vault box contains shut-off valves for JP-5 fuel. Groundwater elevations for the groundwater level measurements taken on March 25, 1997 are shown in Table 2-1. A groundwater flow direction map for the groundwater level measurements taken on March 25, 1997 is shown in Figure 2-3. The groundwater flow direction map indicates the groundwater flow direction at the site to be toward the southeast.

Water level measurements were measured at nine monitoring wells at 20 minute time intervals for two hours prior to low and high tide; and two hours after low and high tide on March 26, 1997 to determine if the groundwater is influenced by tidal fluctuations. The results of the tidal fluctuation data is provided in Appendix E. The maximum groundwater elevation difference observed during the high tide readings was 0.03 feet at monitoring well MW-23; while the minimum groundwater elevation difference observed during the high tide readings was 0.01 feet at monitoring well MW-12. A 0.02 foot groundwater elevation was observed at the remaining monitoring wells measured during the high tide readings. The maximum groundwater elevation difference observed during the low tide readings was 0.02 feet at monitoring well MW-5. A 0.01 foot groundwater elevation difference was observed at monitoring wells MW-6 and MW-13 during the low tide readings. No groundwater monitoring well elevation difference was observed during the low tide readings at any of the remaining monitoring wells.

2.3 GROUNDWATER FLOW RATE

The horizontal groundwater flow velocity was calculated using the equation V=Ki/n. The horizontal hydraulic conductivity was calculated by taking the average of the hydraulic conductivities determined from slug tests performed during the preparation of three previous CAR's performed at NAS Pensacola, The average horizontal conductivity of the three sites at NAS Pensacola was determined to be 48.3 feet/day (Campbell, 1995). A hydraulic gradient was calculated from the groundwater elevation data collected from groundwater monitoring wells MW-4 and MW-6 on May 4, 1997. The hydraulic gradient was determined to be 0.006. The effective pore velocity of the site was assumed to be 25%. The average linear groundwater flow velocity at the site was determined to be 1.16 ft/day. The groundwater flow velocity assumptions and calculations are shown in Appendix B.

2.4 SOIL ASSESSMENT

The extent of soil contamination at the site was determined by installation of soil borings and OVA screening of soil samples. The soil borings were installed using a stainless steel auger. Soil samples were collected from each borehole at depths of 1', 3' and 5' BLS. The groundwater table was encountered at approximately 5.0 feet bls. The investigation was initiated by the installation of ninety-two soil borings on December 9, and 10, 1995. The soil borings, installed in a grid pattern with 50 feet spacing, were installed at the locations of the

TABLE 2-1
TOP OF CASING AND GROUNDWATER ELEVATIONS
NAVAL AIR STATION PENSACOLA
SITE 21, SLUDGE AT FUEL TANKS AREA

WELL NUMBER	TOC FT. M.S.L.	DTW (FT) 3/25/97	GROUNDWATER ELEVATION 3/25/97
MW-1	26.54	2.92	23.62
MW-2	28.08	4.75	23.33
MW-3	28.89	5.34	23.55
MW-4	28.59	5.56	23.03
MW-5	29.93	6.31	22.62
MW-6	28.40	5.29	23.11
MW-7	28.49	5.49	23.00
MW-8	28.50	5.57	22.93
MW-9	28.45	5.45	23.00
MW-10	29.21	6.67	22.54
MW-11	28.59	5.86	22.73
MW-12	29.08	6.41	22.67
MW-13	28.74	6.15	22.59
MW-14	28.93	5.71	23.22
MW-15	28.68	5.85	22.83
MW-16	28.53	5.89	22.64
MW-17	48.62	5.84	22.78
MW-18	28.68	6.17	22.51
MW-19	29.49	7.11	22.38
MW-20	29.55	7.10	22.45

NOTES: TOC = Top of Casing
DTW = Depth to Water

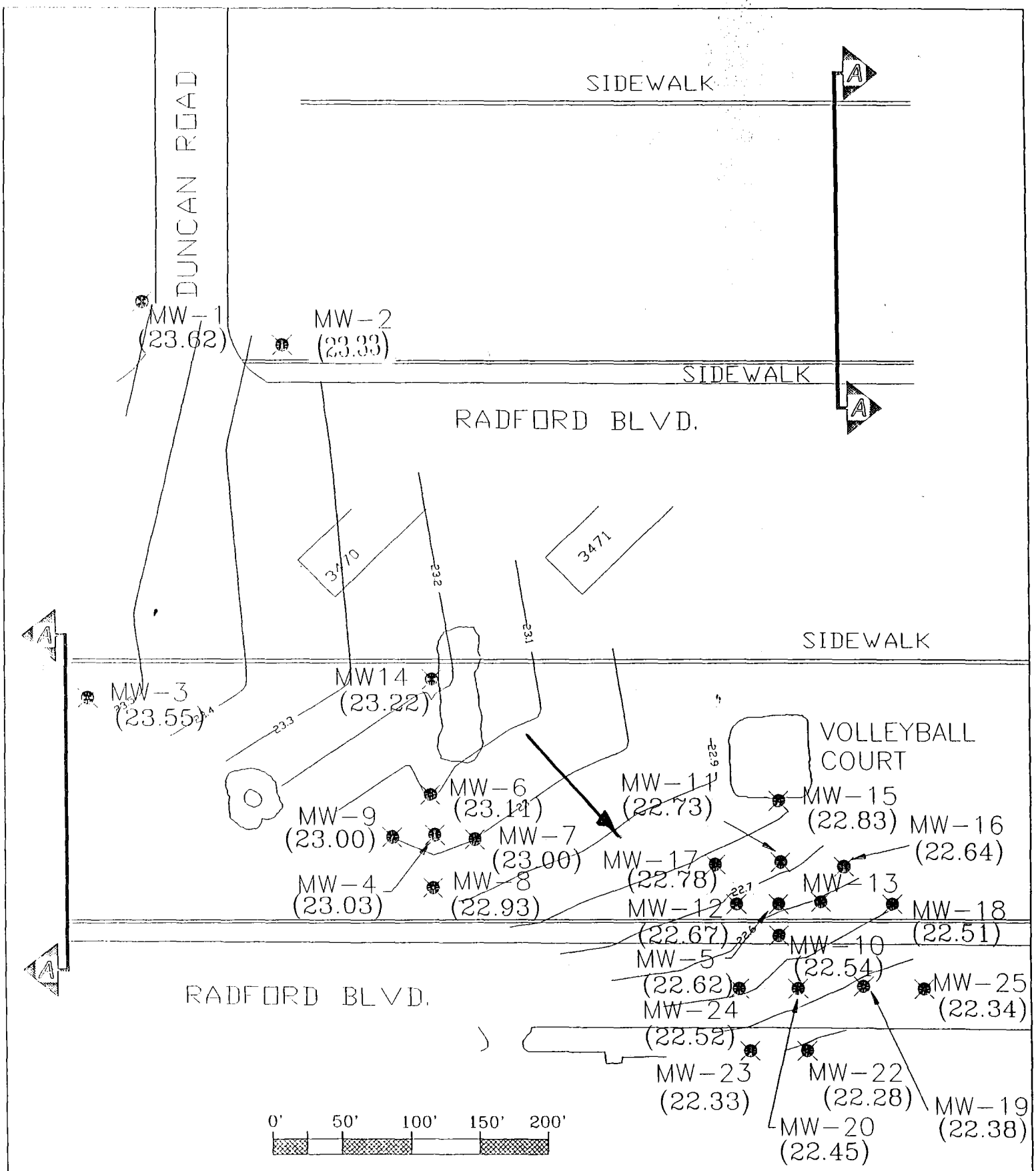
Benchmark is assumed elevation of 30.00 ft. at the northeast corner of existing concrete vault box. Vault box contains shut-off valves for JP-5 fuel.

TABLE 2-1 (CONT.)

WELL NUMBER	TOC FT. M.S.L.	DTW (FT) 3/25/97	GROUNDWATER ELEVATION 3/25/97
MW-21	29.20	6.10	23.10
MW-22	29.33	7.05	22.28
MW-23	29.04	6.71	22.33
MW-24	29.41	6.89	22.52
MW-25	29.28	6.94	22.34

NOTES: TOC = Top of Casing
DTW = Depth to Water

Benchmark is assumed elevation of 30.00 ft. at the northeast corner of existing concrete vault box. Vault box contains shut-off valves for JP-5 fuel.



NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 2-3	DRAWN BY: DWG. NO: REVISED BY:
GROUNDWATER FLOW DIRECTION MAP (5-2-97) SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

former tanks. With the exception of soil boring B68, no soil samples collected from the soil borings detected volatile organic compounds. A soil sample collected from soil boring B68 at a depth of 1 foot bls detected volatile organic vapor concentrations of 25 ppm. Since soil boring B68 was the only soil boring to detect volatile organic vapors, seven additional soil borings (B93 thru B100) were installed around the perimeter of soil boring B68 at 12.5 foot intervals. No volatile organic vapors were detected in the soil samples collected from soil borings B93 thru B100. The Phase I, IR fieldwork conducted at the site by Ecology and Environment, in 1991 indicated elevated OVA readings during OVA screening at two locations at the site (B016 and B017 areas). See section 1.5 and Figure 1-4 for locations. Therefore, additional soil borings (101 through 113) were installed at and around these two areas to assess the areal extent of soil contamination at these areas. No volatile organic vapors were detected in the soil samples collected from soil borings B101 thru B113 with the exception of B103 (5') which detected volatile organic vapors at 0.5 ppm. The location of the soil borings is provided in Figure 2-1 and the summary of the OVA screening results is provided in Table 2-2.

In addition to the hand auger soil borings, soil samples were collected during the installation of monitoring wells MW-1 thru MW-25. Soil samples were collected from these boreholes at 1, 4 and 6 feet bls. No volatile organic vapors were detected in any of the soil samples collected from monitoring wells MW-1 thru MW-25. The location of the soil borings is provided in Figure 2-1 and the summary of the OVA screening results is provided in Table 2-2.

2.5 SITE SPECIFIC HYDROGEOLOGY

The principal aquifer of concern at the site is the surficial zone of the sand-and-gravel aquifer. The surficial zone was penetrated to at depth of 13.5 feet during this investigation. The lithology at the site was found to be consistent and is generally composed of (1) humus, dark brown, fine clayey soil with organics from 0 to 1 foot BLS, (2) red/brown, clayey, fine sand with organic vestige-PAN from 1 to 3 feet BLS, (3) grey, mottled white fine sand, some organics from 3 to 3.5 feet BLS, and (4) white, fine to medium grained sand. The groundwater table at the site was encountered between 5 and 6 feet BLS. Lithological logs describing the soils encountered at various depth, the approximate groundwater level, and OVA screening results for the soil borings installed during monitoring well installation are shown in Appendix C.

2.6 SURFACE WATER ASSESSMENT

No surface water was observed at the site and therefore no surface water assessment was performed for the project. Pensacola Bay is located approximately 500 feet south of the site.

2.7 GROUNDWATER QUALITY ASSESSMENT

A groundwater sample was collected from each monitoring well at the site by W.E.S., Inc. personnel using the methods and procedures outlined in their Comprehensive Quality Assurance Plan (CompQAP No. 900465G). The groundwater samples were collected on February 9, July 31, September 25 and November 20, 1996. The location of the groundwater

Table 2-2
Volatile Organic Compounds (VOCs)
Concentrations in Soil
Soil Samples From SB-1 thru SB-113
and MW-1 thru MW-25
Naval Air Station Pensacola
Site 21, Sludge at Fuel Tanks Area

Boring Designation	Depth (Feet BLS)	VOCs Concentration (ppm)[1]
SB-1	1'	0
	3'	0
	5'	0
SB-2	1'	0
	3'	0
	5'	0
SB-3	1'	0
	3'	0
	5'	0
SB-4	1'	0
	3'	0
	5'	0
SB-5	1'	0
	3'	0
	5'	0
SB-6	1'	0
	3'	0
	5'	0
SB-7	1'	0
	3'	0
	5'	0
SB-8	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-9	1'	0
	3'	0
	5'	0
SB-10	1'	0
	3'	0
	5'	0
SB-11	1'	0
	3'	0
	5'	0
SB-12	1'	0
	3'	0
	5'	0
SB-13	1'	0
	3'	0
	5'	0
SB-14	1'	0
	3'	0
	5'	0
SB-15	1'	0
	3'	0
	5'	0
SB-16	1'	0
	3'	0
	5'	0
SB-17	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-18	1'	0
	3'	0
	5'	0
SB-19	1'	0
	3'	0
	5'	0
SB-20	1'	0
	3'	0
	5'	0
SB-21	1'	0
	3'	0
	5'	0
SB-22	1'	0
	3'	0
	5'	0
SB-23	1'	0
	3'	0
	5'	0
SB-24	1'	0
	3'	0
	5'	0
SB-25	1'	0
	3'	0
	5'	0
SB-26	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-27	1'	0
	3'	0
	5'	0
SB-28	1'	0
	3'	0
	5'	0
SB-29	1'	0
	3'	0
	5'	0
SB-30	1'	0
	3'	0
	5'	0
SB-31	1'	0
	3'	0
	5'	0
SB-32	1'	0
	3'	0
	5'	0
SB-33	1'	0
	3'	0
	5'	0
SB-34	1'	0
	3'	0
	5'	0
SB-35	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-36	1'	0
	3'	0
	5'	0
SB-37	1'	0
	3'	0
	5'	0
SB-38	1'	0
	3'	0
SB-39	5'	0
	1'	0
	3'	0
SB-40	5'	0
	1'	0
	3'	0
SB-41	5'	0
	1'	0
	3'	0
SB-42	5'	0
	1'	0
	3'	0
SB-43	5'	0
	1'	0
	3'	0
SB-44	5'	0
	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-45	1'	0
	3'	0
	5'	0
SB-46	1'	0
	3'	0
	5'	0
SB-47	1'	0
	3'	0
	5'	0
SB-48	1'	0
	3'	0
	5'	0
SB-49	1'	0
	3'	0
	5'	0
SB-50	1'	0
	3'	0
	5'	0
SB-51	1'	0
	3'	0
	5'	0
SB-52	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-53	1'	0
	3'	0
	5'	0
SB-54	1'	0
	3'	0
	5'	0
SB-55	1'	0
	3'	0
	5'	0
SB-56	1'	0
	3'	0
	5'	0
SB-57	1'	0
	3'	0
	5'	0
SB-58	1'	0
	3'	0
	5'	0
SB-59	1'	0
	3'	0
	5'	0
SB-60	1'	0
	3'	0
	5'	0
SB-61	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-62	1'	0
	3'	0
	5'	0
SB-63	1'	0
	3'	0
	5'	0
SB-64	1'	0
	3'	0
	5'	0
SB-65	1'	0
	3'	0
	5'	0
SB-66	1'	0
	3'	0
	5'	0
SB-67	1'	0
	3'	0
	5'	0
SB-68	1'	25
	3'	0
	5'	0
SB-69	1'	0
	3'	0
	5'	0
SB-70	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-71	1'	0
	3'	0
	5'	0
SB-72	1'	0
	3'	0
	5'	0
SB-73	1'	0
	3'	0
	5'	0
SB-74	1'	0
	3'	0
	5'	0
SB-75	1'	0
	3'	0
	5'	0
SB-76	1'	0
	3'	0
	5'	0
SB-77	1'	0
	3'	0
	5'	0
SB-78	1'	0
	3'	0
	5'	0
SB-79	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-80	1'	0
	3'	0
	5'	0
SB-81	1'	0
	3'	0
	5'	0
SB-82	1'	0
	3'	0
	5'	0
SB-83	1'	0
	3'	0
	5'	0
SB-84	1'	0
	3'	0
	5'	0
SB-85	1'	0
	3'	0
	5'	0
SB-86	1'	0
	3'	0
	5'	0
SB-87	1'	0
	3'	0
	5'	0
SB-88	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-89	1'	0
	3'	0
	5'	0
SB-90	1'	0
	3'	0
	5'	0
SB-91	1'	0
	3'	0
	5'	0
SB-92	1'	0
	3'	0
	5'	0
SB-93	1'	0
	3'	0
	5'	0
SB-94	1'	0
	3'	0
	5'	0
SB-95	1'	0
	3'	0
	5'	0
SB-96	1'	0
	3'	0
	5'	0
SB-97	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-98	1'	0
	3'	0
	5'	0
SB-99	1'	0
	3'	0
	5'	0
SB-100	1'	0
	3'	0
	5'	0
SB-101	1'	0
	3'	0
	5'	0
SB-102	1'	0
	3'	0
	5'	0
SB-103	1'	0
	3'	0
	5'	0.5
SB-104	1'	0
	3'	0
	5'	0
SB-105	1'	0
	3'	0
	5'	0
SB-106	1'	0
	3'	0
	5'	0
SB-107	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont)

Boring Designation	Depth (Feet BLS)	VOCs Concentration (ppm)[1]
SB-108	1'	0
	3'	0
	5'	0
SB-109	1'	0
	3'	0
	5'	0
SB-110	1'	0
	3'	0
	5'	0
SB-111	1'	0
	3'	0
	5'	0
SB-112	1'	0
	3'	0
	5'	0
SB-113	1'	0
	3'	0
	5'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
MW-1	2'	0
	3'	0
MW-2	2'	0
	4'	0
MW-3	2'	0
	4'	0
MW-4	2'	0
	4'	0
MW-5	2'	0
	4'	0
MW-6	1'	0
	4'	0
MW-7	1'	0
	4'	0
MW-8	1'	0
	4'	0
MW-9	1'	0
	4'	0
MW-10	1'	0
	4'	0
MW-11	1'	0
	4'	0
MW-12	1'	0
	4'	0
MW-13	1'	0
	4'	0
MW-14	1'	0
	4'	0
MW-15	1'	0
	4'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
NS = not sampled
Soil samples analyzed and VOC results reported by W.E.S., Inc.

Table 2-2 (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
MW-16	1'	0
	4'	0
	6'	0
MW-17	1'	0
	4'	0
	6'	0
MW-18	1'	0
	4'	0
	6'	0
MW-19	1'	0
	4'	0
	6'	0
MW-20	1'	0
	4'	0
	6'	0
MW-21	1'	0
	4'	0
	6'	0
MW-22	1'	0
	4'	0
	6'	0
MW-23	1'	0
	4'	0
	6'	0
MW-24	1'	0
	4'	0
	6'	0
MW-25	1'	0
	4'	0
	6'	0

[1] VOCs concentrations assessed by organic vapor analyzer headspace techniques.

Notes: BLS = below land surface
ppm = parts per million
Soil samples analyzed and VOC results reported by W.E.S., Inc.

monitoring wells is shown in Figure 2-2. Groundwater samples were analyzed for volatile organic aromatics (VOAs), polynuclear aromatic hydrocarbons (PAHs), ethylene dibromide (EDB) and TPH using EPA methods 8260, 8270, 504 and FLPRO, respectively. Groundwater samples were collected from monitoring wells MW-1 thru MW-25 on April 8, 9, and 10, 1997 by PWC personnel using quiescent sampling technique in accordance with the methods and procedures outlined in their Comprehensive Quality Assurance Plan (CompQAP). The groundwater samples were analyzed for total lead using EPA method SW6010A. The analytical laboratory results are found in Appendix D.

The groundwater quality assessment was initiated by the installation of five shallow monitoring wells MW-1 thru MW-5 on February 7, 1997. The placement of the initial groundwater monitoring wells was dictated by the soil assessments performed at the site during the Phase I, IR study performed by Ecology and Environment, Inc. in 1991 and the CAR herein (See Section 2.5). No petroleum contaminants, other than lead, were detected in the groundwater samples collected from monitoring wells MW-1 thru MW-3. Petroleum contaminants were detected in the groundwater samples collected from monitoring wells MW-4 and MW-5 above the FDEP target levels. Monitoring wells MW-6 thru MW-9 were placed to the north, east, south, and west sides of monitoring well MW-4, respectively, to delineate the horizontal extent of contamination in the area of monitoring well MW-4. Monitoring wells MW-10 thru MW-13 were placed to the south, north, west and east sides of monitoring well MW-5, respectively, to delineate the horizontal extent of contamination in the area of monitoring well MW-5. Petroleum contaminants were detected in monitoring well MW-11 above the State target levels. Therefore, monitoring wells MW-15, MW-16 and MW-17 were placed to the north, east and west of monitoring well MW-11, respectively, to delineate the horizontal extent of contamination in the area of monitoring well MW-11. Monitoring wells MW-19 thru MW-25 were installed to delineate the horizontal extent of petroleum contamination to the south of monitoring well MW-5.

No VOAs were detected in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, MW-6, MW-7, MW-8, MW-9, MW-10, MW-12 thru MW-18, or MW-20 thru MW-25. A summary table of the VOAs detected in the monitoring wells is shown in Table 2-3. Benzene was not detected in any of the groundwater samples collected from monitoring wells MW-1 thru MW-25. Total VOAs detected in the groundwater samples collected from monitoring wells MW-4, MW-5, MW-11, and MW-19 was at concentrations of 29 ppb, 19 ppb, 12 ppb, and 4 ppb, respectively. The levels of VOAs detected in those monitoring wells was below the FDEP regulatory limits of 50 ppb for total VOAs.

No PAHs were detected in the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, MW-7, MW-8, MW-9, MW-12, MW-14 thru MW-18, or MW-22 thru MW-25. A summary table of the PAHs detected in the monitoring wells is shown in Table 2-4. Total naphthalenes were detected in the groundwater samples collected from monitoring wells MW-4, MW-5, MW-6, MW-10, MW-11, MW-13, MW-19, MW-20, and MW-21 at concentrations of 212 ppb, 180 ppb, 5 ppb, 47 ppb, 193 ppb, 26 ppb, 113 ppb, 3 ppb, and 2 ppb, respectively. The levels of total naphthalenes detected in groundwater monitoring wells MW-4, MW-5, MW-11, and MW-19 exceeded the FDEP regulatory limit of 100 ppb for total naphthalenes. Fluorene was detected in the groundwater sample collected

TABLE 2-3
SUMMARY OF VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED FROM MONITORING WELLS MW-1 THRU MW-25 PENSACOLA NAVAL AIR STATION SITE 21, SLUDGE AT FUEL TANKS AREA

PARAMETER	MONITORING WELL NUMBER									
	MW-1 2/9/96	MW-2 2/9/96	MW-3 2/9/96	MW-4 2/9/96	MW-5 2/9/96	MW-6 7/31/96	MW-7 7/31/96	MW-8 7/31/96	MW-9 7/31/96	MW-10 7/31/96
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2
Ethylbenzene	BDL	BDL	BDL	2	1	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	1	BDL	BDL	BDL	BDL	BDL
Trichoroflouromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	BDL	BDL	BDL	27	17	BDL	BDL	BDL	BDL	BDL
TOTAL VOA	BDL	BDL	BDL	29	19	BDL	BDL	BDL	BDL	BDL

PARAMETER	MONITORING WELL NUMBER									
	MW-11 7/31/96	MW-12 7/31/96	MW-13 7/31/96	MW-14 9/25/96	MW-15 9/25/96	MW-16 9/25/96	MW-17 9/25/96	MW-18 9/25/96	MW-19 9/25/96	MW-20 9/25/96
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichoroflouromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2	BDL	BDL
Xylenes (Total)	12	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2	BDL
TOTAL VOA	12	BDL	BDL	BDL	BDL	BDL	BDL	BDL	4	BDL

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.

TABLE 2-3 (CONT.)

PARAMETER	MONITORING WELL NUMBER				
	MW-21 11/20/96	MW-22 11/20/96	MW-23 11/20/96	MW-24 11/20/96	MW-25 11/20/96
Benzene	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL
Trichoroflouromethane	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	BDL	BDL	BDL	BDL	BDL
TOTAL VOA	BDL	BDL	BDL	BDL	BDL

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.

TABLE 2-4
SUMMARY OF PAH
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELLS MW-1 THRU MW-25
NAVAL AIR STATION PENSACOLA
SITE 21, SLUDGE AT FUEL TANKS AREA

PARAMETER	MONITORING WELL NUMBER									
	MW-1 2/9/96	MW-2 2/9/96	MW-3 2/9/96	MW-4 2/9/96	MW-5 2/9/96	MW-6 7/31/96	MW-7 7/31/96	MW-8 7/31/96	MW-9 7/31/96	MW-10 7/31/96
Naphthalene	BDL	BDL	BDL	52	48	BDL	BDL	BDL	BDL	12
Flourene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1-Methylnaphthalene	BDL	BDL	BDL	57	52	5	BDL	BDL	BDL	17
2-Methylnaphthalene	BDL	BDL	BDL	100	80	BDL	BDL	BDL	BDL	18
Total Naphthalene	BDL	BDL	BDL	212	180	5	BDL	BDL	BDL	47

PARAMETER	MONITORING WELL NUMBER									
	MW-11 7/31/96	MW-12 7/31/96	MW-13 7/31/96	MW-14 9/25/96	MW-15 9/25/96	MW-16 9/25/96	MW-17 9/25/96	MW-18 9/25/96	MW-19 9/25/96	MW-20 9/25/96
Naphthalene	36	BDL	BDL	BDL	BDL	BDL	BDL	BDL	18	BDL
Flourene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3	BDL
1-Methylnaphthalene	68	BDL	13	BDL	BDL	BDL	BDL	BDL	48	3
2-Methylnaphthalene	89	BDL	13	BDL	BDL	BDL	BDL	BDL	47	BDL
Total Naphthalene	193	BDL	26	BDL	BDL	BDL	BDL	BDL	113	3

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.

from monitoring well MW-19 at a concentration of 3 ppb. A total naphthalene contamination distribution map is shown in Figure 2-4.

Ethylene dibromide (EDB) was not detected in any of the groundwater samples collected from monitoring wells MW-1 thru MW-25. Total petroleum hydrocarbons (TPHs) were detected in the groundwater samples collected from monitoring wells MW-4, MW-5, MW-6, MW-9, MW-10, MW-11, MW-13, MW-19, and MW-21 at concentrations of 49000 ppb, 140000 ppb, 5200 ppb, 1400 ppb, 2400 ppb, 13000 ppb, 6600 ppb, 15000 ppb, and 290 ppb, respectively. The levels of TPHs detected in groundwater monitoring wells MW-4 (49000 ppb), MW-5 (140000 ppb), MW-6 (5200 ppb), MW-11 (13000 ppb), MW-13 (6600 ppb), and MW-19 (15000 ppb) exceeded the FDEP regulatory limit of 5000 ppb for TPHs. A summary table of TPHs, total lead, and EDB detected in the monitoring wells is shown in Table 2-5. A TPH contamination distribution map is shown in Figure 2-5. Groundwater sampling performed April 8, 9, and 10, 1997 at Site 21 using the quiescent sampling technique detected lead in monitoring wells MW-1 thru MW-5, MW-7 thru MW-13, and MW-15 thru MW-25 at concentrations of 0.004 ppm, 0.22 ppm, 0.004 ppm, 0.008 ppm, 0.043 ppm, 0.093 ppm, 0.004 ppm, 0.016 ppm, 0.027 ppm, 0.042 ppm, 0.034 ppm, 0.035 ppm, 0.034 ppm, 0.077 ppm, 0.023 ppm, 0.016 ppm 0.026 ppm, 0.010 ppm, 0.005 ppm, 0.013 ppm, 0.011 ppm, 0.007 ppm, and 0.006 ppm, respectfully. The levels of lead detected in groundwater monitoring wells MW-2 (0.22 ppm), MW-7 (0.093 ppm), and MW-16 (0.077 ppm) exceeded the FDEP regulatory limit of .050 ppm for lead. A lead contamination distribution map is shown in Figure 2-6.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- The source of the contamination has been eliminated and the approximate gallons of aviation gasoline released is unknown.

- No initial remedial action was performed at the site.

- A total of 113 soil borings were installed to the groundwater table in order to delineate the extent of contaminated soils. Soil samples from the soil borings were analyzed for VOC's using an OVA. Only two soil borings, SB-68 (25 ppm) and SB-103 (0.5 ppm) indicated VOC concentrations. Both results were well below the 500 ppm for gasoline analytical group for excess soil contamination.

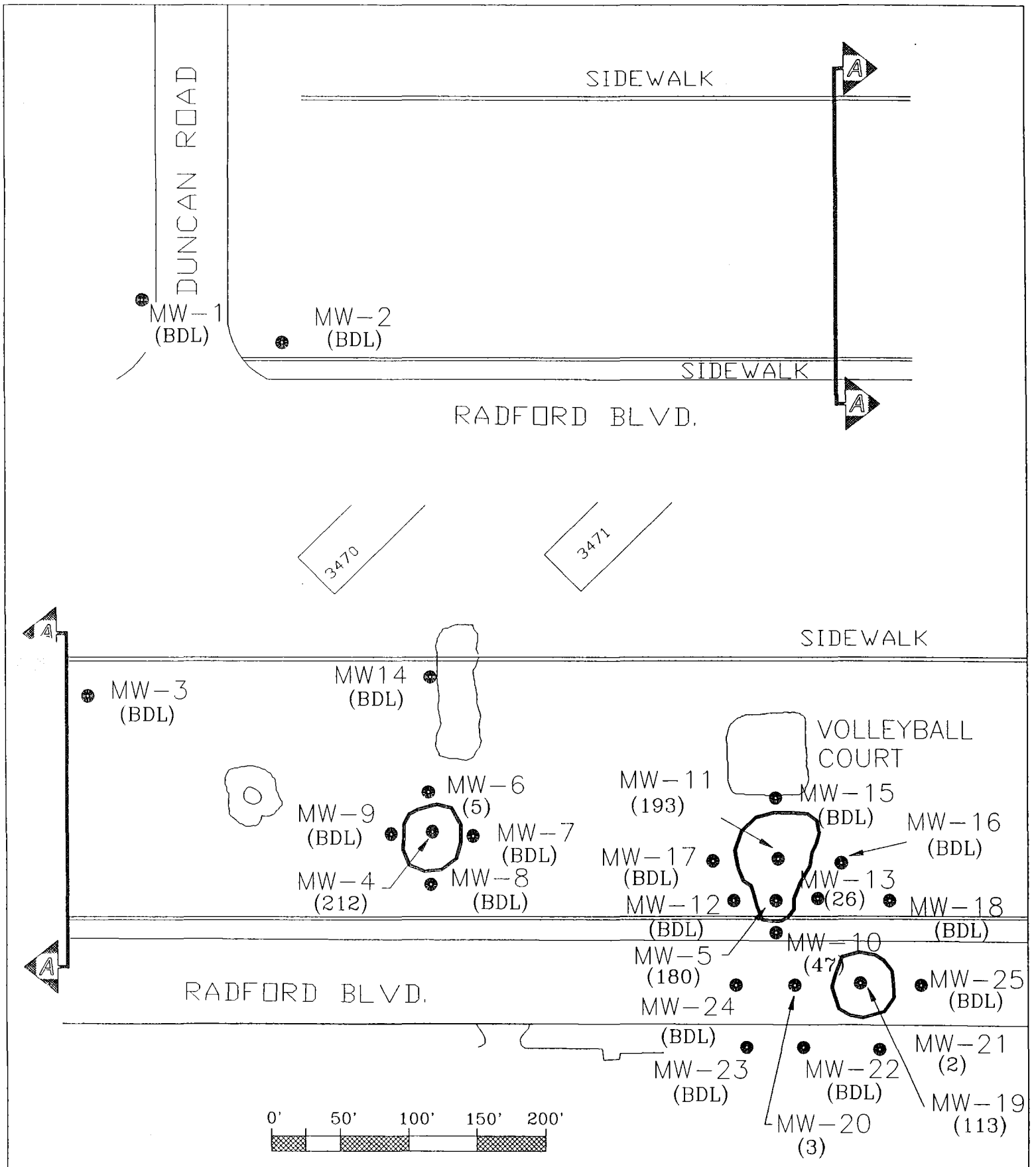
- Twenty-five shallow groundwater monitoring wells (MW-1 thru MW-25) were installed at the site. Groundwater samples were collected from each well and analyzed for the kerosene analytical group listed in FDEP Rule 62-770.600(8)(b).

- Groundwater depth measured in monitoring wells MW-1 thru MW-25 on March 25, 1997 indicates the groundwater flow direction at the site to be

TABLE 2-4 (CONT.)

PARAMETER	MONITORING WELL NUMBER				
	MW-21 11/20/96	MW-22 11/20/96	MW-23 11/20/96	MW-24 11/20/96	MW-25 11/20/96
Naphthalene	BDL	BDL	BDL	BDL	BDL
Flourene	BDL	BDL	BDL	BDL	BDL
1-Methylnaphthalene	2	BDL	BDL	BDL	BDL
2-Methylnaphthalene	BDL	BDL	BDL	BDL	BDL
Total Naphthalene	2	BDL	BDL	BDL	BDL

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above .
BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.



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LEGEND

MW-8 ● MONITORING WELL NUMBER

(212) TOTAL NAPHTHALENE CONCENTRATION (PPB)

(BDL) BELOW DETECTION LIMIT

ISOCONCENTRATION CONTOUR 100 PPB

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 2-4	DRAWN BY: DWG. NO: REVISED BY:
TOTAL NAPHTHALENE DISTRIBUTION MAP SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA		

TABLE 2-5
SUMMARY OF TPH, LEAD, AND EDB ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED FROM MONITORING WELLS MW-1 THRU MW-25 NAVAL AIR STATION PENSACOLA SITE 21, SLUDGE AT FUEL TANKS AREA

PARAMETER	MONITORING WELL NUMBER									
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
TPH										
02/09/97	BDL	BDL	BDL	49000	140000	NS	NS	NS	NS	NS
07/31/96	NS	NS	NS	NS	NS	5200	BDL	BDL	1400	2400
09/25/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/20/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
LEAD (ppm)										
04/08/97	0.004	0.22	0.004	0.008	0.043	NS	NS	NS	NS	NS
04/09/97	NS	NS	NS	NS	NS	BDL	0.093	0.004	0.016	0.027
04/10/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
EDB										
07/31/96	NS	NS	NS	NS	NS	BDL	BDL	BDL	BDL	BDL
09/25/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/20/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
04/08/97	BDL	BDL	BDL	BDL	BDL	NS	NS	NS	NS	NS

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

TABLE 2-5 (CONT.)

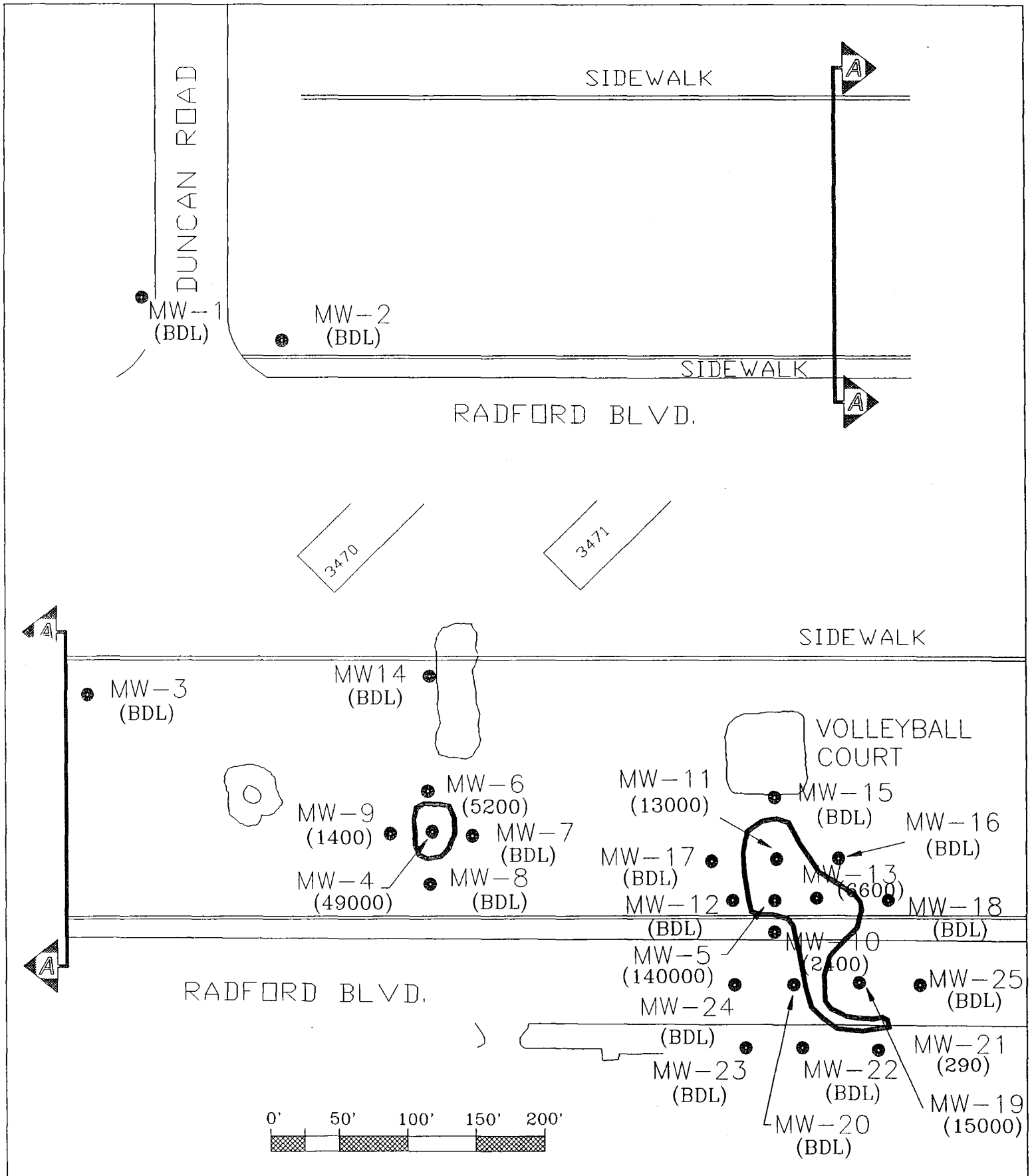
PARAMETER	MONITORING WELL NUMBER									
	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20
TPH										
02/09/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07/31/96	13000	BDL	6600	NS	NS	NS	NS	NS	NS	NS
09/25/96	NS	NS	NS	BDL	BDL	BDL	BDL	BDL	15000	BDL
11/20/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
LEAD (ppm)										
04/08/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
04/09/97	0.042	0.034	0.035	NS	NS	NS	NS	NS	NS	NS
04/10/97	NS	NS	NS	BDL	0.034	0.077	0.023	0.016	0.026	0.010
EDB										
07/31/96	BDL	BDL	BDL	NS	NS	NS	NS	NS	NS	NS
09/25/96	NS	NS	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/20/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
04/08/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled

TABLE 2-5 (CONT.)

PARAMETER	MONITORING WELL NUMBER				
	MW-21	MW-22	MW-23	MW-24	MW-25
TPH					
02/09/96	NS	NS	NS	NS	NS
07/31/96	NS	NS	NS	NS	NS
09/25/96	NS	NS	NS	NS	NS
11/20/96	290	BDL	BDL	BDL	BDL
LEAD (ppm)					
04/08/97	NS	NS	NS	NS	NS
04/09/97	NS	NS	NS	NS	NS
04/10/97	0.005	0.013	0.011	0.007	0.006
EDB					
07/31/96	NS	NS	NS	NS	NS
09/25/96	NS	NS	NS	NS	NS
11/20/96	BDL	BDL	BDL	BDL	BDL
04/08/97	NS	NS	NS	NS	NS

NOTES: Groundwater samples MW-1 thru MW-25 were collected on dates specified above.
All results reported in parts per billion (ppb) unless otherwise noted.
BDL = Below detection limits
EDB = 1,2 Dibromoethane
TPH = Total Petroleum Hydrocarbons
NS = Not sampled



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LEGEND

MW-8 ● MONITORING WELL NUMBER

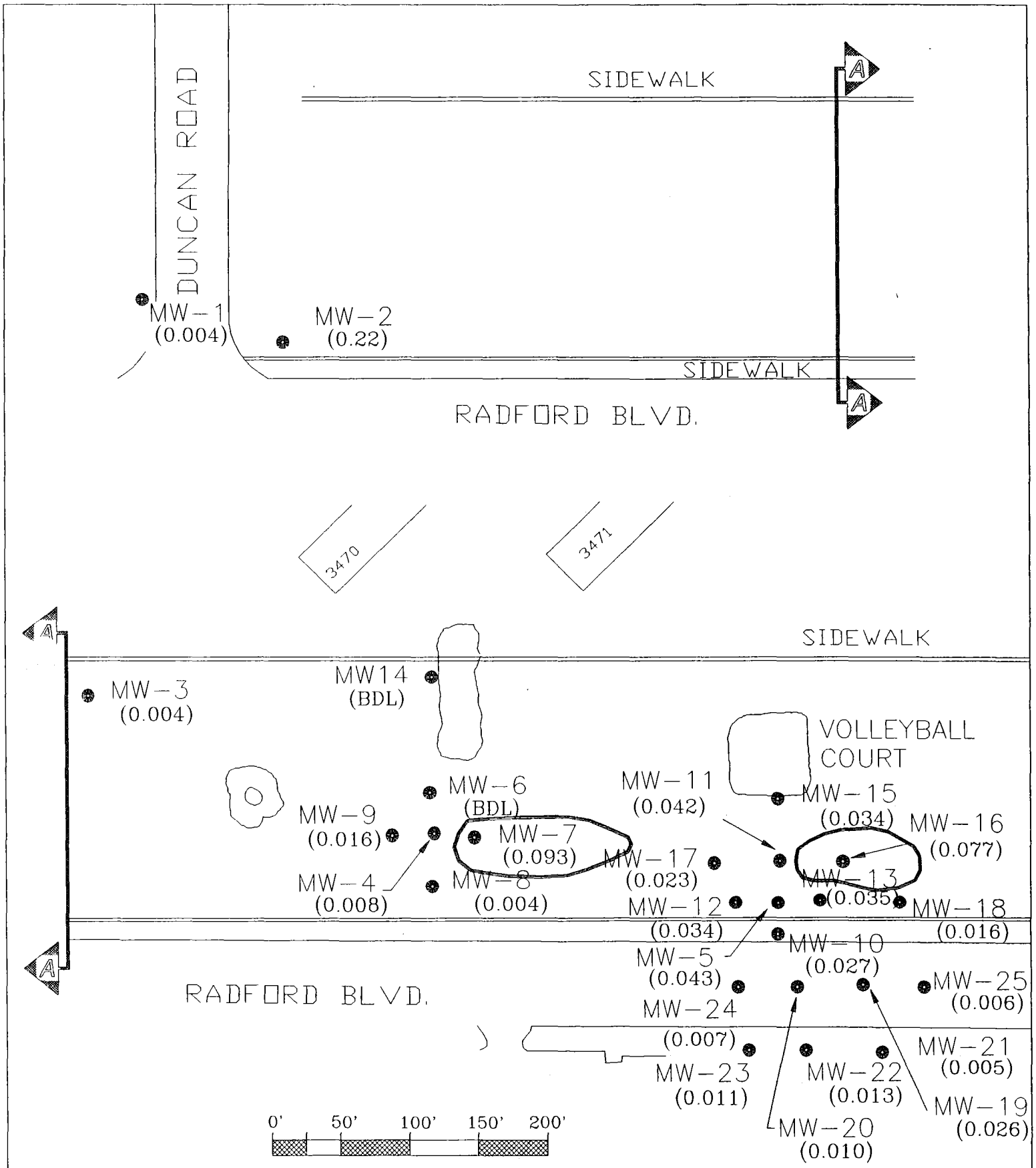
(49000) TRPH CONCENTRATION (PPB)

(BDL) BELOW DETECTION LIMIT

ISOCONCENTRATION CONTOUR 5000 PPB

48

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 2-5	DRAWN BY: DWG. NO: REVISED BY:
TRPH CONTAMINATION DISTRIBUTION MAP SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		



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LEGEND

MW-8 ● MONITORING WELL NUMBER
(0.011) LEAD CONTAMINATION (PPM)
(BDL) BELOW DETECTION LIMIT
ISOCONCENTRATION CONTOUR 0.050 PPM

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE: DATE:	FIGURE 2-6	DRAWN BY: DWG. NO: REVISED BY:
LEAD CONTAMINATION DISTRIBUTION MAP SITE 21, NAVAL AIR STATION PENSACOLA		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

toward the southeast direction.

- No kerosene analytical group contaminants were detected in monitoring wells MW-7, MW-8, MW-12, MW-14, MW-15, MW-16, MW-17, MW-22 thru MW-25.

- Total VOAs detected in monitoring wells MW-1 thru MW-25 did not exceed the FDEP regulatory limits of 50 ppb for total VOAs .

- Total naphthalenes detected in monitoring wells MW-4 (212 ppb), MW-5 (180 ppb), MW-11 (193 ppb), and MW-19 (113 ppb) exceeded the FDEP regulatory limits of 100 ppb for total naphthalenes.

- TPHs detected in monitoring wells MW-4 (49 ppm), MW-5 (140 ppm), MW-6 (5.2 ppm), MW-11 (13 ppm), MW-13 (6.6 ppm), and MW-19 (15 ppm) exceeded the FDEP regulatory limits of 5 ppm for TPHs.

- Total lead detected in the groundwater samples collected from monitoring wells MW-2 (0.22 ppm), MW-7 (0.093 ppm), and MW-16 (0.077 ppm) exceeded the FDEP regulatory limit of .050 ppm for lead.

- No EDBs were detected in the groundwater samples collected from monitoring wells MW-1 thru MW-25.

- NASP water supply wells (Wells No. 1 and No. 2) are located approximately 0.4 mile and 0.7 mile north of the Sludge At Fuel Tanks Area site, respectively.

- The hydraulic conductivity at the site was estimated to be 48.3 ft/day.

- The average pore water velocity is estimated to be 1.16 ft/day.

3.2 RECOMMENDATIONS

Based upon the findings and conclusions of this contamination assessment a No Further Action (NFA) proposal is recommended for the soil and a Monitoring Only (MO) plan is recommended for the groundwater. The MO plan for the groundwater is proposed as follows:

(1) Monitoring wells MW-4, MW-6, MW-8, MW-11, MW-15, MW-19, MW-21, and MW-25 be sampled and analyzed for PAHs by EPA method 610 and TPHs by EPA method FLPRO, semi-annually for one year.

(2) Monitoring wells MW-2, MW-7, and MW-16 shall be sampled using the quiescent sampling technique and analyzed for total lead using EPA Method 2392, semi-annually for one year.

(3) Monitoring wells MW-4, MW-11, and MW-19 which had the highest petroleum hydrocarbon concentrations, are considered the source monitoring wells. Monitoring wells MW-6, MW-15, and MW-17 are considered the upgradient monitoring wells. Monitoring wells MW-8, MW-21, and MW-25 are considered the downgradient monitoring wells.

4.0 PROFESSIONAL REVIEW CERTIFICATION

The Contamination Assessment contained in this report was prepared using sound, hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report was developed for Naval Air Station Pensacola, Site 21, Sludge at Fuel Tanks Area, Pensacola, Florida, and should not be construed to apply to any other site.

Gregory Allen Campbell

G. A. Campbell
Professional Engineer
P.E. No. 38572

8/4/97

Date

5.0 REFERENCES

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Naval Energy and Environmental Support Activity (NEESA). January 1983. Initial Assessment Study of Naval Air Station Pensacola, Florida.

APPENDICES

APPENDIX A

MONITORING WELL CONSTRUCTION DIAGRAMS

2/7/96

Water Equipment Services, Inc.
6389 TOWER LANE
SARASOTA, FLORIDA 34240
PH. (813) 371-7617
FAX (813) 378-5218

MONITOR WELL CONSTRUCTION DETAIL

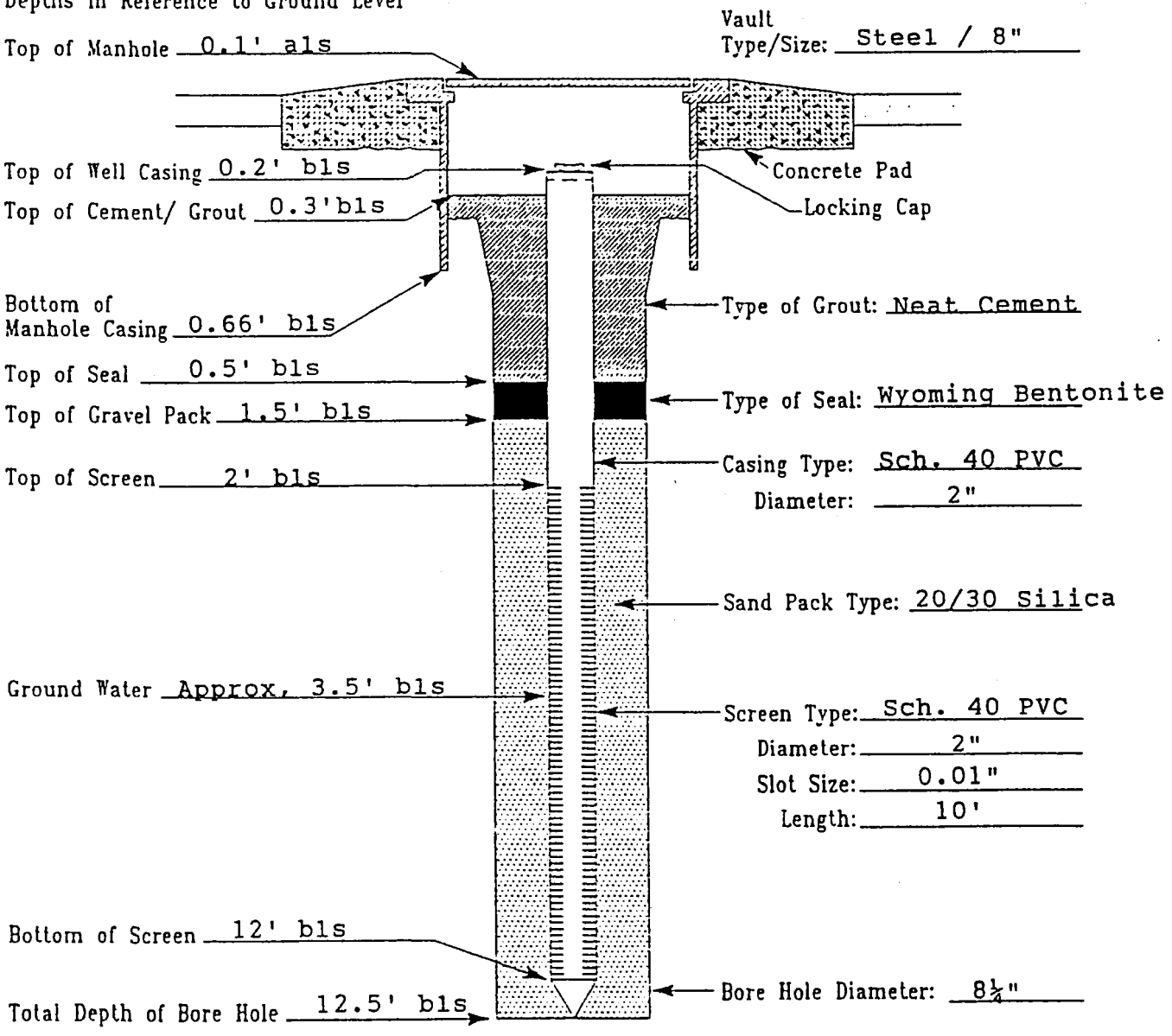
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: So. FL Test & Drill
DRILLER'S NAME: Cloyd Griffey
WELL NUMBER: MW-1
TOC ELEVATION:

CLIENT: ROICC, 520 Turner Bldg. 654
LOCATION: NAS, Pensacola, Florida Site 21
JOB NUMBER: N65114-95-D-2126 DO 0007
DATE: Start: 2/07/96 Finish: 2/07/96
TIME: Start: 1230 Finish: 1315

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

NOT TO SCALE

Depths in Reference to Ground Level



Water Equipment Services, Inc.
6389 TOWER LANE
SARASOTA, FLORIDA 34240
PH. (813) 371-7617
FAX (813) 378-5218

MONITOR WELL CONSTRUCTION DETAIL

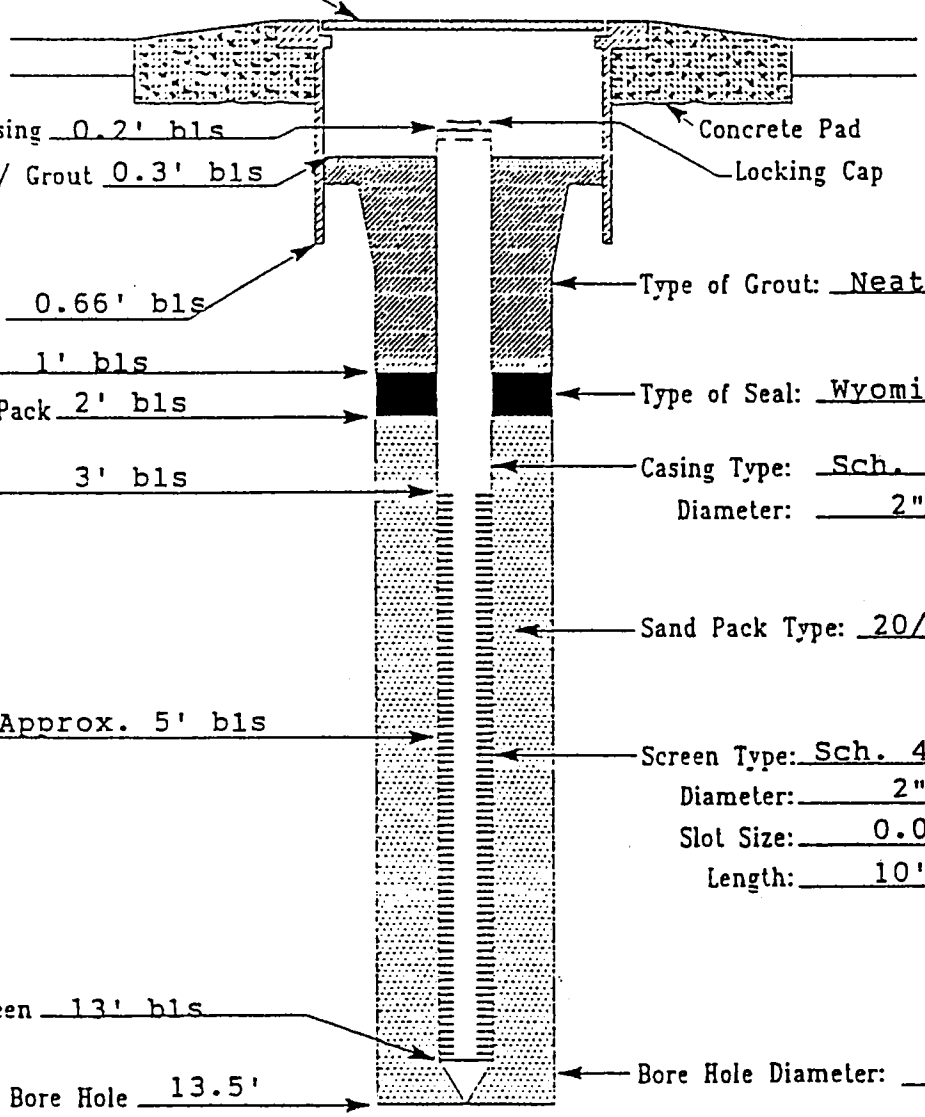
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: So. FL Test & Drill
DRILLER'S NAME: Cloyd Griffey
WELL NUMBER: MW-2
TOC ELEVATION:

CLIENT: ROICC, 520 Turner Bldg. 654
LOCATION: NAS, Pensacola, Florida
JOB NUMBER: N65114-95-D-2126 DO 0007
DATE: Start: 2/07/96 Finish: 2/07/96
TIME: Start: 1145 Finish: 1230

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

NOT TO SCALE

Depths in Reference to Ground Level



Top of Manhole 0.1' als

Vault Type/Size: Steel / 8"

Top of Well Casing 0.2' bls

Concrete Pad

Top of Cement/ Grout 0.3' bls

Locking Cap

Bottom of Manhole Casing 0.66' bls

Type of Grout: Neat Cement

Top of Seal 1' bls

Type of Seal: Wyoming Bentonite

Top of Gravel Pack 2' bls

Top of Screen 3' bls

Casing Type: Sch. 40 PVC
Diameter: 2"

Sand Pack Type: 20/30 Silica

Ground Water Approx. 5' bls

Screen Type: Sch. 40 PVC
Diameter: 2"
Slot Size: 0.01"
Length: 10'

Bottom of Screen 13' bls

Total Depth of Bore Hole 13.5'

Bore Hole Diameter: 8¼"

Water Equipment Services, Inc.
6369 TOWER LANE
SARASOTA, FLORIDA 34240
PH. (813) 371-7617
FAX (813) 378-5218

MONITOR WELL CONSTRUCTION DETAIL

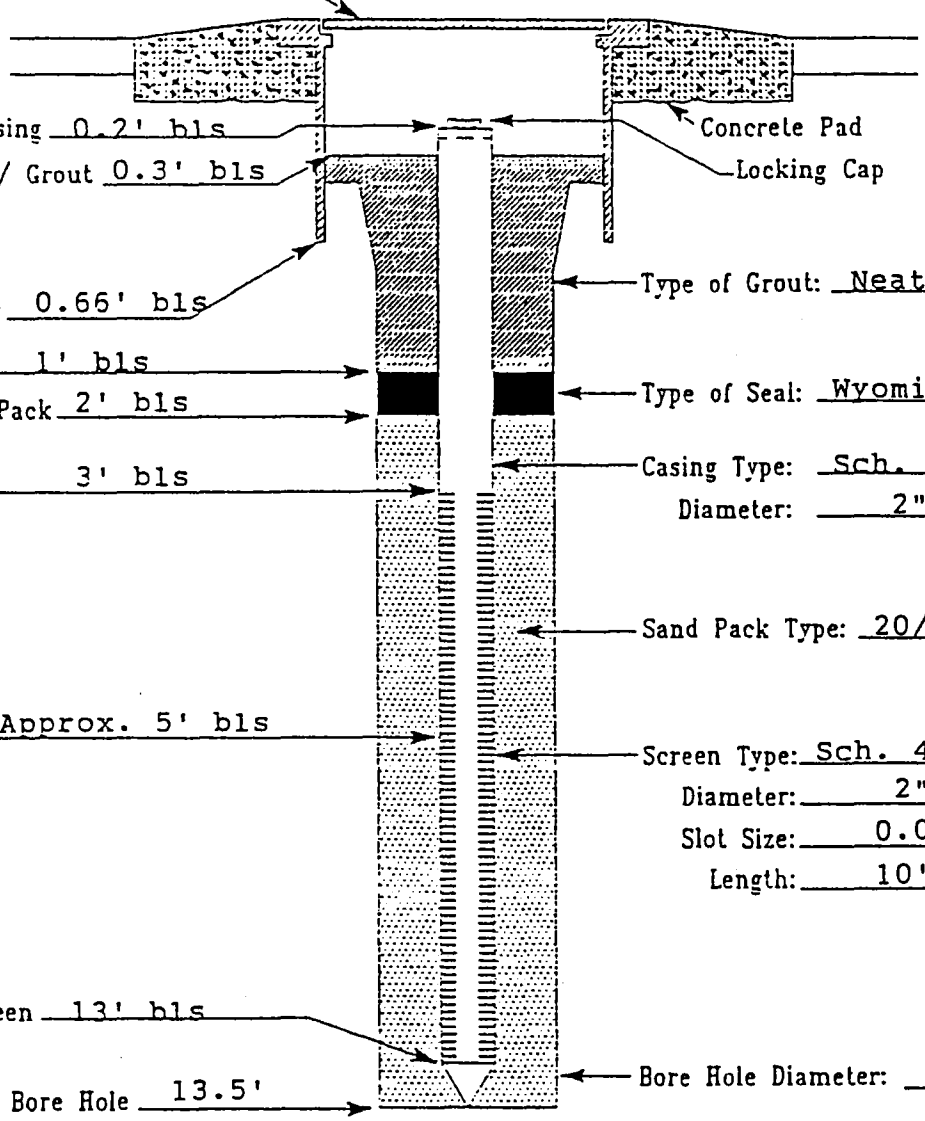
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: So. FL Test & Drill
DRILLER'S NAME: Cloyd Griffey
WELL NUMBER: MW-3
TOC ELEVATION:

CLIENT: ROICC, 520 Turner Bldg. 654
LOCATION: NAS, Pensacola, Florida
JOB NUMBER: N65114-95-D-2126 DO 0007
DATE: Start: 2/07/96 Finish: 2/07/96
TIME: Start: 1100 Finish: 1145

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

NOT TO SCALE

Depths in Reference to Ground Level



Top of Manhole 0.1' als

Vault Type/Size: Steel / 8"

Top of Well Casing 0.2' bls

Concrete Pad

Top of Cement/ Grout 0.3' bls

Locking Cap

Bottom of Manhole Casing 0.66' bls

Type of Grout: Neat Cement

Top of Seal 1' bls

Type of Seal: Wyoming Bentonite

Top of Gravel Pack 2' bls

Top of Screen 3' bls

Casing Type: Sch. 40 PVC
Diameter: 2"

Sand Pack Type: 20/30 Silica

Ground Water Approx. 5' bls

Screen Type: Sch. 40 PVC
Diameter: 2"
Slot Size: 0.01"
Length: 10'

Bottom of Screen 13' bls

Total Depth of Bore Hole 13.5'

Bore Hole Diameter: 8¼"

Water Equipment Services, Inc.
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MONITOR WELL CONSTRUCTION DETAIL

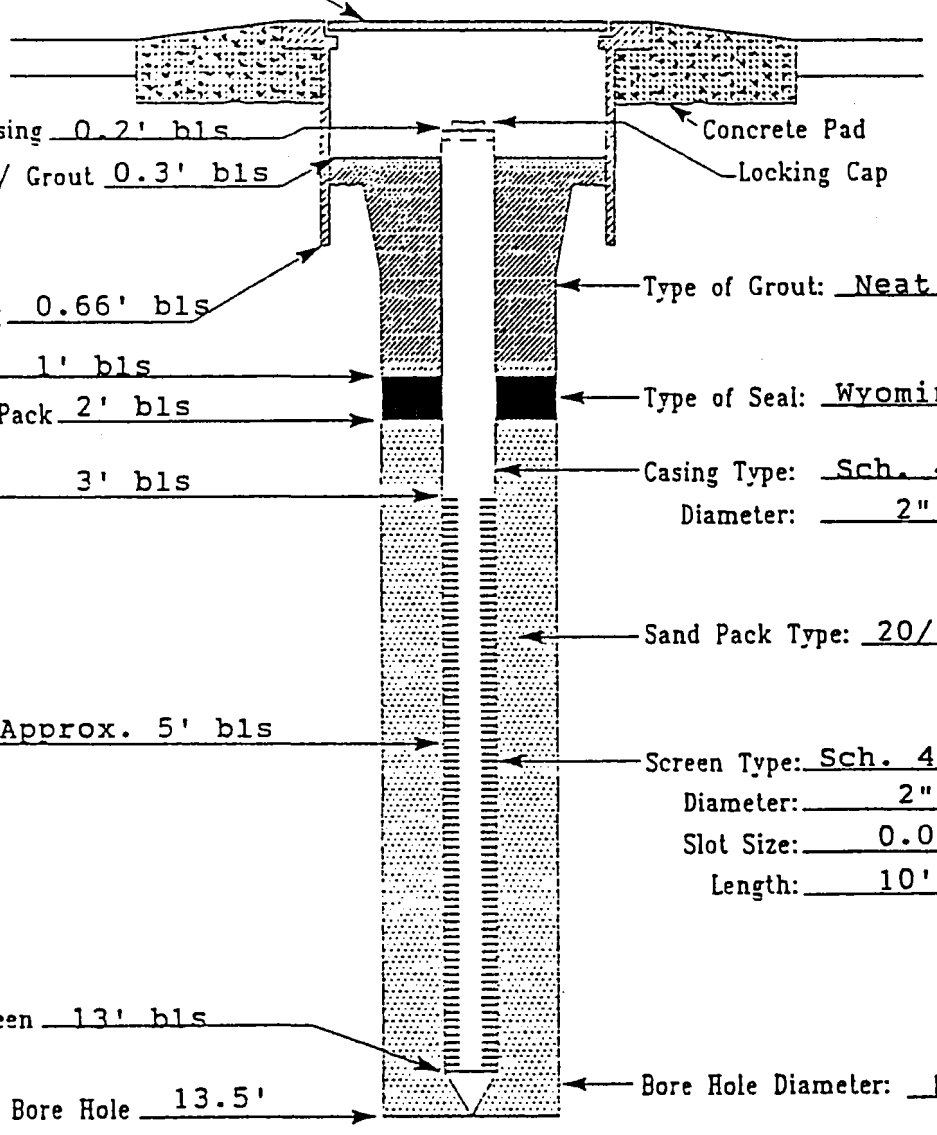
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: So. FL Test & Drill
DRILLER'S NAME: Cloyd Griffey
WELL NUMBER: MW-4
TOC ELEVATION:

CLIENT: ROICC, 520 Turner Bldg. 654
LOCATION: NAS, Pensacola, Florida
JOB NUMBER: N65114-95-D-2126 DO 0007
DATE: Start: 2/07/96 Finish: 2/07/96
TIME: Start: 1015 Finish: 1100

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

NOT TO SCALE

Depths in Reference to Ground Level



Top of Manhole 0.1' als

Vault Type/Size: Steel / 8"

Top of Well Casing 0.2' bls

Concrete Pad

Top of Cement/ Grout 0.3' bls

Locking Cap

Bottom of Manhole Casing 0.66' bls

Type of Grout: Neat Cement

Top of Seal 1' bls

Top of Gravel Pack 2' bls

Type of Seal: Wyoming Bentonite

Top of Screen 3' bls

Casing Type: Sch. 40 PVC
Diameter: 2"

Sand Pack Type: 20/30 Silica

Ground Water Approx. 5' bls

Screen Type: Sch. 40 PVC
Diameter: 2"
Slot Size: 0.01"
Length: 10'

Bottom of Screen 13' bls

Total Depth of Bore Hole 13.5'

Bore Hole Diameter: 8¼"

Water Equipment Services, Inc.
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MONITOR WELL CONSTRUCTION DETAIL

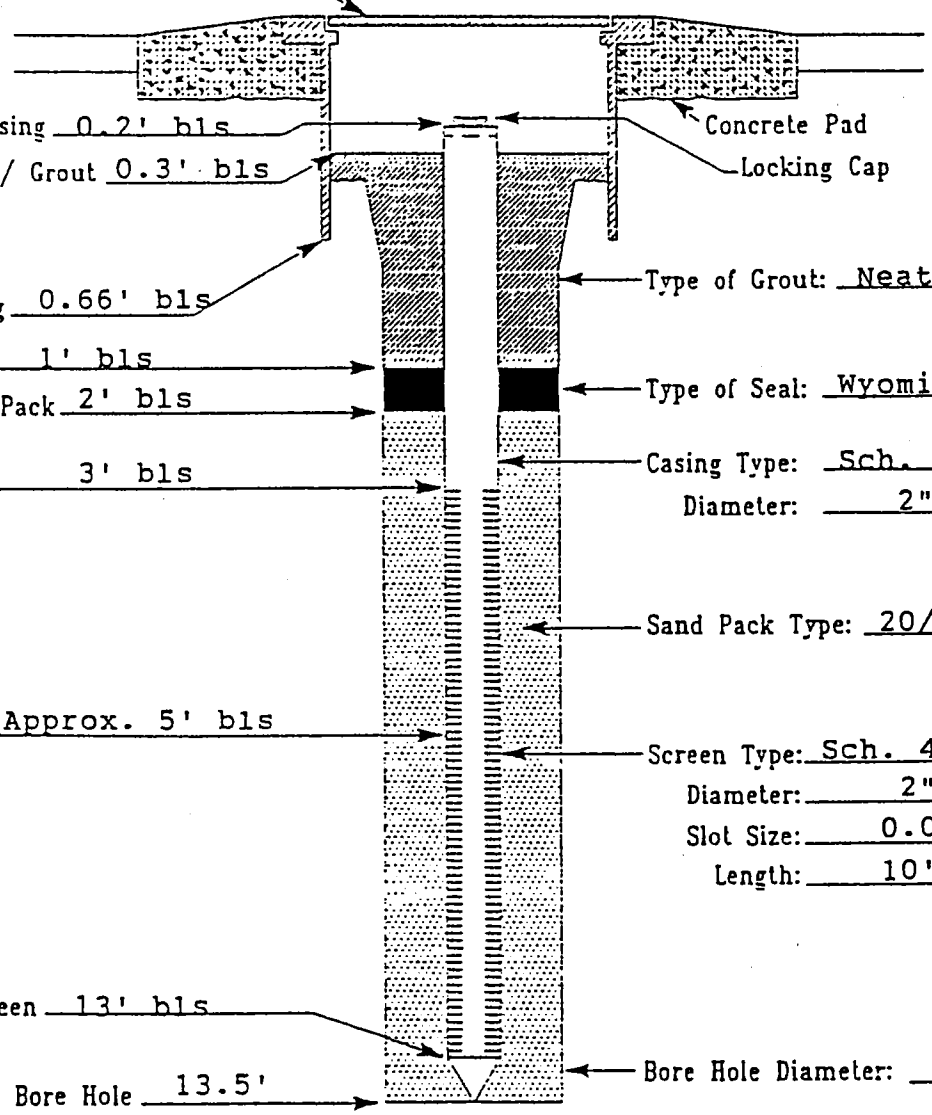
LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: So. FL Test & Drill
DRILLER'S NAME: Clovd Griffey
WELL NUMBER: MW-5
TOC ELEVATION:

CLIENT: ROICC, 520 Turner Bldg. 654
LOCATION: NAS, Pensacola, Florida
JOB NUMBER: N65114-95-D-2126 DO 0007
DATE: Start: 2/07/96 Finish: 2/07/96
TIME: Start: 0830 Finish: 0915

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):

NOT TO SCALE

Depths in Reference to Ground Level



Top of Manhole 0.1' als

Vault Type/Size: Steel / 8"

Top of Well Casing 0.2' bls

Concrete Pad

Top of Cement/ Grout 0.3' bls

Locking Cap

Bottom of Manhole Casing 0.66' bls

Type of Grout: Neat Cement

Top of Seal 1' bls

Type of Seal: Wyoming Bentonite

Top of Gravel Pack 2' bls

Top of Screen 3' bls

Casing Type: Sch. 40 PVC
Diameter: 2"

Sand Pack Type: 20/30 Silica

Ground Water Approx. 5' bls

Screen Type: Sch. 40 PVC
Diameter: 2"
Slot Size: 0.01"
Length: 10'

Bottom of Screen 13' bls

Total Depth of Bore Hole 13.5'

Bore Hole Diameter: 8¼"

W.E.S., Inc.
Environmental Division

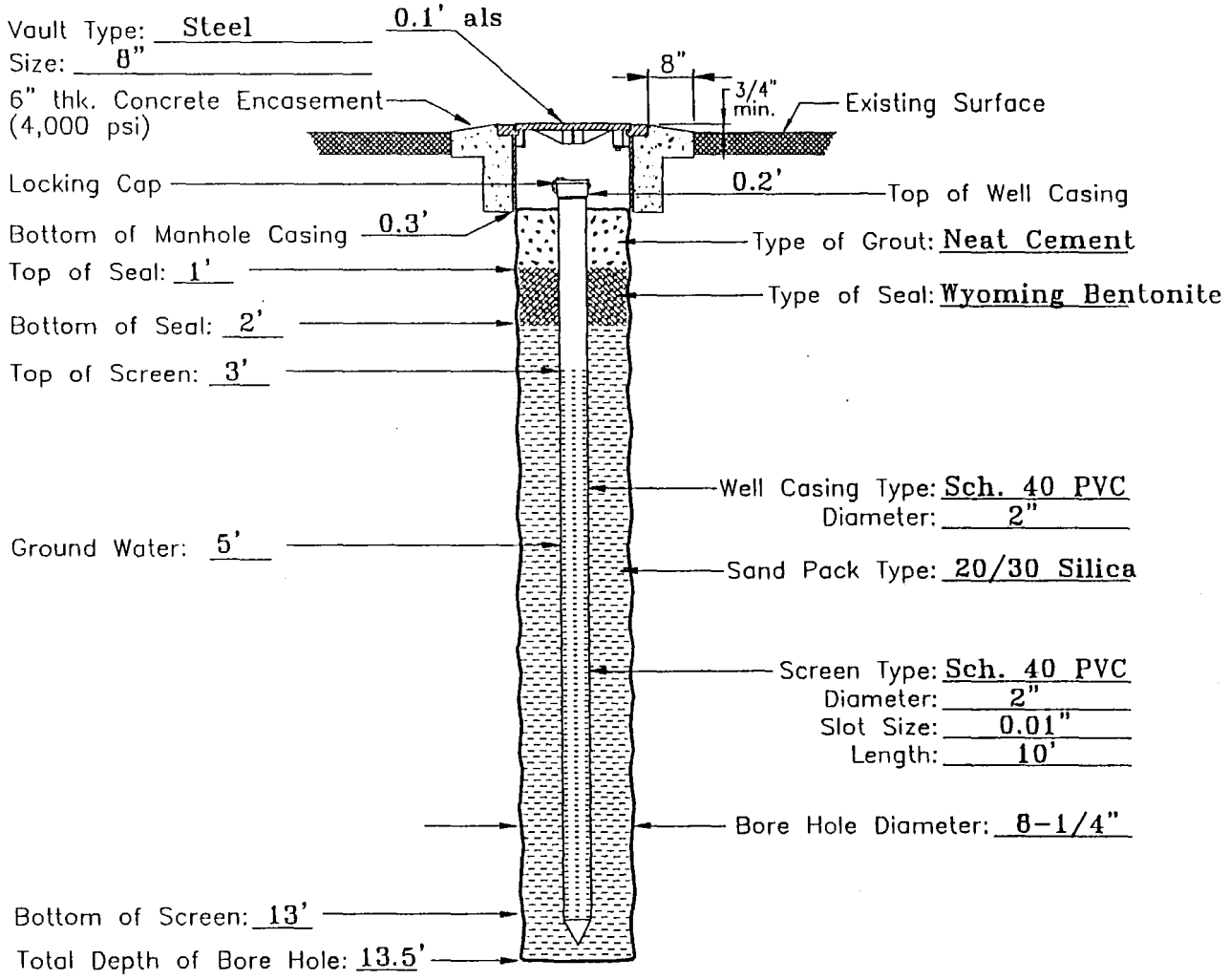
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-6

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 0830 Finish: 0910

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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Environmental Division

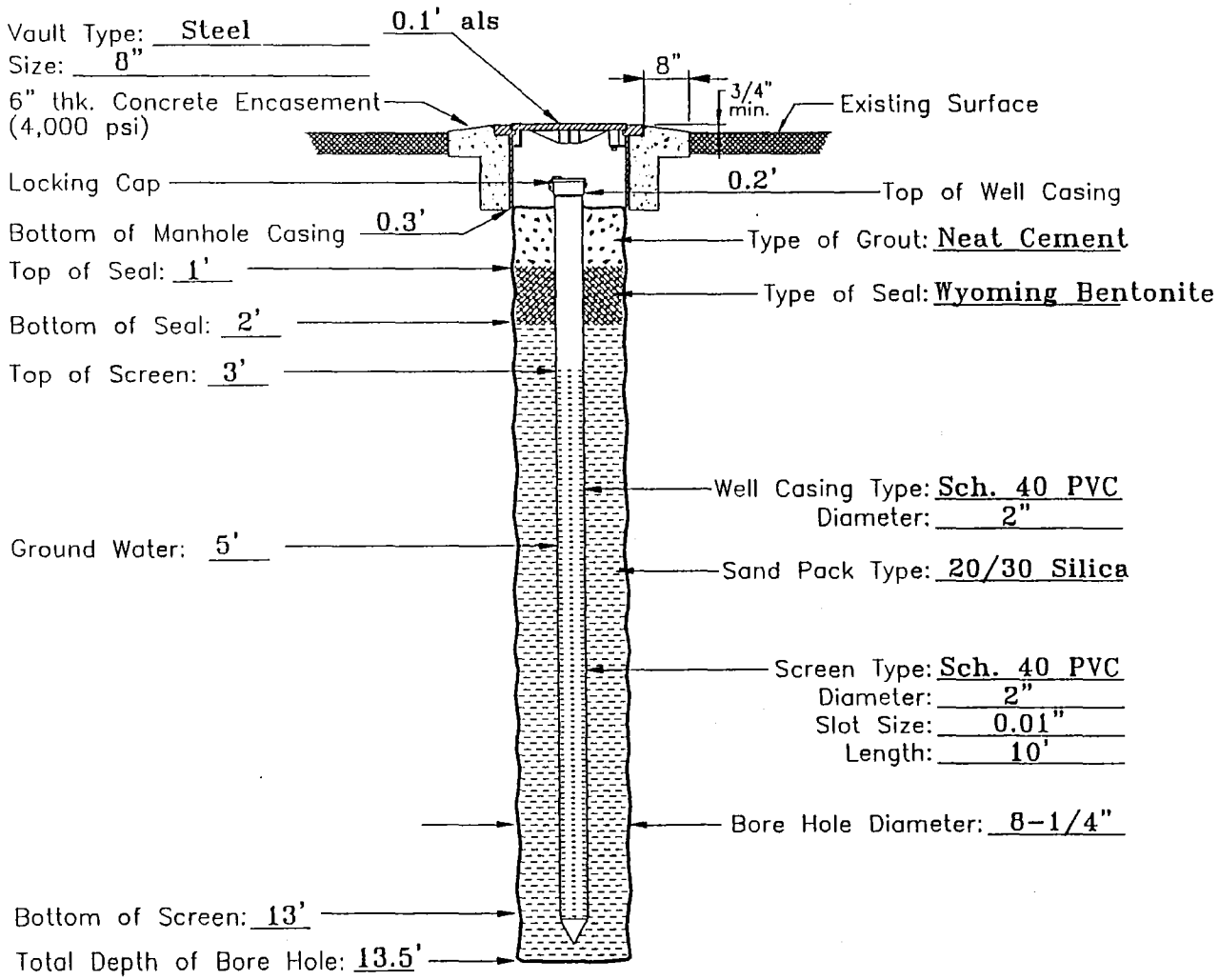
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-7

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 0910 Finish: 0945

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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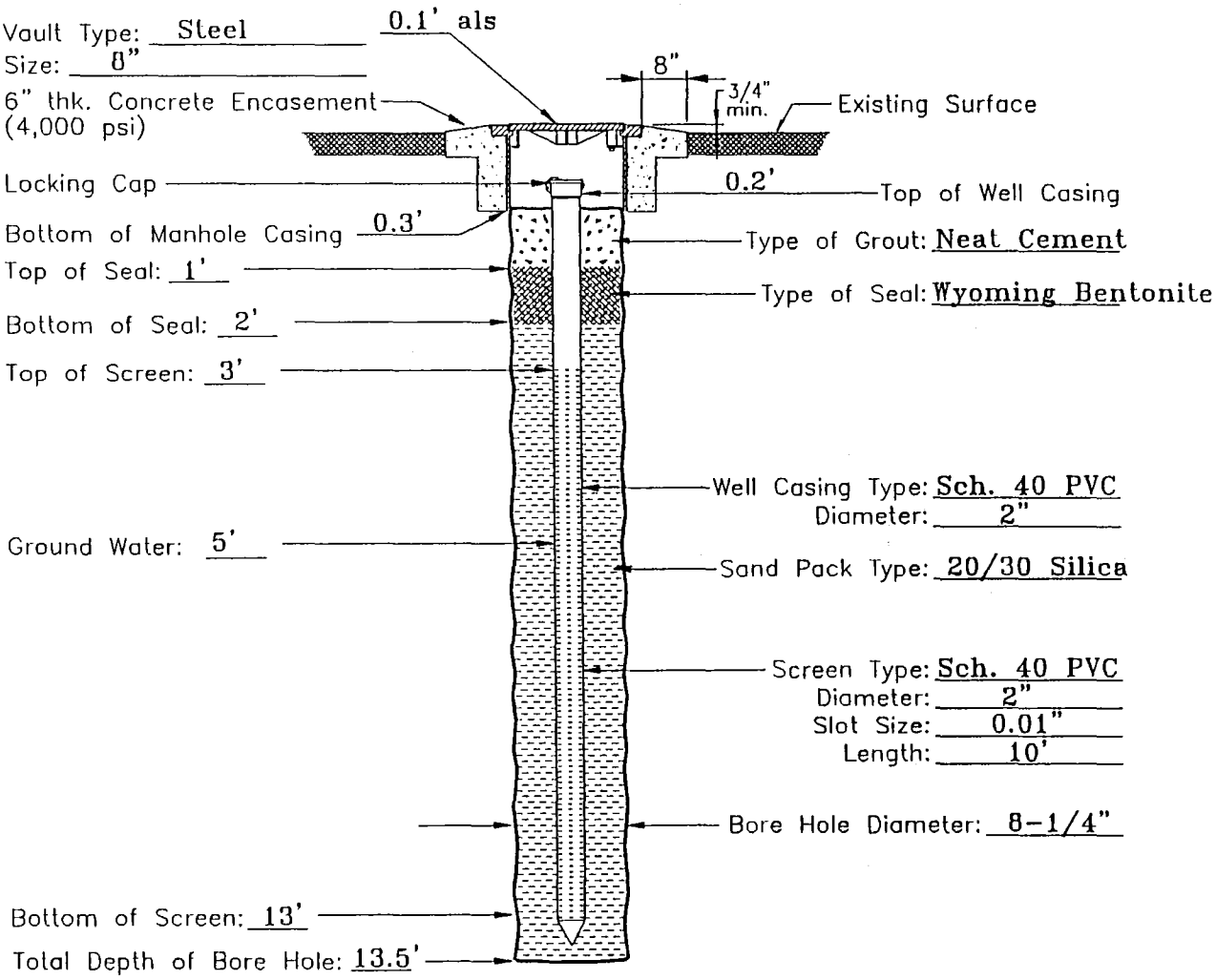
Environmental Division
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 370-5210 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-8

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 0950 Finish: 1020

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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W.E.S., Inc.
Environmental Division

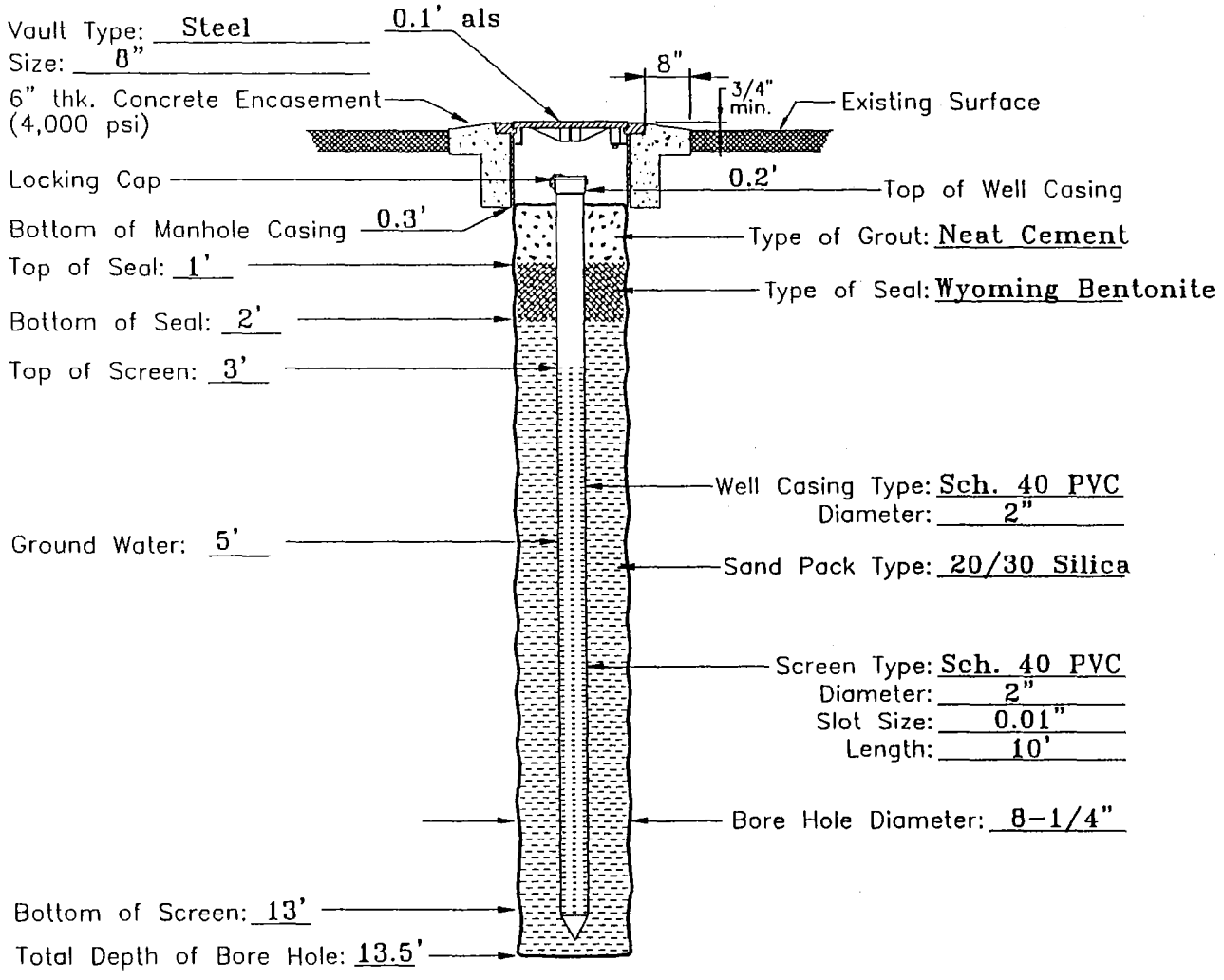
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-6810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-9

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 1025 Finish: 1050

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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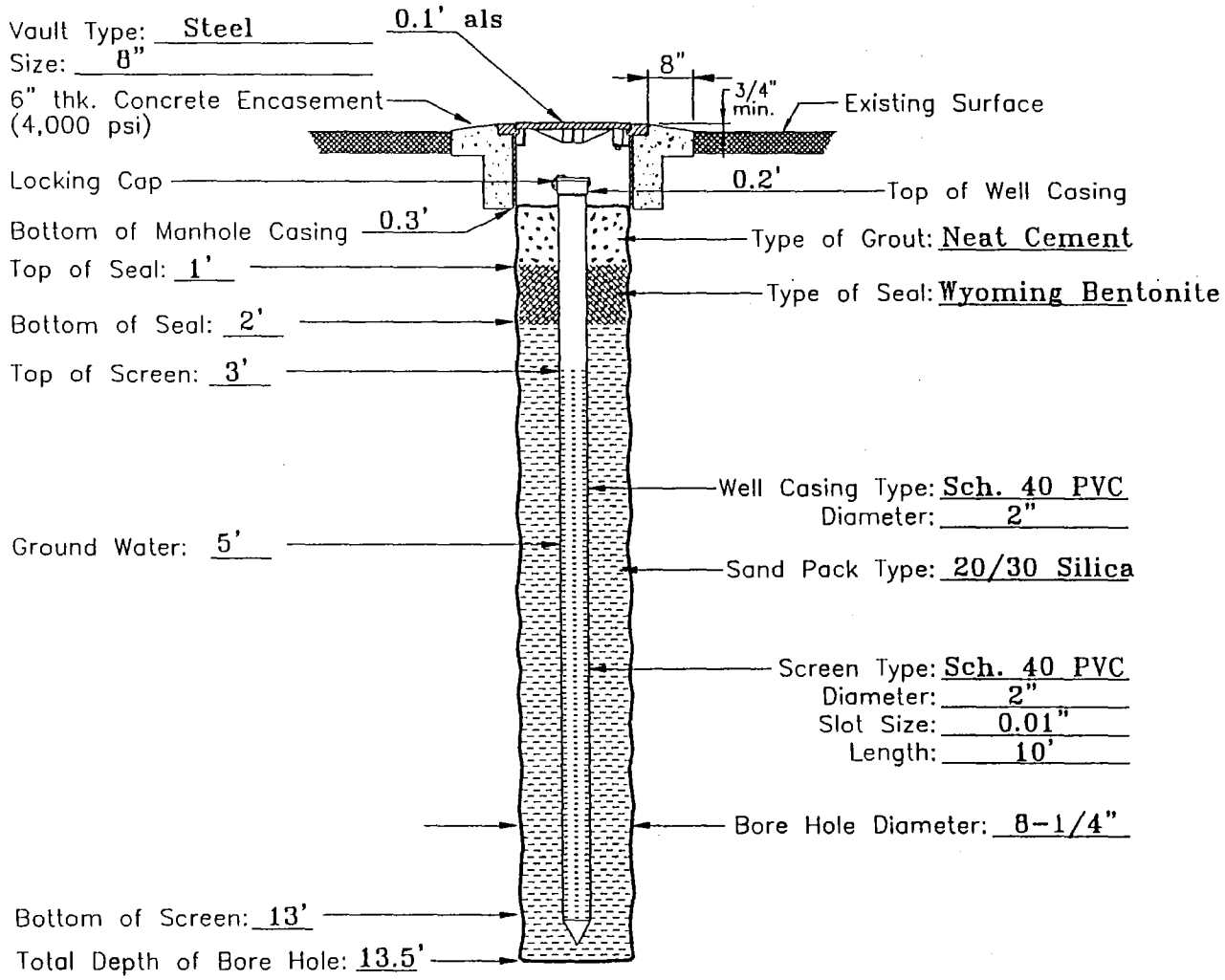
W.E.S., Inc.
Environmental Division
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-10

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 1100 Finish: 1140

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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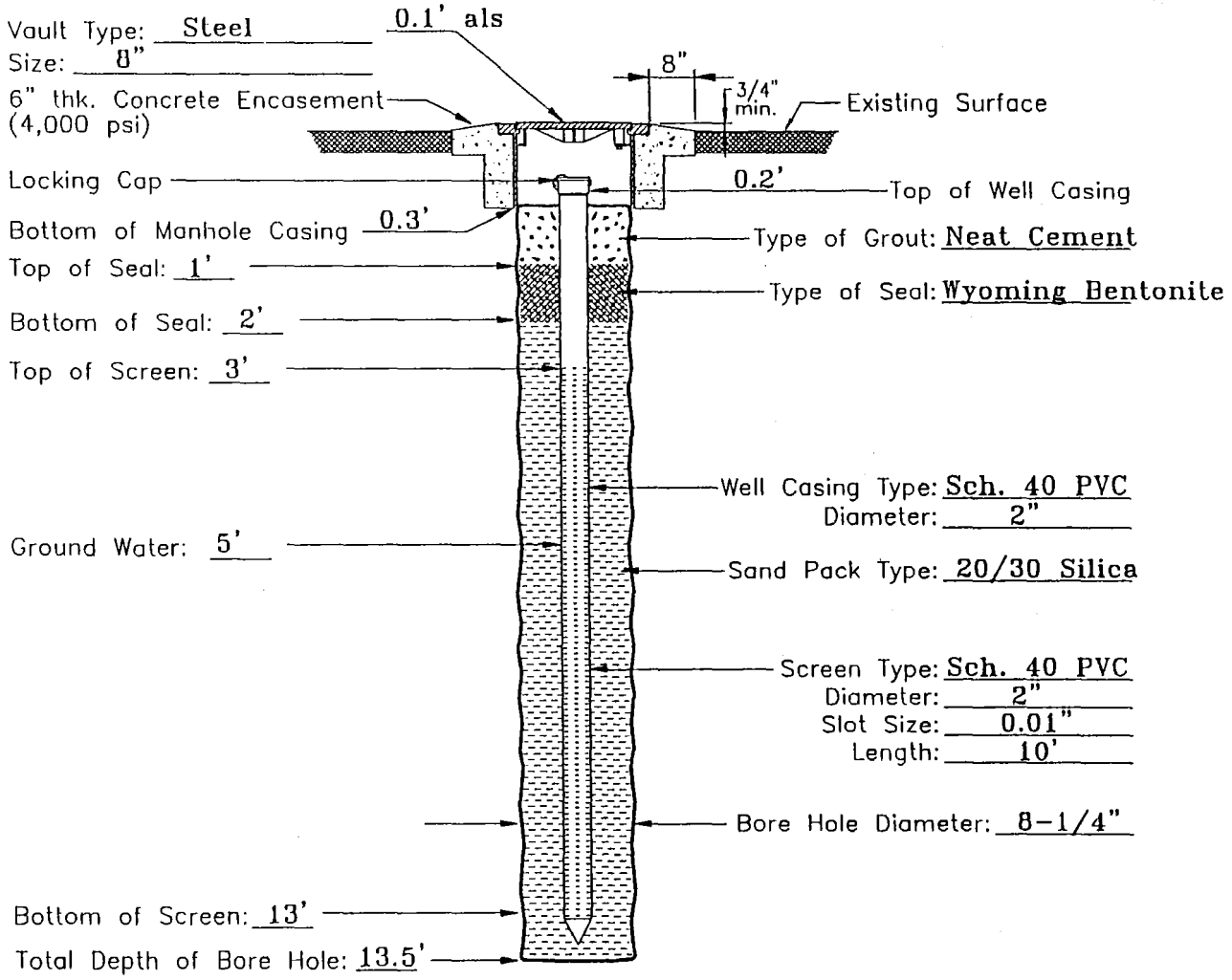
Environmental Division
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-11

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 1145 Finish: 1230

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

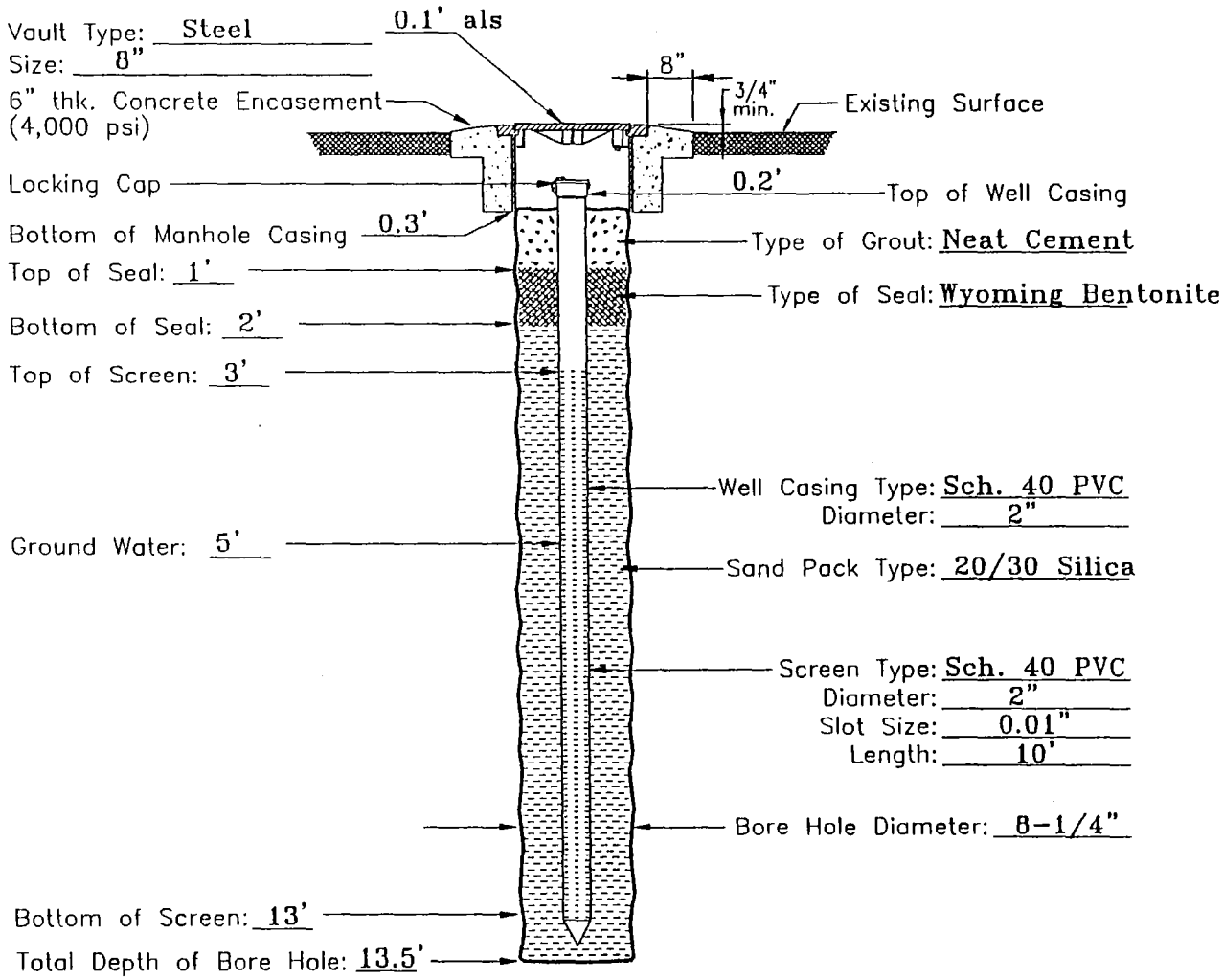
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-12

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 1330 Finish: 1410

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

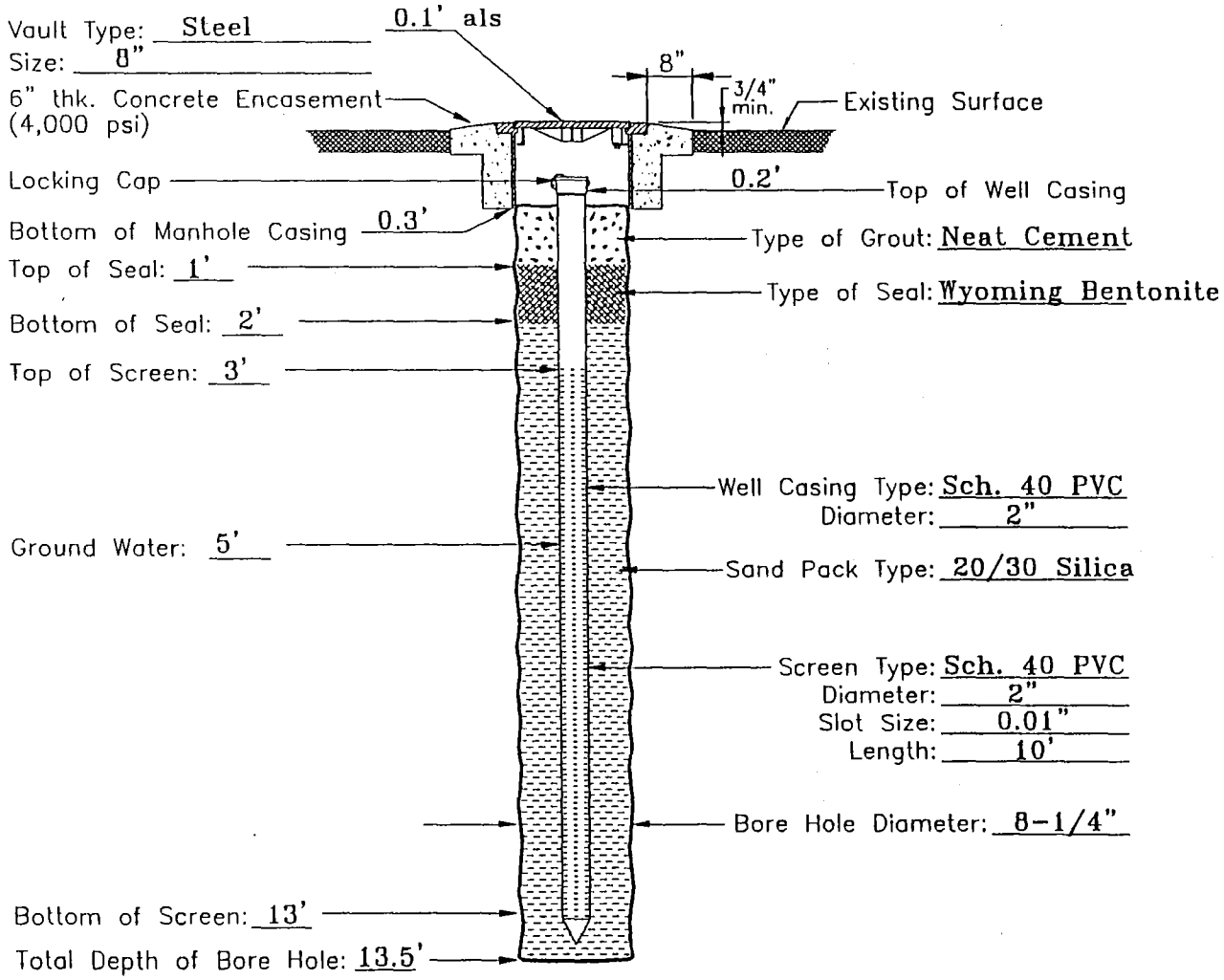
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 370-5210 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-13

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 7/25/96 Finish: 7/25/96
TIME Start: 1415 Finish: 1445

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division
6389 Tower Lane
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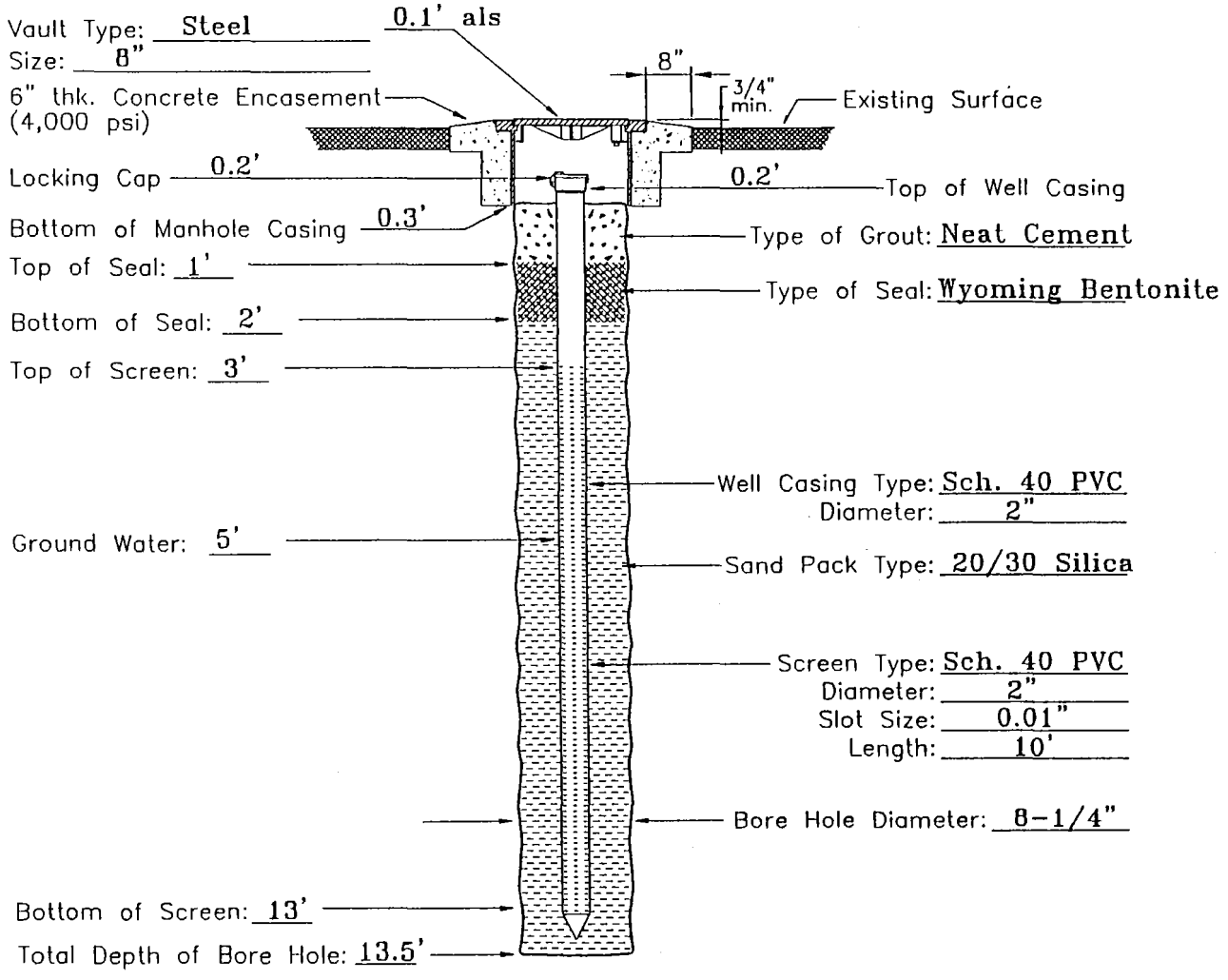
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-14

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/29/96 Finish: 8/29/96
TIME Start: 1000 Finish: 1030

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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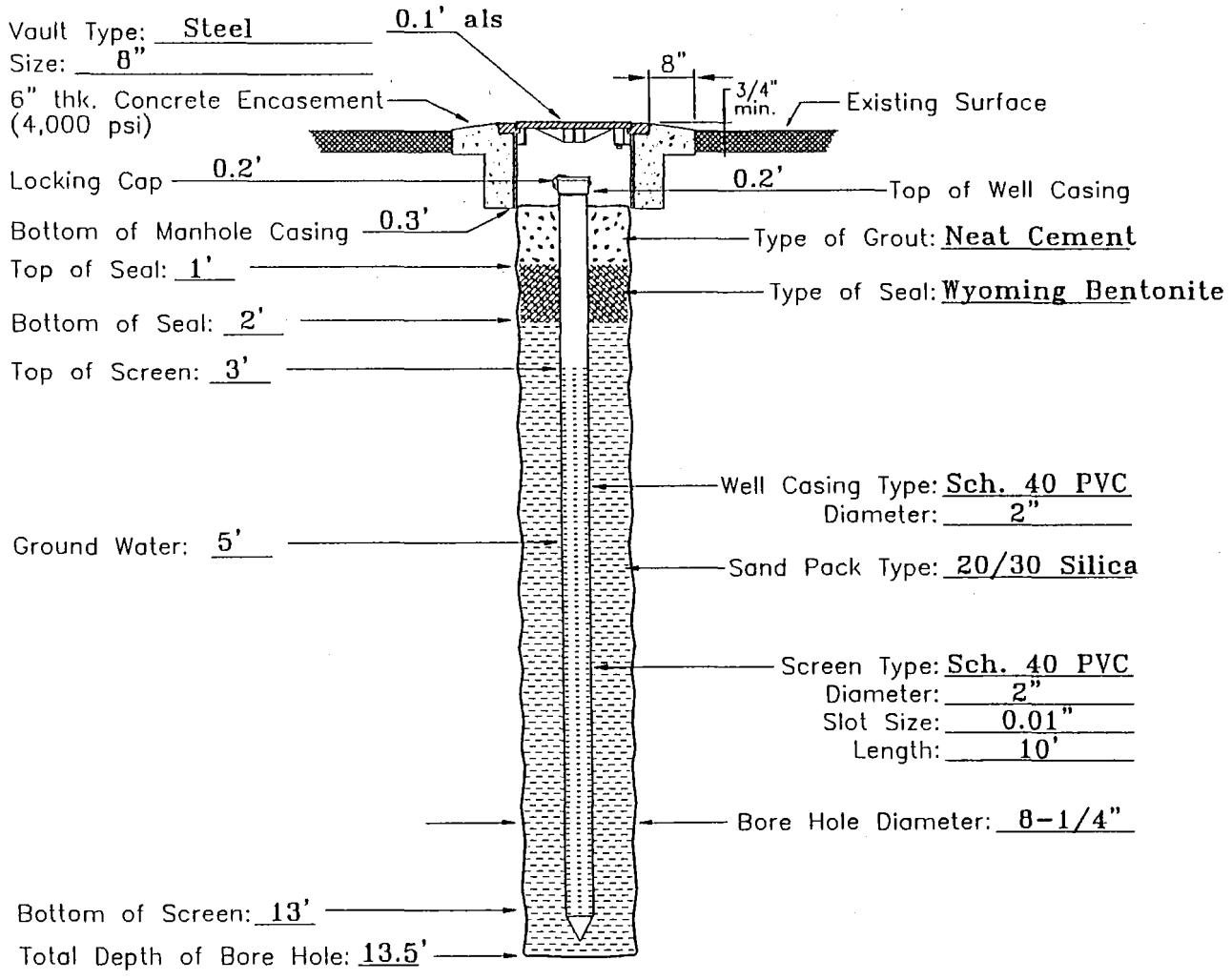
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-15

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/29/96 Finish: 8/29/96
TIME Start: 1035 Finish: 1105

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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Environmental Division

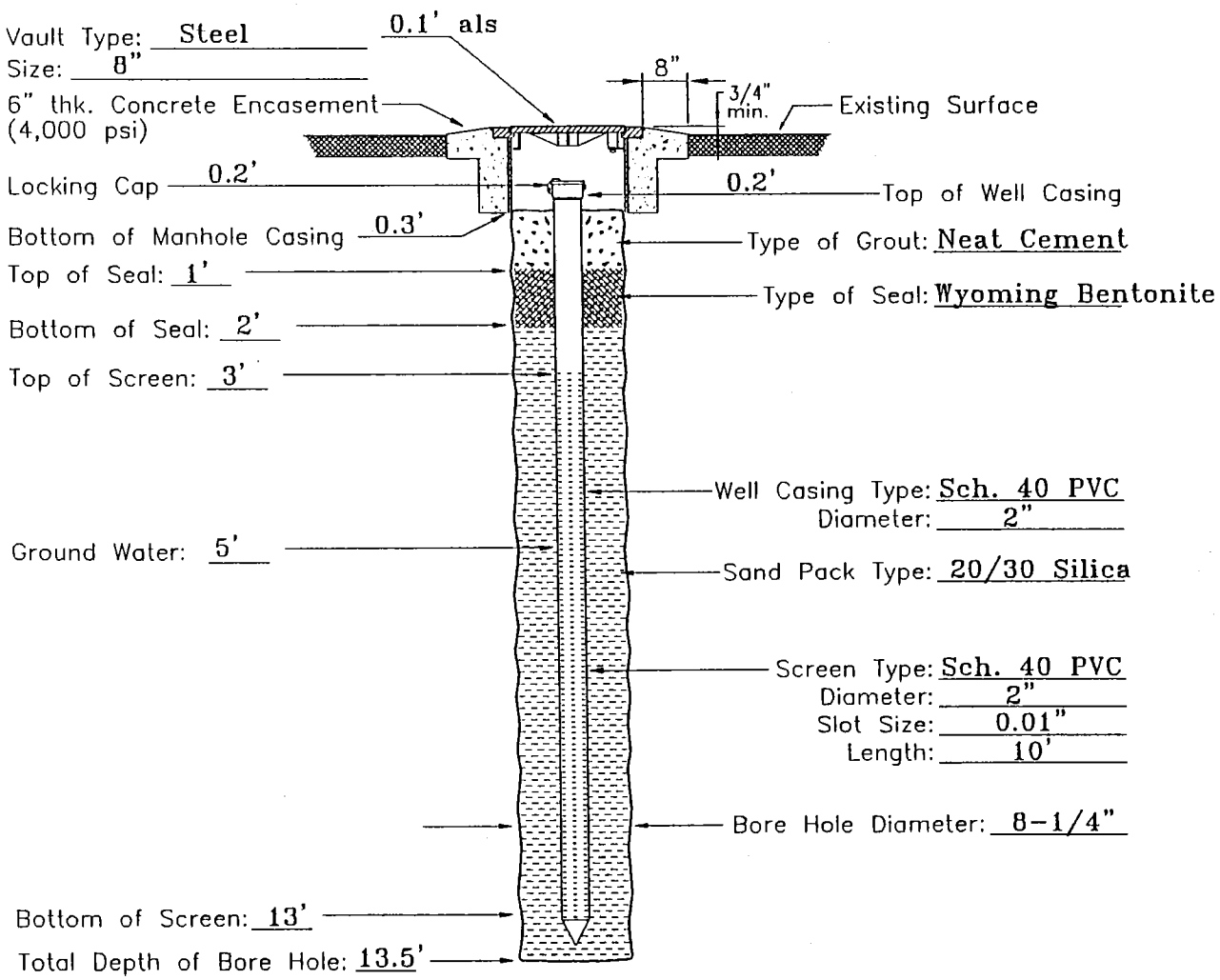
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-16

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/29/96 Finish: 8/29/96
TIME Start: 1110 Finish: 1130

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

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Environmental Division

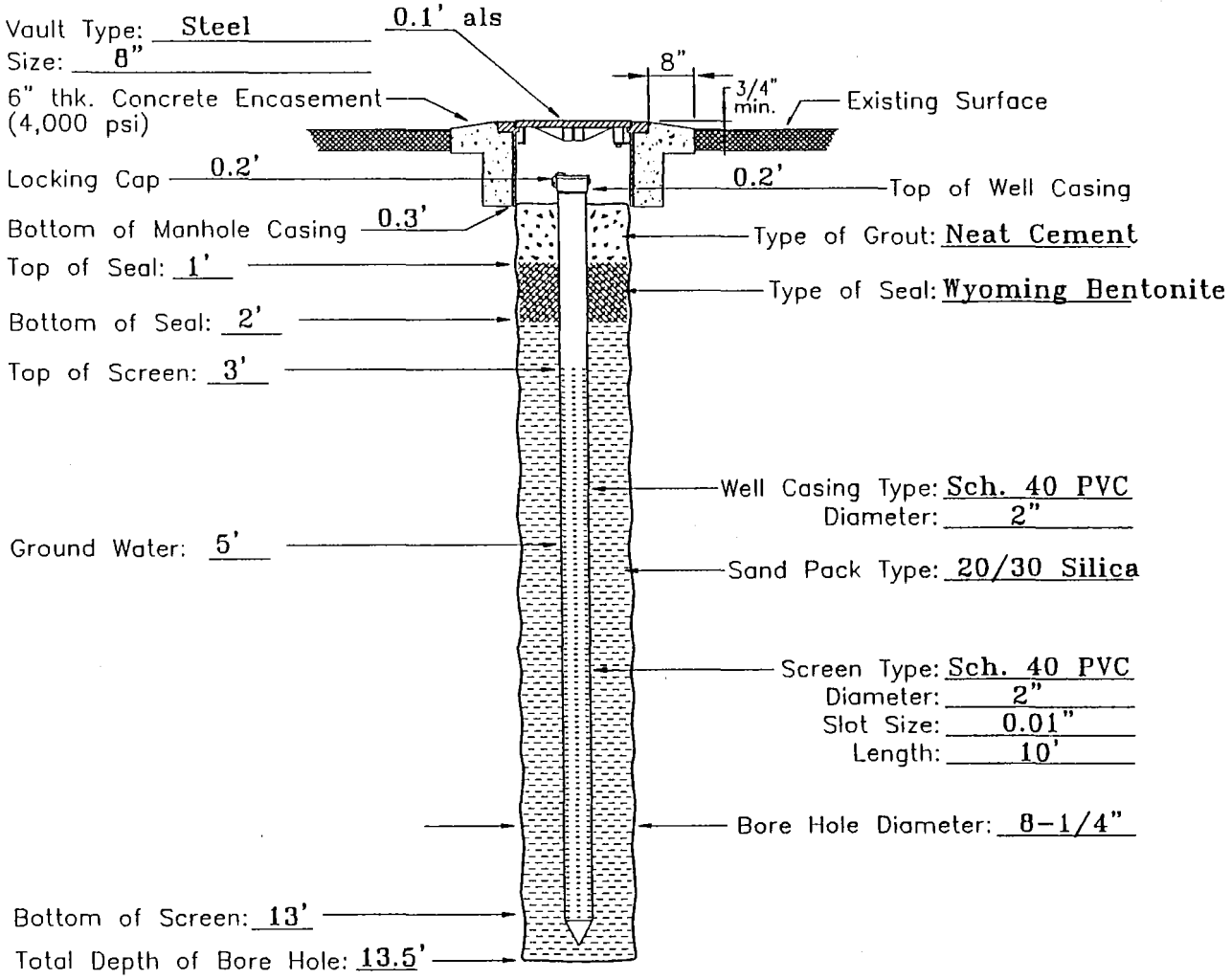
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-17

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/29/96 Finish: 8/29/96
TIME Start: 1135 Finish: 1200

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

A-17

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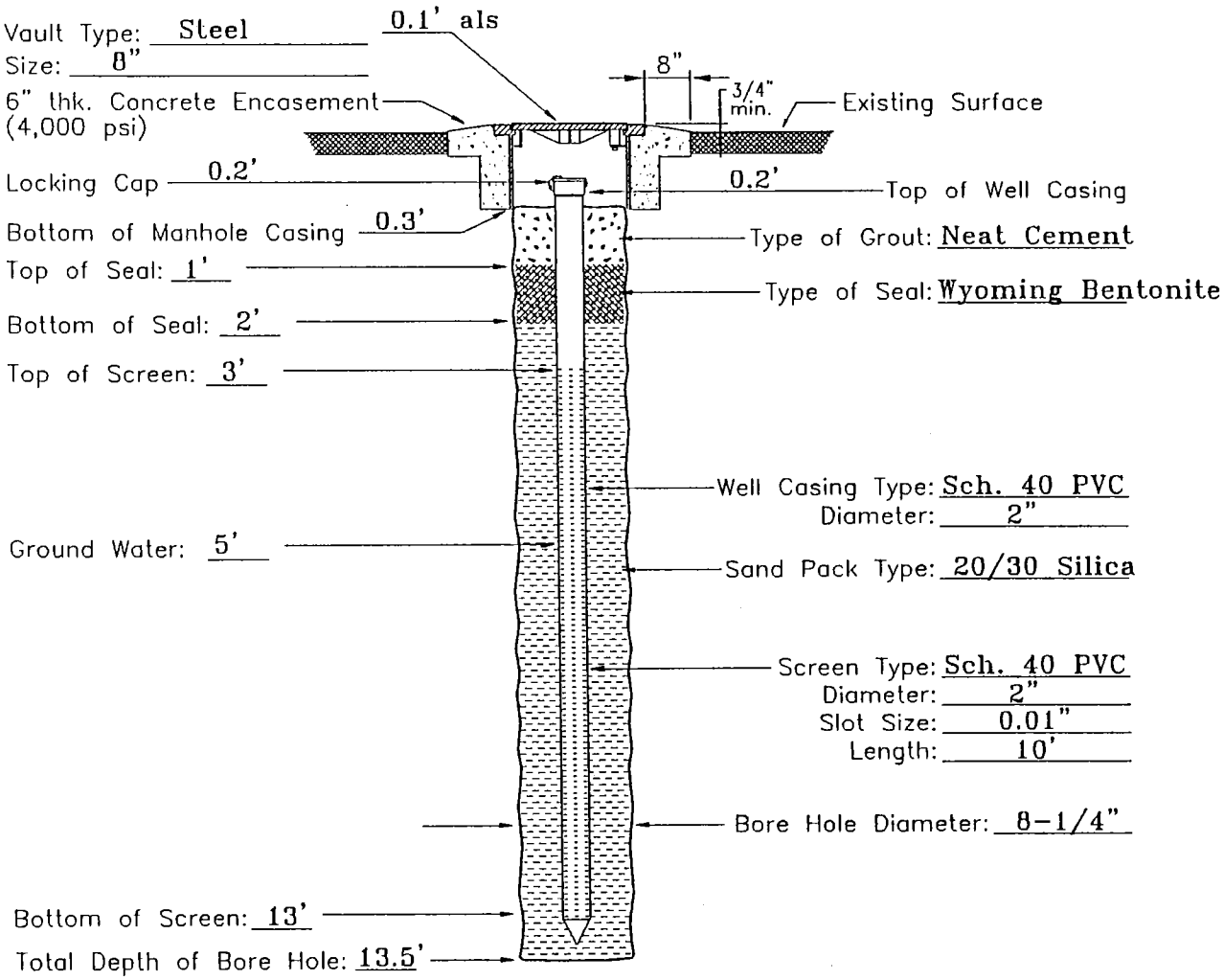
Environmental Division
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-18

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 8/29/96 Finish: 8/29/96
TIME Start: 1205 Finish: 1240

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

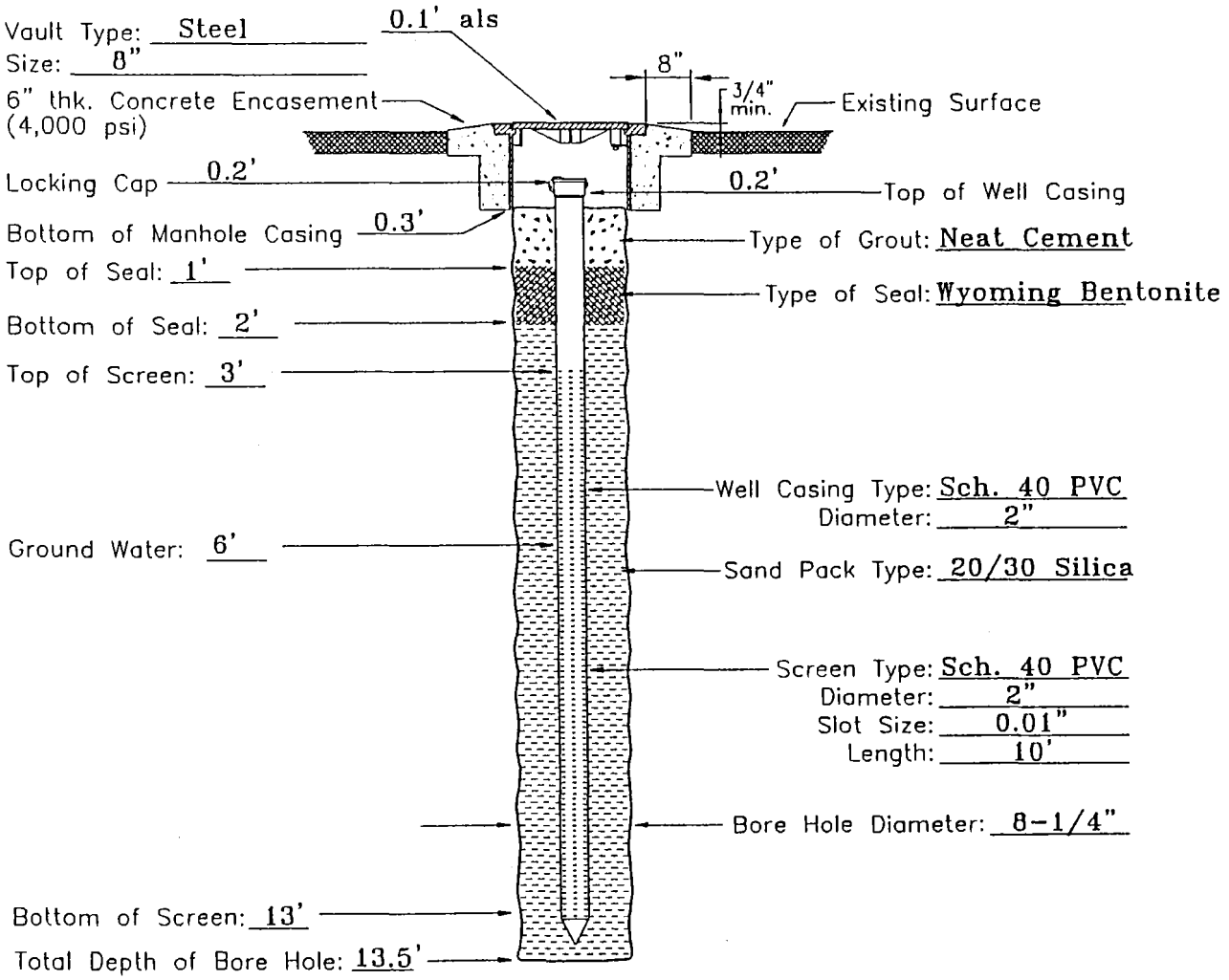
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-19

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 9/10/96 Finish: 9/10/96
TIME Start: 1300 Finish: 1345

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

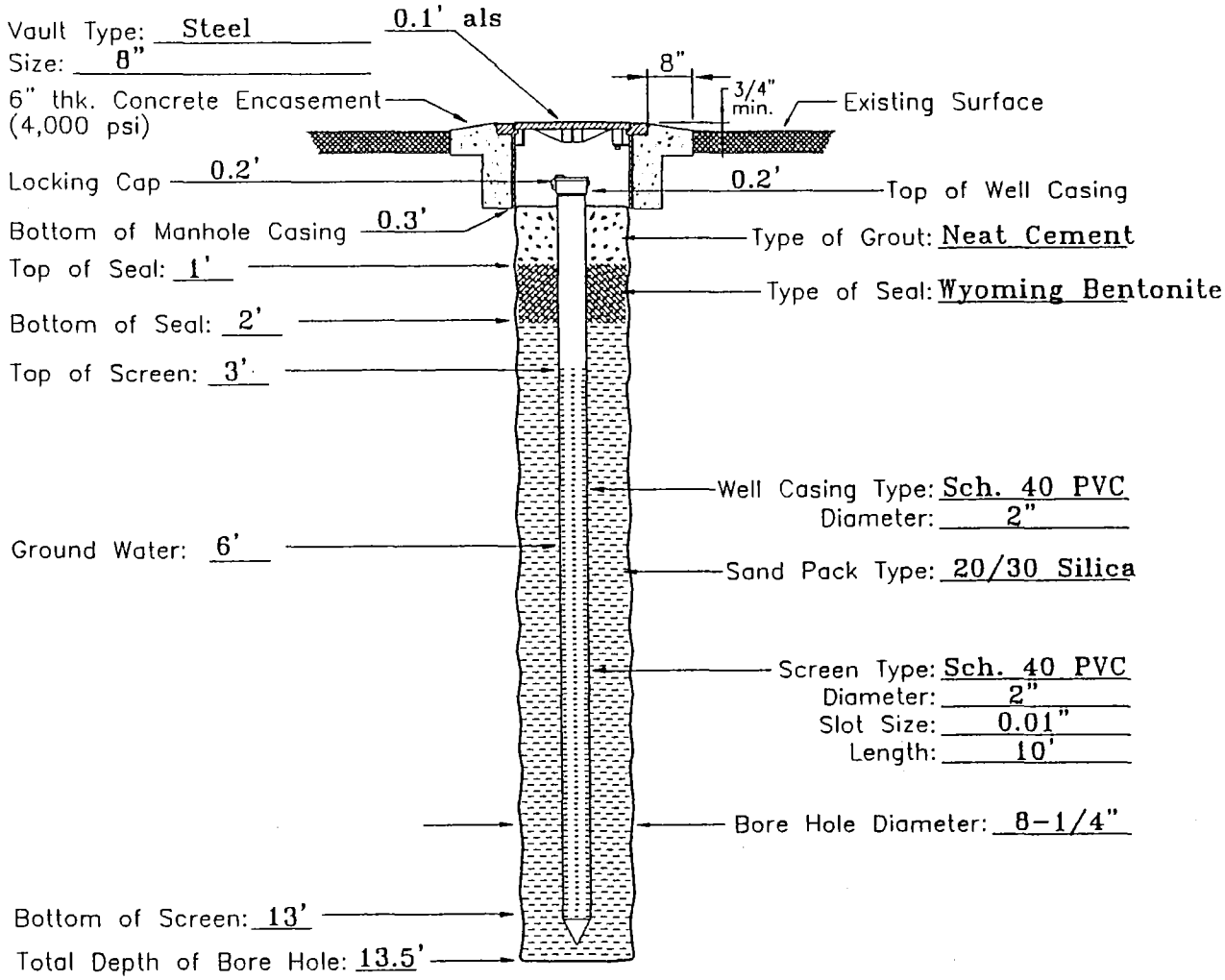
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-20

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 9/10/96 Finish: 9/10/96
TIME Start: 1345 Finish: 1430

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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Environmental Division

MONITOR WELL CONSTRUCTION DETAIL

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Sarasota, FL 34240-8810
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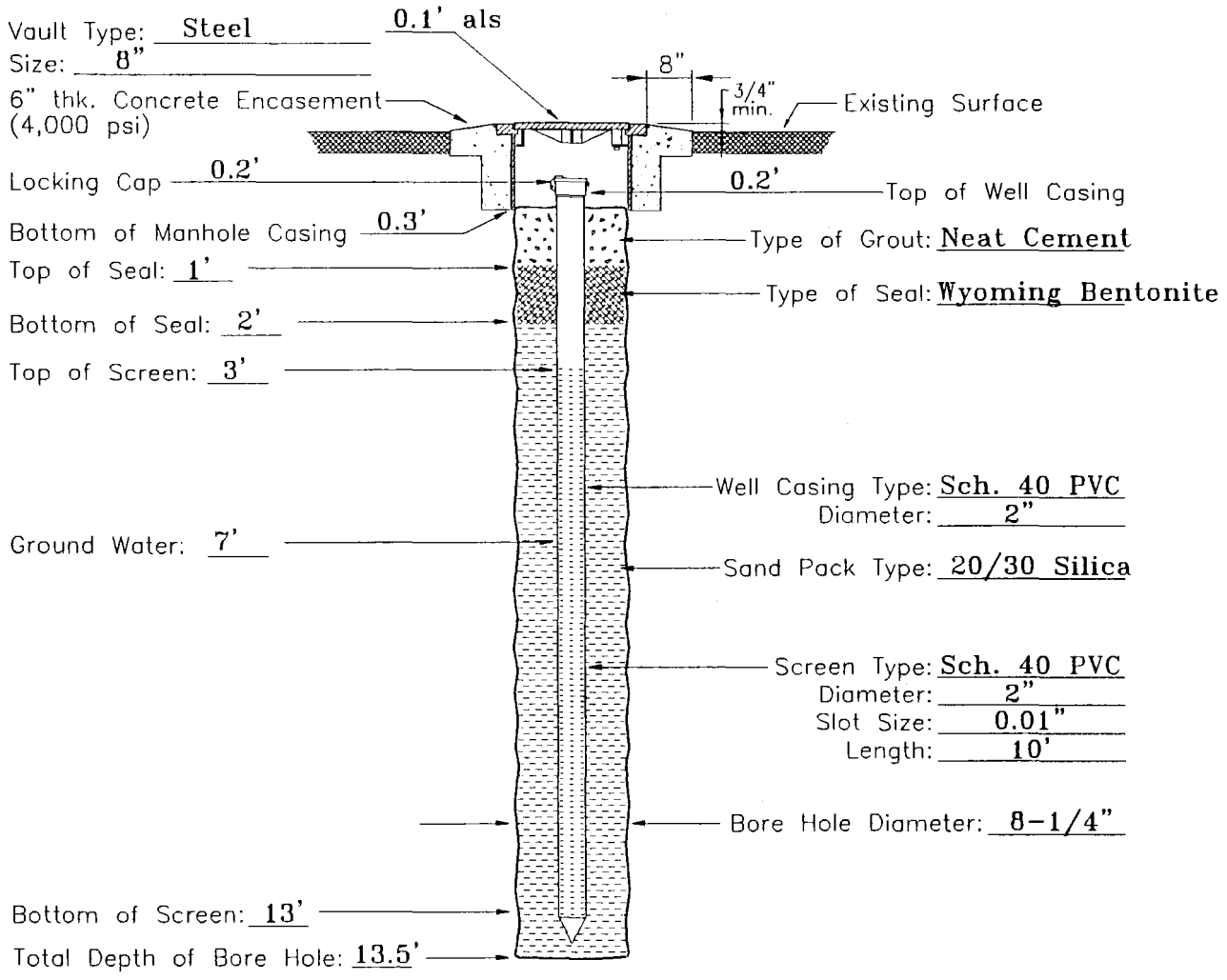
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-21

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 11/06/96 Finish: 11/06/96
TIME Start: 1000 Finish: 1045

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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Environmental Division

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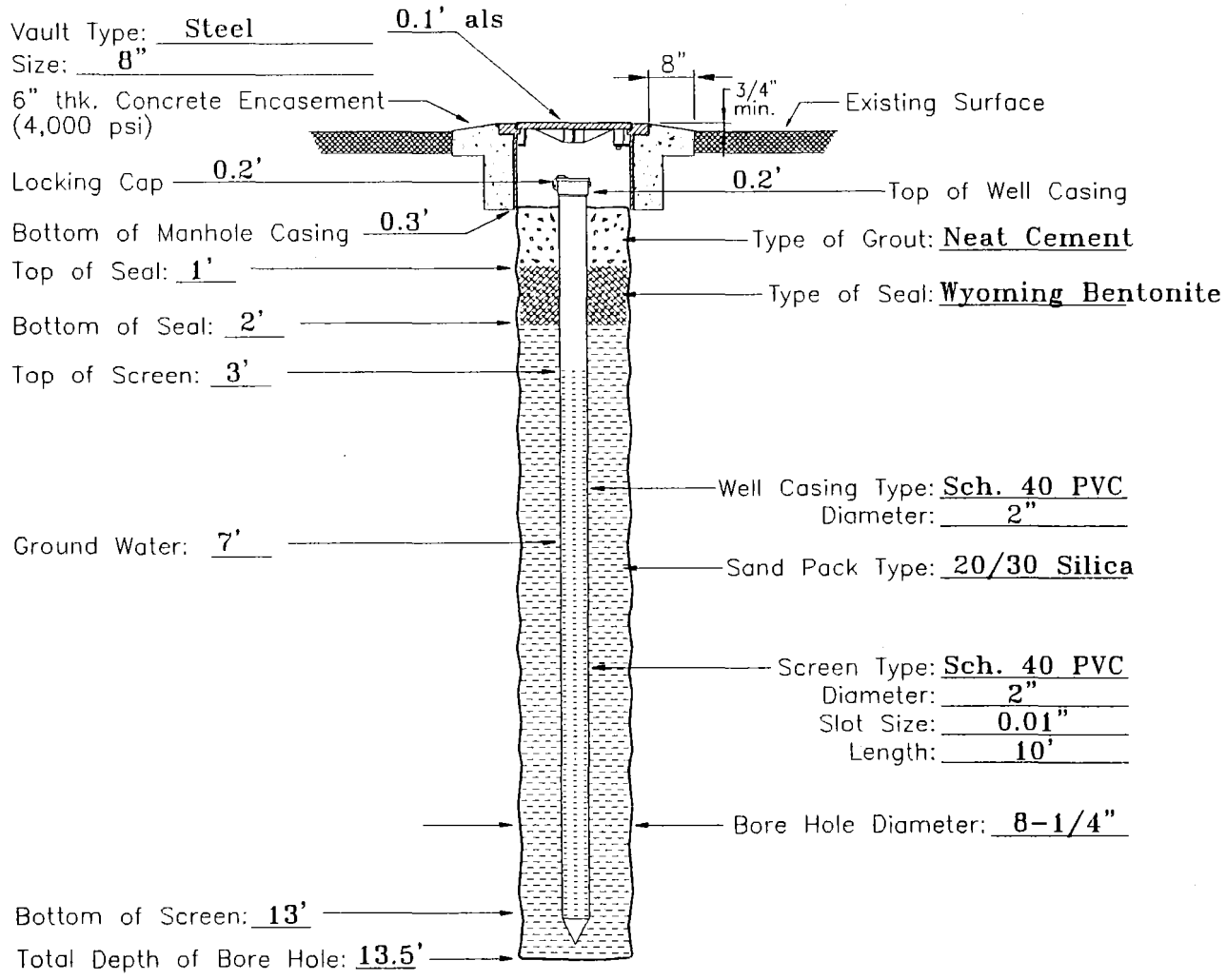
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-22

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 11/06/96 Finish: 11/06/96
TIME Start: 1100 Finish: 1145

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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Environmental Division

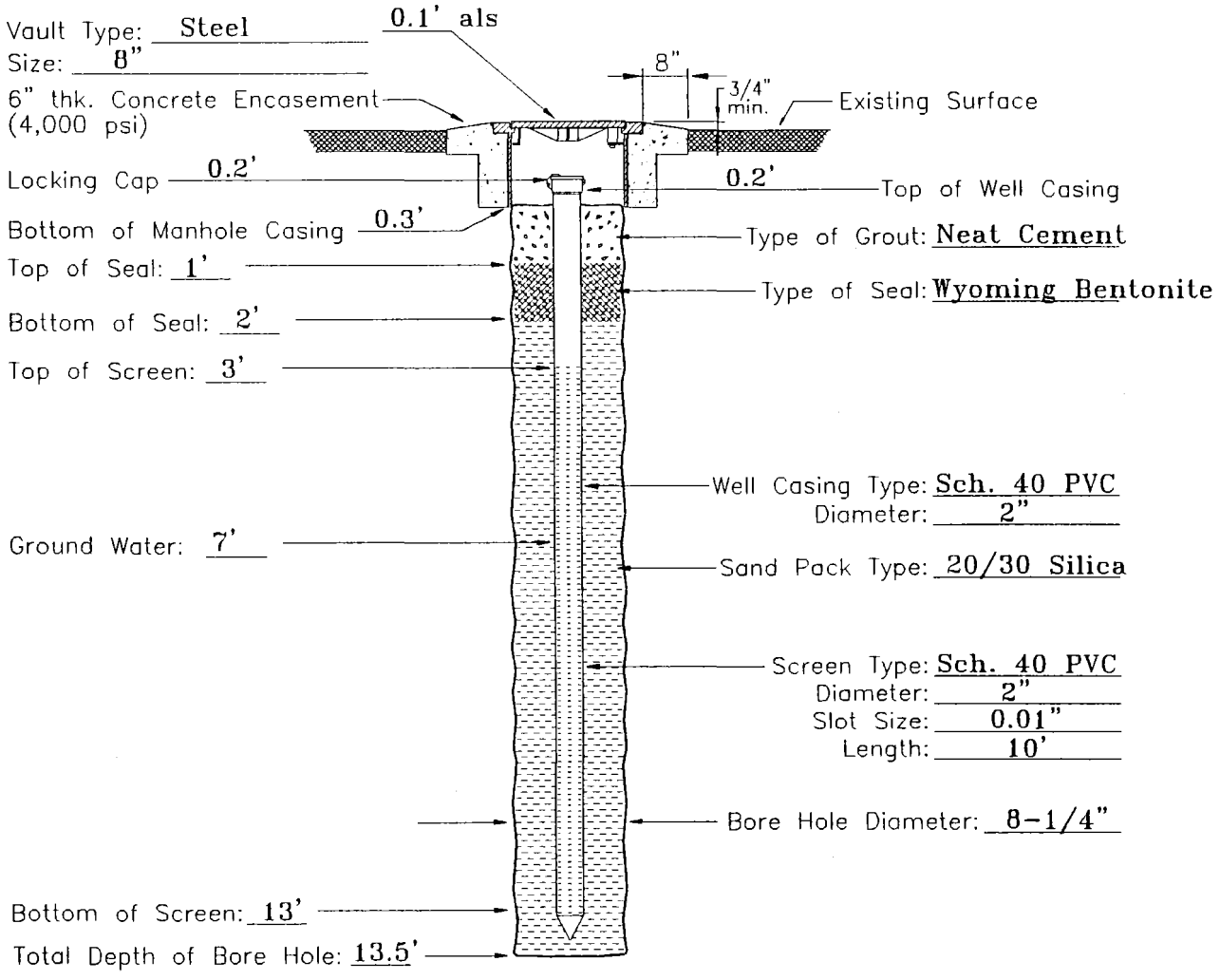
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5210 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-23

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 11/06/96 Finish: 11/06/96
TIME Start: 1145 Finish: 1230

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

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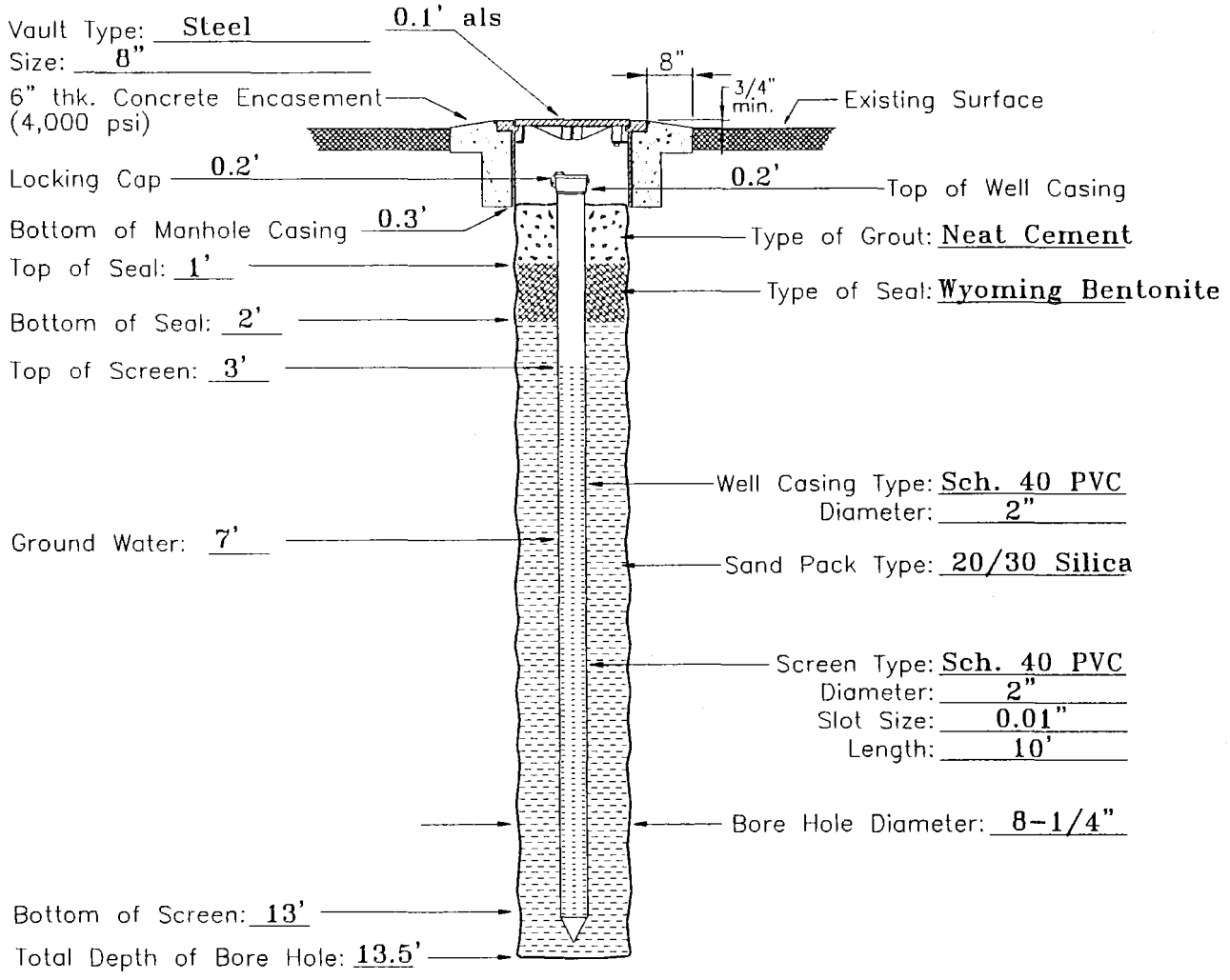
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-24

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 11/06/96 Finish: 11/06/96
TIME Start: 1400 Finish: 1430

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

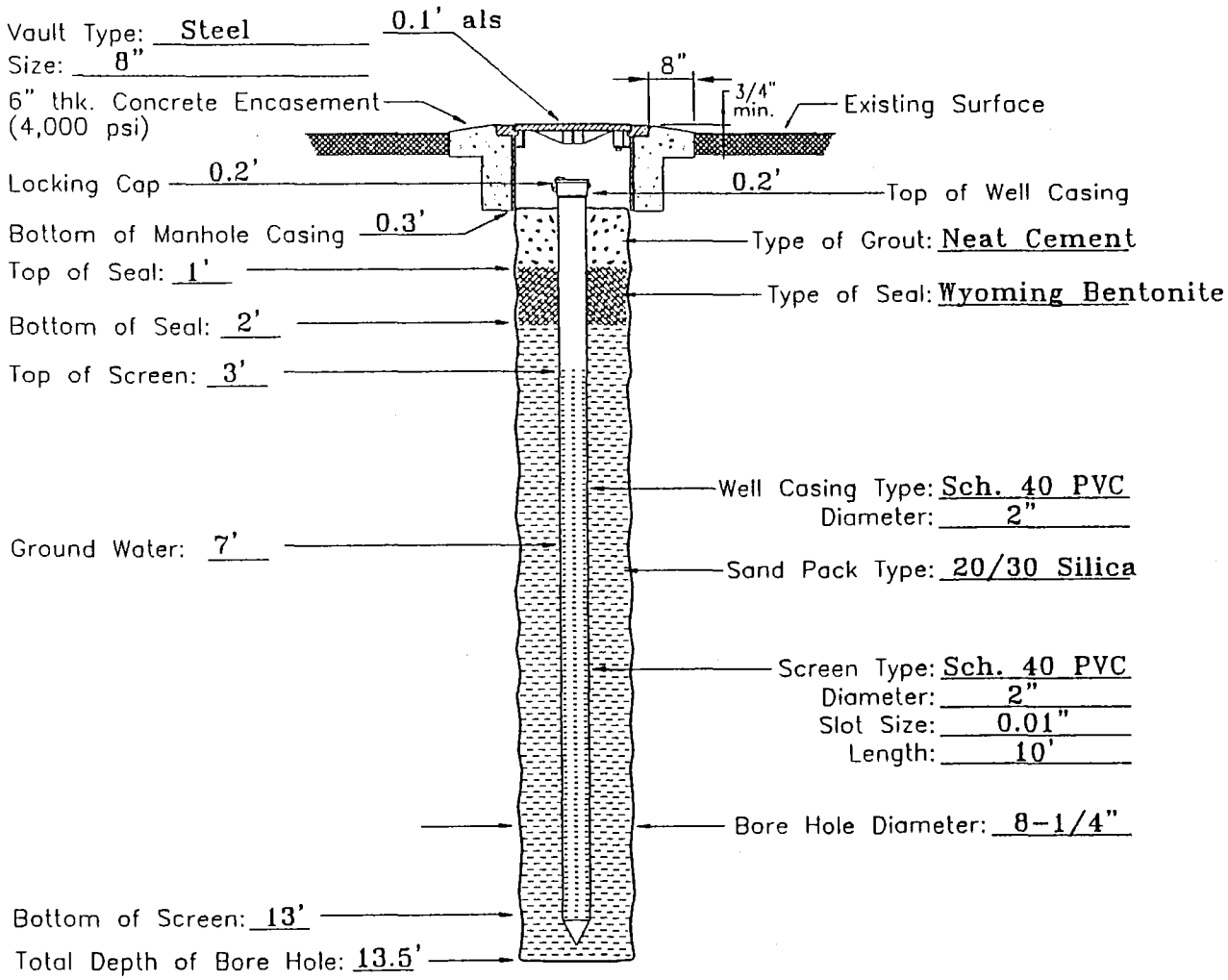
MONITOR WELL CONSTRUCTION DETAIL

6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-25

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 21, Naval Air Station
JOB NUMBER: N65114-95-D-2126
DATE Start: 11/06/96 Finish: 11/06/96
TIME Start: 1430 Finish: 1500

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

APPENDIX B

GROUNDWATER FLOW VELOCITY CALCULATIONS

GROUNDWATER FLOW VELOCITY CALCULATIONS

$$V = Ki/n$$

Where
- V = groundwater flow velocity
- K = hydraulic conductivity* (as an average of Geraghty & Miller (1987), Site 3810 N (1992) and Site 3221 SW (1993 = 48.3 ft/day
- i = gradient (elevation/distance)
- n = porosity, estimated at 25%

May 4, 1997 $i = \frac{28.59' - 28.4'}{30} = 0.006$ ft/ft

Hydraulic gradient = i = 0.006 ft/ft

Average Velocity = $V = \frac{48.3 \text{ ft/day} \times 0.006 \text{ ft/ft}}{0.25} = 1.16$ ft/day

* Geraghty and Miller. January 1987. Evaluation of Hydrocarbons in Shallow Ground Water from Aviation Turbine Fuel (JP-5) Pipeline Leak at the NAS Pensacola, Florida.

Roger Durham. August 1992. Contamination Assessment Report: Site 3810N Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

Roger Durham and Pamela J. Wagner. February 1993. Contamination Assessment Report: Site 3221SW, Naval Aviation Depot, Naval Air Station, Pensacola, Florida.

APPENDIX C

LITHOLOGIC LOG

2/7/96

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 02/07/96	Completed: 02/07/96
MONITOR WELL NO.: MW-1	Start Time: 1230	Finish Time: 1315
Delivery Order 0007	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Silty Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Silty, Fine Sand w/ organics			
			Water Table @ Approx. 3.5' bls						
					4		0	NR	0
				100%		3'-3.5'; Grey, Mottled White Fine Sand			
				100%	6	3.5'-12.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
						End of Boring @ 12.5' bls			
					14				

I Certify that this lthological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

02/08/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-1

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 02/07/96	Completed: 02/07/96
MONITOR WELL NO.: MW-2	Start Time: 1145	Finish Time: 1230
Delivery Order 0007	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Silty, Fine Sand w/ organics			
				100%	4	3'-4'; Black, "Hard Pan" Organic Based Compressed Sands w/ Organic Debris	0	NR	0
			Water Table @ Approx. 5' bls						
				100%	6	4'-5'; Grey, Mottled White, Find Sand			
					8	5'-13.5'; White, Fine to Medium Grained Sand			
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROFESSIONAL LICENSE
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

02/08/96
Date

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 02/07/96	Completed: 02/07/96	
MONITOR WELL NO.: MW-3	Start Time: 1100	Finish Time: 1145	
Delivery Order 0007	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Silty Soil with Organics			
					2		0	NR	0
				100%		1'-5'; Grey, White Fine Sand Some Organics Coal Fragment @ 2' bls			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls						
					6	5'-13.5'; Grey Becoming White Fine to Medium Grained Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lthological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 02/08/96

MICHAEL J. WALSH PROFESSIONAL LICENSE No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 02/07/96	Completed: 02/07/96
MONITOR WELL NO.: MW-4	Start Time: 1015	Finish Time: 1100
Delivery Order 0007	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Tan, Silty, Fine Sand w/ organics			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			3'-5'; Dark Brown, Mottled Grey Silty, Fine Sand			
					6	5'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lthological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

02/08/96
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 02/07/96	Completed: 02/07/96
MONITOR WELL NO.: MW-5	Start Time: 0830	Finish Time: 0915
Delivery Order 0007	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-2.5'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lthological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
02/08/96

MICHAEL J. WALSH
PROVISIONAL LICENSE
Date No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method:	HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig:	Mobile
	Start Date: 07/25/96	Completed:	07/25/96
MONITOR WELL NO.: MW-6	Start Time: 0830	Finish Time:	0910
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, Jr.
Florida Professional Geologist No. 0001181

08/05/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21						LOGGED BY: Patrick J. Brown		SHEET 1 OF 1		
Naval Air Station						Contractor: WES, Inc.		Dr. Method: HSA		
Pensacola, Florida						Driller: South Florida Testing & Drilling		Dr. Rig: Mobile		
						Start Date: 07/25/96		Completed: 07/25/96		
MONITOR WELL NO.: MW-7						Start Time: 0910		Finish Time: 0945		
Delivery Order 0025						Contract No. N65114-95-D-2126		CONTAMINATION DATA		
TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS		OVA RESULTS (PPM) CARBON FILTER		NOTES
								W/O	WITH	NET
POST				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2			0	NR	0
HOLE				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4			0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
HSA					6	4'-13.5'; White, Fine to Medium Grained, Sand				
					8					
HA										
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

08/05/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 07/25/96	Completed: 07/25/96
MONITOR WELL NO.: MW-8	Start Time: 0950	Finish Time: 1020
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. PG0001181

08/05/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method:	HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig:	Mobile
	Start Date: 07/25/96	Completed:	07/25/96
MONITOR WELL NO.: MW-9	Start Time: 1025	Finish Time:	1050
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6					
						4'-13.5'; White, Fine to Medium Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

MICHAEL J. WALSH PROVISIONAL LICENSE No. PG0001181 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

Date: 08/05/96

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 07/25/96	Completed: 07/25/96	
MONITOR WELL NO.: MW-10	Start Time: 1100	Finish Time: 1140	
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

08/05/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method:	HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig:	Mobile
	Start Date: 07/25/96	Completed:	07/25/96
MONITOR WELL NO.: MW-11	Start Time: 1145	Finish Time:	1230
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6	4'-13.5'; White, Fine to Medium Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 08/05/96

MICHAEL J. WALSH
PROFESSIONAL GEOLOGIST
No. PG0001181
STATE OF FLORIDA

C-11

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 07/25/96	Completed: 07/25/96
MONITOR WELL NO.: MW-12	Start Time: 1330	Finish Time: 1410
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

08/05/96
Date

C-12

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 07/25/96	Completed: 07/25/96	
MONITOR WELL NO.: MW-13	Start Time: 1415	Finish Time: 1445	
Delivery Order 0025	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; Red/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Fine to Medium Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

08/05/96
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 08/29/96	Completed: 08/29/96
MONITOR WELL NO.: MW-14	Start Time: 1000	Finish Time: 1030
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; White/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6	4'-13.5'; White, Medium to Coarse Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 08/29/96	Completed: 08/29/96
MONITOR WELL NO.: MW-15	Start Time: 1035	Finish Time: 1105
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics			
					2		0	NR	0
				100%		1'-3'; White/Brown, Clayey, Fine Sand w/ organic vestiage-PAN			
				100%	4		0	NR	0
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics			
					6	4'-13.5'; White, Medium to Coarse Grained, Sand			
					8				
					10				
					12				
					14	End of Boring @ 13.5' bls			

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 08/29/96	Completed: 08/29/96
MONITOR WELL NO.: MW-16	Start Time: 1110	Finish Time: 1130
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; White/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6	4'-13.5'; White, Medium to Coarse Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.E.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-16

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 08/29/96	Completed: 08/29/96	
MONITOR WELL NO.: MW-17	Start Time: 1135	Finish Time: 1200	
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; White/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6	4'-13.5'; White, Medium to Coarse Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 08/29/96	Completed: 08/29/96
MONITOR WELL NO.: MW-18	Start Time: 1205	Finish Time: 1240
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Humus,Dark Brown, Fine Clayey Soil with Organics				
					2		0	NR	0	
				100%		1'-3'; White/Brown, Clayey, Fine Sand w/ organic vestiage-PAN				
				100%	4		0	NR	0	
			Water Table @ Approx. 5' bls			2.5'-4'; Grey/ Mottled,Fine Sand Some Organics				
					6	4'-13.5'; White, Medium to Coarse Grained, Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 001181

09/06/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-18

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 09/10/96	Completed: 09/10/96
MONITOR WELL NO.: MW-19	Start Time: 1300	Finish Time: 1345
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0-1'; 4.5" Asphalt 8" Road Base				
					2		0	NR	0	
				100%		1'-4'; Red, Silty, Fine Sand (some gravel / wash stone)				
				100%	4		0	NR	0	
			Water Table @ Approx. 6' bls			4'-6'; Light Brown, Silty, Fine Sand				
					6	6'-13.5'; White, Coarse Sand (strong petroleum odor)				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

10/08/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 09/10/96	Completed: 09/10/96	
MONITOR WELL NO.: MW-20	Start Time: 1345	Finish Time: 1430	
Delivery Order 0029	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0-1'; 4.5" Asphalt 8" Sub. Base				
					2		0	NR	0	
				100%		1'-4'; Red,silty, fine sand some gravel / wash stone				
				100%	4		0	NR	0	
			Water Table @ Approx. 6' bls			4'-6'; Light Brown, Silty, Fine Sand				
					6	4'-13.5'; White, Coarse Sand				
					8					
					10					
					12					
					14	End of Boring @ 13.5' bls				

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

10/08/96
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 11/06/96	Completed: 11/06/96	
MONITOR WELL NO.: MW-21	Start Time: 1000	Finish Time: 1045	
Delivery Order 0035	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; Dark brown, fine sandy loam with humus	0	NR	0
				100%	2	1'-4'; Light brown, fine silty sand	0	NR	0
					4				
				100%	6	4'-6'; Grayish white, fine to medium silty sand	0	NR	0
			Water Table @ Approx. 7' bls						
					8	6'-13'; White, medium to coarse sand			
					10				
					12				
						End of Boring @ 13' bls			
					14				

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Florida Professional Geologist No. 0001181
11/11/96
Date

MICHAEL J. WALSH
PROFESSIONAL LICENSE
0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 11/06/96	Completed: 11/06/96
MONITOR WELL NO.: MW-22	Start Time: 1100	Finish Time: 1145
Delivery Order 0035	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; Dark brown,fine sandy loam with humus	0	NR	0	
					2	1'-4'; Light brown, fine , silty sand				
				100%	4		0	NR	0	
				100%	6	4'-6'; Brown,fine to medium silty sand	0	NR	0	
			Water Table @ Approx. 7' bls							
					8	6'-13'; White,medium to coarse sand				
					10					
					12					
						End of Boring @ 13' bls				
					14					

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181
Date 11/11/96

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-22

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 11/06/96	Completed: 11/06/96
MONITOR WELL NO.: MW-23	Start Time: 1145	Finish Time: 1230
Delivery Order 0035	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0-1': Dark brown sandy loam with humus	0	NR	0
					2	1'-4'; Light brown, fine silty sand			
				100%	4		0	NR	0
				100%	6	4'-6'; Brownish red, fine to medium silty sand	0	NR	0
			Water Table @ Approx. 7' bls						
					8	6'-13'; White, medium to coarse sand			
					10				
					12				
						End of Boring @ 13' bls			
					14				

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Florida Professional Geologist No. 0001181

11/11/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-23

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1	
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA	
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile	
	Start Date: 11/06/96	Completed: 11/06/96	
MONITOR WELL NO.: MW-24	Start Time: 1400	Finish Time: 1430	
Delivery Order 0035	Contract No. N65114-95-D-2126	CONTAMINATION DATA	

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA				100%		0'-1'; 6" asphalt, 6" road base	0	NR	0	
					2	1'-4'; Red/white, fine, silty sand				
				100%	4		0	NR	0	
				100%	6	4'-6'; Red/white, fine to medium sand	0	NR	0	
			Water Table @ Approx. 7' bls							
					8	6'-13'; White, medium to coarse sand				
					10					
					12					
						End of Boring @ 13' bls				
					14					

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Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

11/21/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

C-24

Site 21	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Naval Air Station	Contractor: WES, Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile
	Start Date: 11/06/96	Completed: 11/06/96
MONITOR WELL NO.: MW-25	Start Time: 1430	Finish Time: 1500
Delivery Order 0045	Contract No. N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NOTES NET
POST HOLE HSA HA				100%		0'-1'; 6" asphalt/ 6" road base	0	NR	0
					2	1'-4'; Light brown, fine silty sand			
				100%	4		0	NR	0
				100%	6	4'-6'; Light brown, fine to medium silty sand	0	NR	0
			Water Table @ Approx. 7' bls						
					8	6'-13'; White, medium to coarse sand			
					10				
					12				
					14	End of Boring @ 13' bls			

I Certify that this lithological log, including geological and hydrogeological interpretations, has been prepared under my direct supervision and meets the minimum technical requirements as set forth in Chapter 492 of the Florida Statues.

Reviewed by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

11/11/96
Date

MICHAEL J. WALSH
PROVISIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST

APPENDIX D

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Navy Public Works Center
Environmental Laboratory

Bldg.3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone 904-452-3642/4758
Autovon 922-3642

Laboratory Report
Total Volatiles by Method 8260

Requester:	NPWC Environmental	Report Number:	9512052 A
Address:	Bldg. 3887	Sample Date:	9 Dec 95
	NAS Pensacola, FL 32508	Received Date:	11 Dec 95
Phone #:	452-4728	Sample Site:	NASP
Contact:	Greg Campbell	Job Order #:	130 5001

Sample ID#	Lab	1- 56785	2-	3-	4-
Sample Name	Requester	Sludge Fuel Area/Site 21			
Collector Name		P. J. Brown			
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Dec 95 @ 1500			
Sample Type	Comp/Grab	Grab			
Analyst		J. W. Moore			
Date of Analysis		15 Dec 95			
Sample Matrix		Soil			
Dilution		Dilution X 25	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#			ID#			ID#			ID#		
Volatiles by GCMS (Capillary)	METHOD #	1- 56785	units	Det. Limit	2-	units	Det. Limit	3-	units	Det. Limit	4-	units	Det. Limit
Benzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Bromobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Bromochloromethane	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
Bromodichloromethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Bromoform	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Bromomethane	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
n-Butylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
sec-Butylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
tert-Butylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Carbon Tetrachloride	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Chlorobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Chloroethane	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
Chloroform	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Chloromethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
2-Chlorotoluene*	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
4-Chlorotoluene*	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Dibromochloromethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dibromo-3-chloropropane*	EPA 8260	BDL	ug/kg	125		ug/kg	5		ug/kg	5		ug/kg	5
1,2-Dibromoethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Dibromomethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dichlorobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,3-Dichlorobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,4-Dichlorobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Dichlorodifluoromethane	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
1,1-Dichloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dichloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,1-Dichloroethene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
cis-1,2-Dichloroethene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
trans-1,2-Dichloroethene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2-Dichloropropane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,3-Dichloropropane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
2,2-Dichloropropane	EPA 8260	BDL	ug/kg	100		ug/kg	4		ug/kg	4		ug/kg	4
1,1-Dichloropropene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Ethylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Hexachlorobutadiene	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
Isopropylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
p-Isopropyltoluene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Methylene chloride	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone 904-452-3642/4758
Autovon 922-3642

Laboratory Report
Total Volatiles by Method 8260

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9512052 A
Sample Date: 9 Dec 95
Received Date: 11 Dec 95
Sample Site: NASP
Job Order #: 130 5001

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 56785	units	Limit	2-	units	Limit	3-	units	Limit	4-	units	Limit
Naphthalene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
n-Propylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Styrene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,1,1,2-Tetrachloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,1,2,2-Tetrachloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Tetrachloroethene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Toluene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2,3-Trichlorobenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2,4-Trichlorobenzene	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2
1,1,1-Trichloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,1,2-Trichloroethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Trichloroethene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Trichlorofluoromethane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2,3-Trichloropropane	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,2,4-Trimethylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
1,3,5-Trimethylbenzene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
Vinyl Chloride	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
o-Xylene	EPA 8260	BDL	ug/kg	25		ug/kg	1		ug/kg	1		ug/kg	1
m,p-Xylene	EPA 8260	BDL	ug/kg	50		ug/kg	2		ug/kg	2		ug/kg	2

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	70-121	111			
Toluene-d8	84-138	100			
Bromofluorobenzene	59-113	107			

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
* - HRS certification pending.

Approved by: J W Moore, Chemist
Jerry Dees, Laboratory Director
for Jerry Dees

Date: 20-Dec-95 @ 13:51

PWC5090/14

End of Report

Navy Public Works Center
Environmental Laboratory

Laboratory Report
Total PAH's by Method 8270A

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone (904) 452-4728
Autovon 922-4728

Requester: NPWC Environmental
Address: Bldg 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9512052 B
Sample Date: 9 Dec 95
Received Date: 11 Dec 95
Sample Site: NASP
Job Order #: 130 5001

Sample ID#	Lab	1-56785	2-	3-	4-
Sample Name	Requester	Sludge Fuel Area/Site 21			
Collector Name		P. J. Brown			
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Dec 95 @ 1500			
Sample Type	Comp/Grab	Grab			
Analyst		M. Chambers			
Date of Analysis		14 Dec 95			
Sample Matrix		Soil			
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1-56785	units	Limit	2-	units	Limit	3-	units	Limit	4-	units	Limit
Acenaphthene	EPA 8270A	BDL	ug/kg	5		ug/kg	5		ug/kg	5		ug/kg	5
Acenaphthylene	EPA 8270A	BDL	ug/kg	5		ug/kg	5		ug/kg	5		ug/kg	5
Anthracene	EPA 8270A	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/kg	4		ug/kg	4		ug/kg	4		ug/kg	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/kg	4		ug/kg	4		ug/kg	4		ug/kg	4
Chrysene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
Dibenzo(a,h)anthracene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
Fluoranthene	EPA 8270A	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
Fluorene	EPA 8270A	BDL	ug/kg	4		ug/kg	4		ug/kg	4		ug/kg	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/kg	2		ug/kg	2		ug/kg	2		ug/kg	2
Naphthalene	EPA 8270A	BDL	ug/kg	7		ug/kg	7		ug/kg	7		ug/kg	7
Phenanthrene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
Pyrene	EPA 8270A	BDL	ug/kg	3		ug/kg	3		ug/kg	3		ug/kg	3
1-Methylnaphthalene	EPA 8270A	BDL	ug/kg	5		ug/kg	5		ug/kg	5		ug/kg	5
2-Methylnaphthalene	EPA 8270A	BDL	ug/kg	7		ug/kg	7		ug/kg	7		ug/kg	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	54			
2-Fluorobiphenyl	43-116	76			
Terphenyl-d14	33-141	82			

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: J C Moore, Chemist
Jerry Dees, Laboratory Director
for Jerry Dees

Date/Time: 20-Dec-95 @ 14:02
Report Generated

End of Report

PWC 5090/14

HAZARDOUS WASTE CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Idg. 3691, Code 920
NAS Pensacola, Fl. 32508-6500
Ph# -(904)452-4728/8587
Fax# - (904) 452-2799/2387
Autovon 922 prefix

Requester: NPWC Env.
Address: B3837
Phone #:
Contact: GREG Campbell
Job Order #: 132001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 12-9-95
Received Date: 12-11-95
Sample Site: NASP
Lab Due Date: TWO WEEK TAT

Sample ID #	Lab	#1- 5-6785	#2-	#3-	#4-
Sample Name or Location	----------	Sludge Fuel Area/SITE 21			
Sampled by	----------	P. J. Brown			
Composite Date/Time Collected	Begin	12-9-95			
	Frequency				
	End	1500			
Grab Time	----------				
Sample Matrix	----------				

Notes: S.B. #68 1' 6,5

SINGLE PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
Gas Chromatography	EPA SW 8000									5	40 ml x 2/4 oz.	HCl to pH<2/4° C
Halo. Vol. Org./GC	EPA SW 8010									5	40 ml x 2/4 oz.	HCl to pH<2/4° C
EDB & DBCP/GC	EPA SW 8011									3	40 ml x 2/4 oz.	HCl to pH<2/4° C
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									5	1L (A) x 2/4 oz.	4° C
Arom. Vol. Org./GC	EPA SW 8020									3	40 ml x 2/4 oz.	HCl to pH<2/4° C
Halo./Arom. Vol. Org./GC	EPA 8010/8020									7	40 ml x 2/4 oz.	HCl to pH<2/4° C
Organochlor. Pest./PCB/GC	EPA SW 8080A									8	1Lx2/4 oz.	4° C
Chlor. Herb./GC	EPA SW 8150A									9	40 ml x 2/4 oz.	4° C
VOC/GCMS-Cap.	EPA SW 8260	X								9	40 ml x 2/4 oz.	HCl to pH<2/4° C
Semivol. Org./GCMS-Cap.	EPA SW 8270A									18	1Lx3/4 oz.	4° C
GROUP PARAMETERS by Method Name	**METHOD #**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required (L/S)**	**Preservative(s) Used (Liquids)**
HW Characterization (complete)	EPA SW-846									60	See below	See below
Ignitability (Flashpoint)	EPA SW 1010									1	250ml/4 oz.	4° C
Reactivity (Cyanide & Sulfide)	SW 846									4	1L/4 oz.	4° C
Corrosivity (pH)	SW 9040 or 9045									1	250ml/4 oz.	4° C
Toxicity (TCLP) complete	EPA SW-846									55	See below	See below
Non Volatile TCLP Extraction	EPA SW 1311									5	40 mlx3/4 oz.	4° C
ZHE TCLP Extraction	EPA SW 1311									6	1Lx4/32 oz.	HCl to pH<2/4° C
TCLP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4° C
TCLP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4° C
TCLP Pesticides	EPA SW 8080A									8	1L/4 oz.	4° C
TCLP Herbicides	EPA SW 8150A									9	1L/4 oz.	4° C
TCLP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4° C
TCLP Metals (8)	EPA SW-846									6	500 ml/4 oz.	HNO_3 to pH<2
Priority Pollutants (complete)	EPA SW-846									42	See below	See below
PP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4° C
PP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4° C
PP Pesticides	EPA SW 8080A									8	1L/4 oz.	4° C
PP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4° C
PP Metals (13)	EPA SW-846									9	500 ml/4 oz.	HNO_3 to pH<2
PP Cyanide & Phenol	EPA 600									4	1Lx2/4 oz.	NaOH/H_2SO_4/None
F001 - F005 Solvents	EPA SW-846									28	1Lx2&40mlx3/16 oz.	HNO_3 to pH<2
RCRA Metals (8)	EPA SW-846									7	500 ml/4 oz.	HNO_3 to pH<2
PCBs in Oil	EPA SW 8080A									3	40 ml	4° C
Other:		X	PAHs by 8270							10		

Comments:

Relinquished by: Phil R. [illegible]
Date/Time: 12-11-95 / 1530

Received by: Stephanie C. [illegible]
Date/Time: 12-11-95 / 1535

12/12/95 1000

PWC 9510/6

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone (904) 452-4728/3642
\utovon 922-4728/3642

Requester: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-4728
Contact: Greg Campbell

Laboratory Report

Total Volatile Aromatics by Method 8260

Report Number: 9602059 A
Sample Date: 9 Feb 96
Received Date: 9 Feb 96
Sample Site: NASP Site 21
Job Order #: 130 5001

Sample ID#	Lab	1- 60524	2- 60525	3- 60526	4- 60527
Sample Name	Requester	MW-1	MW-2	MW-3	MW-4
Collector Name		P. J. B.	P. J. B.	P. J. B.	P. J. B.
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Feb 96 @ 1435	9 Feb 96 @ 1420	9 Feb 96 @ 1405	9 Feb 96 @ 1350
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab
Analyst		J. Moore	J. Moore	J. Moore	J. Moore
Date of Analysis		12 Feb 96	12 Feb 96	12 Feb 96	13 Feb 96
Sample Matrix		Wastewater	Wastewater	Wastewater	Wastewater
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 60524	units	Limit	2- 60525	units	Limit	3- 60526	units	Limit	4- 60527	units	Limit
Benzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Ethylbenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	2	ug/l	1
Toluene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Xylenes (Total)	EPA 8260	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	27	ug/l	2
Methyl-tert-butyl ether (MTBE)	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Total VOA	EPA 8260	0	ug/l	1	0	ug/l	1	0	ug/l	1	29	ug/l	1

Surrogate Recoveries Compound	Acceptance Limits				
',2-Dichloroethane-d4	76-114	97	97	98	99
Toluene-d8	88-110	101	99	99	103
Bromoflourobenzene	86-115	102	97	99	101

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: J. W. Moore, Chemist
Jerry Dees, Laboratory Director

Date/Time: 20-Feb-96 @ 10:45
Report Generated

PWC 5090/14

End of Report

for Jerry Dees

D-5

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone (904) 452-4728/3642
utovon 922-4728/3642

Laboratory Report

Total Volatile Aromatics by Method 8260

Requester:	NPWC Environmental
Address:	Bldg. 3887, Code 910
	NAS Pensacola, FL 32508
Phone #:	(904) 452-4728
Contact:	Greg Campbell

Report Number:	9602059 B
Sample Date:	9 Feb 96
Received Date:	9 Feb 96
Sample Site:	NASP Site 21
Job Order #:	130 5001

Sample ID#	Lab	1- 60528	2- 60529	3- 60530	4- 60531
Sample Name	Requester	MW-5	Duplicate	Trip Blank	Eq. Blank
Collector Name		P. J. B.	P. J. B.	N/A	P. J. B.
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Feb 96 @ 1335	9 Feb 96 @ N/S	9 Feb 96 @ N/A	9 Feb 96 @ 1300
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab
Analyst		J. Moore	J. Moore	J. Moore	J. Moore
Date of Analysis		12 Feb 96	12 Feb 96	13 Feb 96	13 Feb 96
Sample Matrix		Wastewater	Wastewater	Deionized Water	Deionized Water
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Volatiles by GCMS (Capillary)	METHOD #	1- 60528	units	Limit	2- 60529	units	Limit	3- 60530	units	Limit	4- 60531	units	Limit
Benzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Ethylbenzene	EPA 8260	1	ug/l	1	1	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Toluene	EPA 8260	1	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Xylenes (Total)	EPA 8260	17	ug/l	2	24	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Methyl-tert-butyl ether (MTBE)	EPA 8260	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1	BDL	ug/l	1
Total VOA	EPA 8260	19	ug/l	1	25	ug/l	1	0	ug/l	1	0	ug/l	1

Surrogate Recoveries Compound	Acceptance Limits				
1,2-Dichloroethane-d4	76-114	98	100	93	96
Toluene-d8	88-110	104	102	102	100
Bromoflourobenzene	86-115	98	100	99	100

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
N/A = Not Applicable. N/S = Not Submitted.

Approved by: J W Moore, Chemist Date/Time: 20-Feb-96 @ 11:53
Jerry Dees, Laboratory Director — Report Generated

PWC 5090/14

Page 1 of 1 — End of Report

for Jerry Dees

Navy Public Works Center
Environmental Laboratory

Laboratory Report
Total PAH's by Method 8270A

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone (904) 452-4728
Autovon 922-4728

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9602059 C
Sample Date: 9 Feb 96
Received Date: 9 Feb 96
Sample Site: NASP Site 21
Job Order #: 130 5001

Sample ID#	Lab	1- 60524	2- 60525	3- 60526	4- 60527
Sample Name	Requester	MW-1	MW-2	MW-3	MW-4
Collector Name		P. J. B.	P. J. B.	P. J. B.	P. J. B.
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Feb 96 @ 1435	9 Feb 96 @ 1420	9 Feb 96 @ 1405	9 Feb 96 @ 1350
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab
Analyst		M. Chambers	M. Chambers	M. Chambers	M. Chambers
Date of Analysis		13 Feb 96	13 Feb 96	13 Feb 96	13 Feb 96
Sample Matrix		Wastewater	Wastewater	Blank	Wastewater
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.
Polynuclear Aromatics (PAH's)	METHOD #	1- 60524	units	Limit	2- 60525	units	Limit	3- 60526	units	Limit	4- 60527	units	Limit
Acenaphthene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Acenaphthylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5
Anthracene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Chrysene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Dibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Fluoranthene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Fluorene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4	BDL	ug/l	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2	BDL	ug/l	2
Naphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7	52	ug/l	7
Phenanthrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
Pyrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3	BDL	ug/l	3
1-Methylnaphthalene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5	BDL	ug/l	5	57	ug/l	5
2-Methylnaphthalene	EPA 8270A	BDL	ug/l	7	BDL	ug/l	7	BDL	ug/l	7	100	ug/l	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	86	73	82	94
2-Fluorobiphenyl	43-116	94	81	85	101
Terphenyl-d14	33-141	84	79	79	82

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.

Approved by: J W Moore, Chemist
Jerry Dees, Laboratory Director
for Jerry Dees

Date/Time: 20-Feb-96 @ 11:09
Report Generated
End of Report

PWC 5090/14

Navy Public Works Center
Environmental Laboratory

Laboratory Report
Total PAH's by Method 8270A

Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone (904) 452-4728
Autovon 922-4728

Requester: **NPWC Environmental**
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9602059 D
Sample Date: 9 Feb 96
Received Date: 9 Feb 96
Sample Site: NASP Site 21
Job Order #: 130 5001

Sample ID#	Lab	1- 60528	2- 60529	3-	4-
Sample Name	Requester	MW-5	Duplicate		
Collector Name		P. J. B.	P. J. B.		
Date/Time	Comp start				
Collected	Comp stop				
(Military)	Grab	9 Feb 96 @ 1335	9 Feb 96 @ N/S		
Sample Type	Comp/Grab	Grab	Grab		
Analyst		M. Chambers	M. Chambers		
Date of Analysis		13 Feb 96	13 Feb 96		
Sample Matrix		Wastewater	Wastewater		
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1

PARAMETER Polynuclear Aromatics (PAH's)	METHOD #	ID# 1- 60528	units	Det. Limit	ID# 2- 60529	units	Det. Limit	ID# 3-	units	Det. Limit	ID# 4-	units	Det. Limit
Acenaphthene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Acenaphthylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Anthracene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4		ug/l	4		ug/l	4
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4		ug/l	4		ug/l	4
Chrysene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
Dibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
Fluoranthene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Fluorene	EPA 8270A	BDL	ug/l	4	BDL	ug/l	4		ug/l	4		ug/l	4
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Naphthalene	EPA 8270A	48	ug/l	7	87	ug/l	7		ug/l	7		ug/l	7
Phenanthrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
Pyrene	EPA 8270A	BDL	ug/l	3	BDL	ug/l	3		ug/l	3		ug/l	3
1-Methylnaphthalene	EPA 8270A	52	ug/l	5	94	ug/l	5		ug/l	5		ug/l	5
2-Methylnaphthalene	EPA 8270A	80	ug/l	7	170	ug/l	70		ug/l	7		ug/l	7

SURROGATE RECOVERIES Compound	Acceptance Limits				
Nitrobenzene-d5	35-114	109	87		
2-Fluorobiphenyl	43-116	97	84		
Terphenyl-d14	33-141	79	84		

Comments: ug/l=micrograms per liter. ug/kg=micrograms per kilogram. BDL=Below Detection Limit.
N/S = Not Submitted.

Approved by: J. W. Moore for Jerry Dees, Laboratory Director

Date/Time: 20-Feb-96 @ 11:52
Report Generated

PWC 5090/14

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone (904) 452-4728
Autovon 922-4728
FAX (904) 452-2387/2799

Laboratory Report
Total Lead

Requester:	NPWC Environmental	Report Number:	9602059 E
Address:	Bldg. 3887	Sample Date:	9 Feb 96
	NAS Pensacola, Fl 32508	Received Date:	9 Feb 96
Phone #:	452-4728	Sample Site:	NASP
Contact:	Greg Campbell	Job Order #:	130 5001

Sample ID#	Lab	1- 60524	2- 60525	3- 60526	4- 60527	Analyst(s):
Sample Name	Requester	MW-1	MW-2	MW-3	MW-4	ICP – Brian Nelson
Collector Name		P. J. B.	P. J. B.	P. J. B.	P. J. B.	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	9 Feb 96 @ 1435	9 Feb 96 @ 1420	9 Feb 96 @ 1405	9 Feb 96 @ 1350	ICP – 21 & 22 Feb 96
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Wastewater	Wastewater	Wastewater	Wastewater	

PARAMETER		ID#			Det.	ID#			Det.	ID#			Det.	ID#			Det.	
Metals:	METHOD #	1-	60524	units	Limit	2-	60525	units	Limit	3-	60526	units	Limit	4-	60527	units	Limit	Preservative(s)
Lead(Pb)	SW 7421	X	0.041	mg/l	0.003	X	1.7	mg/l	0.06+	X	0.079	mg/l	0.003	X	0.240	mg/l	0.015+	None

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.
+ = Elevated detection limit due to dilution into calibration range.

Approved by: Jw Moore for Jerry Dees, Laboratory Director

Date/Time: 23-Feb-96 14:04

End of Report

PWC 5090/14

D-9

Navy Public Works Center
Environmental Laboratory

Bldg 3887, Code 920
NAS Pensacola, Fl. 32508-6500
Phone (904) 452-4728
Autovon 922-4728
FAX (904) 452-2387/2799

Laboratory Report
Total Lead

Requester:	NPWC Environmental	Report Number:	9602059 F
Address:	Bldg. 3887	Sample Date:	9 Feb 96
	NAS Pensacola, Fl 32508	Received Date:	9 Feb 96
Phone #:	452-4728	Sample Site:	NASP
Contact:	Greg Campbell	Job Order #:	130 5001

Sample ID#	Lab	1- 60528	2- 60529	3-	4-	Analyst(s):
Sample Name	Requester	MW-5	Duplicate			ICP - Brian Nelson
Collector Name		P. J. B.	P. J. B.			
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	9 Feb 96 @ 1335	9 Feb 96 @ N/S			ICP - 22 Feb 96
Sample Type	Comp/Grab	Grab	Grab			
Sample Matrix		Wastewater	Wastewater			

PARAMETER		ID#		Det.	ID#		Det.	ID#		Det.	ID#		Det.	
Metals:	METHOD #	1- 60528	units	Limit	2- 60529	units	Limit	3-	units	Limit	4-	units	Limit	Preservative(s)
Lead(Pb)	SW 7421	X 0.88	mg/l	0.03+	X 0.205	mg/l	0.015+		mg/l	0.003		mg/l	0.003	None

D-10

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.
+ = Elevated detection limit due to dilution into calibration range. N/S = Not Submitted.

Approved by: J W Moore for Jerry Dees, Laboratory Director

Date/Time: 23-Feb-96 14:07

End of Report

PWC 5090/14

HAZARDOUS WASTE CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

PWC Environmental Laboratory
Bldg. 3881, Code 920
NAS Pensacola, FL 32508-6500
Ph# - (904) 452-4728/6587
Fax# - (904) 452-2799/2387
Autovon 922 prefix

Requester: NPWC Environmental Dept.
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-4728
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 2.9.96
Received Date: 2.9.96
Sample Site: NAS, Pen SITE 21
Lab Due Date:

Sample ID #	Lab	#1-60524	#2-60525	#3-60526	#4-60527
Sample Name or Location	----------	MW-1	MW-2	MW-3	MW-4
Sampled by	----------	PJB	PJB	PJB	PJB
Composite Date/Time Collected	Begin	2.9.96	2.9.96	2.9.96	2.9.96
	Frequency				
	End				
Grab Time	----------	2:35/1435	2:20/1420	2:05/1405	1:50/1350
Sample Matrix	----------				

Notes:

SINGLE PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
Gas Chromatography	EPA SW 8000									5	40 ml x 2/4 oz.	HCl to pH<2/4°C
Halo. Vol. Org./GC	EPA SW 8010									5	40 ml x 2/4 oz.	HCl to pH<2/4°C
EDB & DBCP/GC	EPA SW 8011									3	40 ml x 2/4 oz.	HCl to pH<2/4°C
Non-Halo. Vol. Org./GC	EPA SW 8015/MOD									5	1L (A) x 2/4 oz.	4°C
Arom. Vol. Org./GC	EPA SW 8020									3	40 ml x 2/4 oz.	HCl to pH<2/4°C
Halo./Arom. Vol. Org./GC	EPA 8010/8020									7	40 ml x 2/4 oz.	HCl to pH<2/4°C
Organochlor. Pest./PCB/GC	EPA SW 8080A									8	1Lx2/4 oz.	4°C
Chlor. Herb./GC	EPA SW 8150A									9	40 ml x 2/4 oz.	4°C
VOC/GCMS-Cap.	EPA SW 8260		BETX+MTBE		BETX+MTBE		BETX+MTBE		BETX+MTBE	5	40 ml x 2/4 oz.	HCl to pH<2/4°C
Semivol. Org./GCMS-Cap.	EPA SW 8270A		PAH		PAH		PAH		PAH	18	1Lx3/4 oz.	4°C

GROUP PARAMETERS by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
Y Characterization (complete)	EPA SW-846									60	See below	See below
ntability (Flashpoint)	EPA SW 1010									1	250ml/4 oz.	4°C
Reactivity (Cyanide & Sulfide)	SW 846									4	1L/4 oz.	4°C
Corrosivity (pH)	SW 9040 or 9045									1	250ml/4 oz.	4°C
Toxicity (TCLP) complete	EPA SW-846									55	See below	See below
Non Volatile TCLP Extracson	EPA SW 1311									5	40 mlx3/4 oz.	4°C
ZHE TCLP Extracson	EPA SW 1311									6	1Lx4/32 oz.	HCl to pH<2/4°C
TCLP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
TCLP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
TCLP Pesticides	EPA SW 8080A									8	1L/4 oz.	4°C
TCLP Herbicides	EPA SW 8150A									9	1L/4 oz.	4°C
TCLP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4°C
TCLP Metals (8)	EPA SW-846									8	500 ml/4 oz.	HNO_3 to pH<2
Priority Pollutants (complete)	EPA SW-846									42	See below	See below
PP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
PP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
PP Pesticides	EPA SW 8080A									8	1L/4 oz.	4°C
PP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4°C
PP Metals (13)	EPA SW-846									9	500 ml/4 oz.	HNO_3 to pH<2
PP Cyanide & Phenol	EPA 600									4	1Lx2/4 oz.	NaOH/H_2SO_4/None
F001 - F005 Solvents	EPA SW-846									28	1Lx2&40mlx3/16 oz.	HNO_3 to pH<2
RCRA Metals (8)	EPA SW-846									7	500 ml/4 oz.	HNO_3 to pH<2
PCBs in Oil	EPA SW 8080A									3	40 ml	4°C
Other:												
TRPH (send out)			X		X		X		X			
Pb (LEAD)			X		X		X		X			

Comments: Note Pb added on 2-14-96 per O. Campbell

Relinquished by: [signature]
Date/Time: 2.9.96 1615

Received by: [signature]
Date/Time: 2-9-96 1615

PWC 9510/8

HAZARDOUS WASTE CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg. 3891, Code 920
NAS Pensacola, FL 32508-6500
Ph# - (904) 452-4728/8587
Fax# - (904) 452-2799/2387
Autovon 922 prefix

Requester: NPWC Environmental Dept.
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-4728
Contact: Gwen Campbell
Job Order #:

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 2.9.96
Received Date: 2.9.96
Sample Site: NAS, Pen SITE 21
Lab Due Date:

Sample ID #	Lab	#1- 60528	#2- 60529	#3- 60530	#4- 60531
Sample Name or Location	----------	MW-5	Duplicate	Trip blank	EQ. Blank
Sampled by	----------	PJD	RJB	—	RJB
Composite Date/Time Collected	Begin	2.9.96	2.9.96	2.9.96	2-9-96
	Frequency				
	End				
Grab Time	----------	1:35/1335	—	—	1:00/1300
Sample Matrix	----------				

Notes:

SINGLE PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
Gas Chromatography	EPA SW 8000									5	40 ml x 2/4 oz.	HCl to pH<2/4°C
Halo. Vol. Org./GC	EPA SW 8010									5	40 ml x 2/4 oz.	HCl to pH<2/4°C
EDB & DBCP/GC	EPA SW 8011									3	40 ml x 2/4 oz.	HCl to pH<2/4°C
Non-Halo. Vol. Org./GC	EPA SW 8015/MOD)									5	1L (A) x 2/4 oz.	4°C
Arom. Vol. Org./GC	EPA SW 8020									3	40 ml x 2/4 oz.	HCl to pH<2/4°C
Halo./Arom. Vol. Org./GC	EPA 8010/8020									7	40 ml x 2/4 oz.	HCl to pH<2/4°C
Organochlor. Pest./PCB/GC	EPA SW 8080A									8	1Lx2/4 oz.	4°C
Chlor. Herb./GC	EPA SW 8150A									9	40 ml x 2/4 oz.	4°C
VOC/GCMS-Cap.	EPA SW 8260		BETX+MTBE		BTEX+MTBE		BTEX+MTBE		BTEX+MTBE	9	40 ml x 2/4 oz.	HCl to pH<2/4°C
Semivol. Org./GCMS-Cap.	EPA SW 8270A		PAH		PAH					18	1Lx3/4 oz.	4°C

GROUP PARAMETERS by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
HW Characterization (complete)	EPA SW-846									60	See below	See below
Ignitability (Flashpoint)	EPA SW 1010									1	250ml/4 oz.	4°C
Reactivity (Cyanide & Sulfide)	SW 846									4	1L/4 oz.	4°C
Corrosivity (pH)	SW 9040 or 9045									1	250ml/4 oz.	4°C
Toxicity (TCLP) complete	EPA SW-846									55	See below	See below
Non Volatile TCLP Extraction	EPA SW 1311									5	40 mlx3/4 oz.	4°C
ZHE TCLP Extraction	EPA SW 1311									6	1Lx4/32 oz.	HCl to pH<2/4°C
TCLP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
TCLP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
TCLP Pesticides	EPA SW 8080A									8	1L/4 oz.	4°C
TCLP Herbicides	EPA SW 8150A									9	1L/4 oz.	4°C
TCLP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4°C
TCLP Metals (8)	EPA SW-846									8	500 ml/4 oz.	HNO_3 to pH<2
Priority Pollutants (complete)	EPA SW-846									42	See below	See below
PP Acid Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
PP B/N Extractables	EPA SW 8270A									10	1L/4 oz.	4°C
PP Pesticides	EPA SW 8080A									8	1L/4 oz.	4°C
PP Volatiles	EPA SW 8260									9	40 mlx3/4 oz.	HCl to pH<2/4°C
PP Metals (13)	EPA SW-846									9	500 ml/4 oz.	HNO_3 to pH<2
PP Cyanide & Phenol	EPA 600									4	1Lx2/4 oz.	NaOH/H_2SO_4/None
F001 - F005 Solvents	EPA SW-846									28	1Lx2&40mlx3/16 oz.	HNO_3 to pH<2
RCRA Metals (8)	EPA SW-846									7	500 ml/4 oz.	HNO_3 to pH<2
PCBs in Oil	EPA SW 8080A									3	40 ml	4°C
Other:												
TRPH (Sendout)			X		X							
Pb (LEAD)			X		X							

Comments:

Relinquished by: [signature]
Date/Time: 2-9-96 1615

Received by: Joel Moore
Date/Time: 2-9-96 1615

PWC 9510/6

AnalyticalTechnologies,Inc. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

2/9/96

SIGNATURE PAGE

Reviewed by: _____
ATI Project Manager

Client:	NAS, CO, PWC NAS PENSACOLA, FLORIDA
Project Name:	TPH
Project Number:	CALL #9020
Project Location:	NAS MW
Accession Number:	602427
Project Manager:	JERRY DEES
Sampled By:	PJB

CC

AnalyticalTechnologies,Inc. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

February 23, 1996

INVOICE NUMBER 808732
LAB CODE 160

NAS, CO, PWC

DEFENSE FINANCE & ACCOUNTING SERVICE, OP
OAKLAND , CA 94623-3870

FILE COPY
Original Sent to Oakland, CA

Accession #: 602427
Client Name: NAS, CO, PWC
Office: NAS PENSACOLA, FLORIDA
Project Name: TPH
Project Num: CALL #9020
Project Location: NAS MW
Report Sent To: JERRY DEES
P. O. Number: STUB #6045-6193
Billing Client: 514002

Samples	Test	Matrix	Description	Actual Price	Extended Price
6	TPIR418	AQ	TOTAL PETROLEUM HYDROCARBONS (418.1)	35.00	210.00
				Total:	$210.00

STUB #6045-6193
CALL #9020
JOB #1305001
ID #60524,60525,60526,60529,60528,60529

D-14

NET 30 DAYS
1 1/2 % Finance Charge on Balance Due over 30 Days

****
* REMIT PAYMENT TO: *
* American Environmental Network, Inc. *

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	602427
Client:	NAS, CO, PWC
Project Number:	CALL #9020
Project Name:	TPH
Project Location:	NAS MW
Test:	TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	001	Sample Date/Time:	09-FEB-96 1435
Client Sample Id:	NAS MW#1	Received Date:	16-FEB-96
Batch: TPW017		Extraction Date:	17-FEB-96
Blank: A	Dry Weight %: N/A	Analysis Date:	20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	ND	1	
ANALYST	INITIALS	DWB		

Comments:

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 602427
Client: NAS, CO, PWC
Project Number: CALL #9020
Project Name: TPH
Project Location: NAS MW
Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix: GROUNDWATER
QC Level: I

Lab Id: 002 Sample Date/Time: 09-FEB-96 1420
Client Sample Id: NAS MW#2 Received Date: 16-FEB-96

Batch: TPW017 Extraction Date: 17-FEB-96
Blank: A Dry Weight %: N/A Analysis Date: 20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	ND	1	
ANALYST	INITIALS	DWB		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession:	602427
Client:	NAS, CO, PWC
Project Number:	CALL #9020
Project Name:	TPH
Project Location:	NAS MW
Test:	TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	003	Sample Date/Time:	09-FEB-96 1405
Client Sample Id:	NAS MW#3	Received Date:	16-FEB-96
Batch: TPW017		Extraction Date:	17-FEB-96
Blank: A	Dry Weight %: N/A	Analysis Date:	20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	ND	1	
ANALYST	INITIALS	DWB		

Comments:

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 602427
Client: NAS, CO, PWC
Project Number: CALL #9020
Project Name: TPH
Project Location: NAS MW
Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix: GROUNDWATER
QC Level: I

Lab Id: 004 Sample Date/Time: 09-FEB-96 1450
Client Sample Id: NAS MW#4 Received Date: 16-FEB-96

Batch: TPW017 Extraction Date: 17-FEB-96
Blank: A Dry Weight %: N/A Analysis Date: 20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	49	10	
ANALYST	INITIALS	DWB		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 602427
Client: NAS, CO, PWC
Project Number: CALL #9020
Project Name: TPH
Project Location: NAS MW
Test: TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix: GROUNDWATER
QC Level: I

Lab Id: 005 Sample Date/Time: 09-FEB-96 1335
Client Sample Id: NAS MW#5 Received Date: 16-FEB-96

Batch: TPW017 Extraction Date: 17-FEB-96
Blank: A Dry Weight %: N/A Analysis Date: 20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	140	10	
ANALYST	INITIALS	DWB		

Comments:

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	602427
Client:	NAS, CO, PWC
Project Number:	CALL #9020
Project Name:	TPH
Project Location:	NAS MW
Test:	TOTAL PETROLEUM HYDROCARBONS (418.1)
Analysis Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method:	418.1 / EPA 600 / 04-79-020, Rev. March 1983
Matrix:	GROUNDWATER
QC Level:	I

Lab Id:	006	Sample Date/Time:	09-FEB-96 N/S
Client Sample Id:	DUPLICATE	Received Date:	16-FEB-96
Batch: TPW017		Extraction Date:	17-FEB-96
Blank: A	Dry Weight %: N/A	Analysis Date:	20-FEB-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	62	10	
ANALYST	INITIALS	DWB		

Comments:

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 602427
Client: NAS, CO, PWC
Project Number: CALL #9020
Project Name: TPH
Project Location: NAS MW
Test: TOTAL PETROLEUM HYDROCARBONS (418.1)

Client Sample Id:	Parameter:	Unit:	Result:
NAS MW#4	TOTAL PETROLEUM HYDROCARBON	MG/L	49
NAS MW#5	TOTAL PETROLEUM HYDROCARBON	MG/L	140
DUPLICATE	TOTAL PETROLEUM HYDROCARBON	MG/L	62

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: TOTAL PETROLEUM HYDROCARBONS (418.1)

Accession:	602427
Client:	NAS, CO, PWC
Project Number:	CALL #9020
Project Name:	TPH
Project Location:	NAS MW
Department:	SEMI-VOLATILE FUELS

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Blank
Batch: TPW017
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

Blank Id: A Date Analyzed: 20-FEB-96 Date Extracted: 17-FEB-96

Parameters:	Units:	Results:	Reporting Limits:
TOTAL PETROLEUM HYDROCARBON	MG/L	ND	1
ANALYST	INITIALS	DWB	

Comments:

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Reagent
Batch: TPW017
Analysis Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983
Extraction Method: 418.1 / EPA 600 / 04-79-020, Rev. March 1983

RS Date Analyzed: 20-FEB-96
RSD Date Analyzed: 20-FEB-96

RS Date Extracted: 17-FEB-96
RSD Date Extracted: 17-FEB-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
PETROLEUM HYDROCARBON	2.7	<1	2.3	85	2.5	93	9	31	39-157

Surrogates:

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX
ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

GC/FPD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
SW = STEVE WILHITE
KW = KAREN WADSWORTH
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
KS = KENDALL SMITH
KK = KERRY KUST
DWB = DAVID W. BOWERS
RP = ROB PEREZ

AnalyticalTechnologies,Inc.
11 East Olive Road • Pensacola, Florida 32514 • (904) 474-1001

CHAIN OF CUSTODY

PART 1 - Bottle Shipment Information

ATI ACCESSION #: 602427

CLIENT: NAVC ENV. LAB

CLIENT PROJECT NUMBER: STUB#6045-6193

QUANTITY OF SAMPLE CONTAINERS SHIPPED	PRESERVATIVE							PLASTIC CONTAINERS							GLASS CONTAINERS									NOTES
	H_2SO_4	HNO3	HCL	Zn Acetate	$Na_2S_2O_3$	Unpreserved	NaOH	8 oz.	16 oz.	32 oz.	½ gallon	1 gallon	Whirl-pak	100-ML Cup	120 ml (A)	1 liter (A)	1 liter (C)	40 ml Vial	4 oz. wm	8 oz. wm	16 oz. wm	32 oz. wm	D.I. Trip Blank	
6																✓								

Relinquished By:	Time	Date	Received By:	Time	Date

PART 2 - Sample/Project Information

SAMPLE MATRIX CODES

DW DRINKING WATER — AI AIR — SW SURFACE WATER
WW WASTEWATER — SO SOIL — SL SLUDGE
GW GROUNDWATER — OI OIL — ST STORMWATER

PARAMETERS AND PRESERVATIVES REQUESTED: TPH

	SAMPLE I.D.	SAMPLE DATE	SAMPLE TIME	MATRIX	TOTAL # OF BOTTLES
60524	NAS MW #1	2/9/96	1435	GW	1
60525	MW #2		1420		1
60526	MW #3		1405		1
60527	MW #4		1450		1
60528	MW #5		1335		1
60529	DUPLICATE	✓		✓	1

Total Number of Bottles/Containers:

Relinquished By	Date	Time	Received By	Date	Time
Kathy Jones	2/16/96	0815	Peter Shuba	2-16-96	0830
Peter Shuba	2-16-96	0920	Linda L. Kitt	2/16/96	0920

Client NAVC ENV. LAB CODE920			Purchase Order Number STUB#6045-6193
Address B. 3297			Project Number CALL#9020 0131
City PENSACOLA	State FL	Zip 32508	Project Name TPH
Phone Number (904) 452-5642	Fax Number (904)452-2799		Project Location NAS MW
Project Manager			Sampled By PSB

TURNAROUND TIMES	check below	SPECIAL INSTRUCTIONS
Standard - 14-21 days	✓	STUB 6045-6193
RUSH (must be approved in advance)		CALL 9020
48 hours - 2x standard price		SO#1305001
3-7 days - 1.5x standard price		ID 60524, 60525, 60526, 60527
TCLP - 1 week rush 1.5x standard price		60528, 60529
QC Level none I II III IV (circle one)		Copies of report needed 1

FORM # 12694 — METRO PRINTING, INC., HUNTSVILLE, ALABAMA 35801

D-26

WHITE — LAB CANARY — REPORT PINK — CLIENT

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

1/21/96

601/602 Volatiles by Method 8260

Lab Report Number: 63315
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63315
Sample Name / Location	MW-6 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0815
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/05/96 -JM
Date of Analysis	08/05/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63315	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	84
Toluene-d8	86-119	98
Bromoflourobenzene	85-116	86

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

D-27

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 63315
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63315
Sample Name / Location	MW-6 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0815
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.03

Compound Name	1- 63315	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	5	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	48
2-Flourobiphenyl	43-116	42
Terphenyl -d14	33-141	51

COMMENTS : T= Value reported is less than the laboratory detection limit. The data is reported for informational purposes only.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/29/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63315
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63315			
Sample Name / Location	MW-6 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 0815			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	06/03/96 -BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63315	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	81

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

Page 1 of 1 End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63315
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63315		
Sample Name / Location	MW-6 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 0815		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/14/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63315	units	Det. Limit
Petroleum Range Organics by FLPRO	5.2	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	72
Nonatriacontane (C-39)	42-193 *	63

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Bees, Laboratory Director

Date: 8/16/96

Page 1 of 1

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63316
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63316
Sample Name / Location	MW-7 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0845
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/05/96 - JM
Date of Analysis	08/05/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63316	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	82
Toluene-d8	86-119	98
Bromoflourobenzene	85-116	85

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Deen, Laboratory Director

Date: 8/16/96
Report Generated

D-31

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 63316
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63316
Sample Name / Location	MW-7 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0845
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	8/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.04

Compound Name	1- 63316	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	52
2-Flourobiphenyl	43-116	50
Terphenyl -d14	33-141	54

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
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Page 1 of 1 End of Report

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Environmental Laboratory

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DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63316
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63316			
Sample Name / Location	MW-7 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 0845			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 - BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63316	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	84

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 63316
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63316		
Sample Name / Location	MW-7 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 0845		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/14/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63316	units	Det. Limit
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	118
Nonatriacontane (C-39)	42-193 *	59

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96

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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63317
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63317
Sample Name / Location	MW-8 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0830
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/06/96 -JM
Date of Analysis	08/06/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63317	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	82
Toluene-d8	86-119	97
Bromoflourobenzene	85-116	84*

COMMENTS : * = This surrogate recovered low on two reshots, and the failure is attributed to matrix interference.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
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D-35

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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 63317
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63317
Sample Name / Location	MW-6 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0830
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.02

Compound Name	1- 63317	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,I)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	48
2-Flourobiphenyl	43-116	45
Terphenyl -d14	33-141	55

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

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D-36

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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63317
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63317
Sample Name / Location	MW-8 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0830
Sample Type (composite or grab)	Grab
Analyst	B. Jacquart
Date of Extraction / Initials	08/03/96 -BJ
Date of Analysis	08/03/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63317	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	86

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

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Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63317
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63317		
Sample Name / Location	MW-6 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 0830		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/14/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63317	units	Det. Limit
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	100
Nonatriacontane (C-39)	42-193 *	48

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96

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DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63318
Sample Date: 07/31/96
Received Date: 06/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63318
Sample Name / Location	MW-9 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0800
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/03/96 JM
Date of Analysis	08/03/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63318	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	77
Toluene-d8	86-119	95
Bromoflourobenzene	85-116	85

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 63318
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63318
Sample Name / Location	MW-9 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0800
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	8/6/96
Sample Matrix	Groundwater
Dilution	X 1.01

Compound Name	1- 63318	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	59
2-Flourobiphenyl	43-116	55
Terphenyl -d14	33-141	60

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
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Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63318
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63318			
Sample Name / Location	MW-9 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 0800			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63318	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	83

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/20/96
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Navy Public Works Center
Environmental Laboratory

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Phone (904) 452-4728/3642
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Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63316
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63318		
Sample Name / Location	MW-9 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 0800		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/14/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63318	units	Det. Limit
Petroleum Range Organics by FLPRO	1.4	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	129
Nonatriacontane (C-39)	42-193 *	80

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96

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NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63319
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63319
Sample Name / Location	MW-10 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1140
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/05/96 -JM
Date of Analysis	08/05/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63319	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	2	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	84
Toluene-d8	86-119	101
Bromoflourobenzene	85-116	85

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Rees, Laboratory Director

D-43

Date: 8/20/96
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Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 63319
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63319
Sample Name / Location	MW-10 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1140
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.02

Compound Name	1- 63319	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,l)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	17	ug/L	5	
2-Methylnaphthalene	18	ug/L	7	
Naphthalene	12	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	40
2-Flouroblphenyl	43-116	33
Terphenyl -d14	33-141	38

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jim Dees, Laboratory Director

Date: 8/18/96
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Page 1 of 1 End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63319
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63319			
Sample Name / Location	MW-10 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 1140			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 -BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63319	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	67

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

D-45

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 63319
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63319		
Sample Name / Location	MW-10 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 1140		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	06/02/96 - JM		
Date of Analysis	08/14/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63319	units	Det. Limit
Petroleum Range Organics by FLPRO	2.4	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	82
Nonatriacontane (C-39)	42-193 *	59

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Deeds, Laboratory Director

Date: 8/16/96

D-46

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 63320
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63320
Sample Name / Location	MW-11 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1120
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/03/96 -JM
Date of Analysis	08/03/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63320	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	12	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	75
Toluene-d8	86-119	113
Bromoflourobenzene	85-116	87

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-47

Date: 8/16/98
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 63320
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63320
Sample Name / Location	MW-11 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1120
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.03

Compound Name	1- 63320	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	68	ug/L	5	
2-Methylnaphthalene	89	ug/L	7	
Naphthalene	36	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	64
2-Flourobiphenyl	43-116	58
Terphenyl -d14	33-141	67

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

Navy Public Works Center
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Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63320
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63320			
Sample Name / Location	MW-11 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 1120			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 -JM			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution		X	1	
Compound Name	1- 63320	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	92

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

D-49

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 63320
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63320		
Sample Name / Location	MW-11 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 1120		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/15/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63320	units	Det. Limit
Petroleum Range Organics by FLPRO	13	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	84
Nonatriacontane (C-39)	42-193 *	43

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/20/96

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63321
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63321
Sample Name / Location	MW-12 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1100
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/06/96 -JM
Date of Analysis	08/06/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63321	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	92
Toluene-d8	86-119	101
Bromoflourobenzene	85-116	90

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
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Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 63321
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63321
Sample Name / Location	MW-12 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1100
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.02

Compound Name	1- 63321	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	56
2-Flourobiphenyl	43-116	54
Terphenyl -d14	33-141	59

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees / Laboratory Director

Date: 8/16/96
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Page 1 of 1 End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63321
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63321			
Sample Name / Location	MW-12 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 -BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63321	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	81

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/16/96
Report Generated

D-53

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63321
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63321		
Sample Name / Location	MW-12 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 1100		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 - JM		
Date of Analysis	08/15/96		
Sample Matrix	Groundwater		
Dilution	x 1		
Parameter	1- 63321	units	Det. Limit
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	87
Nonatriacontane (C-39)	42-193 *	46

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/20/96

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63322
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63322			
Sample Name / Location	MW-13 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	08/02/96 -JM			
Date of Analysis	08/02/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63322	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	80
Toluene-d8	86-119	100
Bromoflourobenzene	85-116	89

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
Report Generated

D-55

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 63322
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63322
Sample Name / Location	MW-13 NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 1200
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	08/4/96; JJ
Date of Analysis	08/6/96
Sample Matrix	Groundwater
Dilution	X 1.02

Compound Name	1- 63322	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	13	ug/L	5	
2-Methylnaphthalene	13	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	45
2-Flourobiphenyl	43-116	37
Terphenyl -d14	33-141	42

COMMENTS : T= Value reported is less than the laboratory detection limit. The data is reported for informational purposes only.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/29/96
Report Generated
Page 1 of 1 End of Report

D-56

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DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63322
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63322			
Sample Name / Location	MW-13 NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 -JM			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63322	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	113

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
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D-57

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Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63322
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63322		
Sample Name / Location	MW-13 NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 1200		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 JM		
Date of Analysis	08/15/96		
Sample Matrix	Groundwater		
Dilution		x	1
Parameter	1- 63322	units	Det. Limit
Petroleum Range Organics by FLPRO	6.6	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	82
Nonatriacontane (C-39)	42-193 *	82

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/20/96

Page 1 of 1

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 63323
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63323
Sample Name / Location	Duplicate NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/02/96 - JM
Date of Analysis	08/02/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 63323	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	103
Toluene-d8	86-119	104
Bromoflourobenzene	85-116	100

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
Report Generated

D-59

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 63323
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63323			
Sample Name / Location	Duplicate NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	08/4/96; JJ			
Date of Analysis	08/7/96			
Sample Matrix	Groundwater			
Dilution		X	1.02	
Compound Name	1- 63323	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	16	ug/L	5	
2-Methylnaphthalene	15	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	49
2-Flouroblphenyl	43-116	44
Terphenyl -d14	33-141	50

COMMENTS : T= Value reported is less than the laboratory detection limit. The data is reported for informational purposes only.

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/29/96
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D-60

Navy Public Works Center
Environmental Laboratory

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Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63323
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63323			
Sample Name / Location	Duplicate NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 - BJ			
Date of Analysis	08/03/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 63323	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	90

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
Report Generated
Page 1 of 1 End of Report

Navy Public Works Center
Environmental Laboratory

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Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 63323
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63323		
Sample Name / Location	Duplicate NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / Initials	08/02/96 -JM		
Date of Analysis	08/15/96		
Sample Matrix	Groundwater		
Dilution	x 1		
Parameter	1- 63323	units	Det. Limit
Petroleum Range Organics by FLPRO	6.1	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	59
Nonatriacontane (C-39)	42-193 *	57

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/20/96

Page 1 of 1

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 63324
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63324
Sample Name / Location	Equipment Blank NAS 21
Collector's Name	PJB
Date & Time Collected	07/31/96 @ 0750
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/02/96 JM
Date of Analysis	08/02/96
Sample Matrix	Distilled Water
Dilution	X 1

Compound Name	1- 63324	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	2	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	2	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	100
Toluene-d8	86-119	97
Bromoflourobenzene	85-116	96

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-63

Date: 8/19/96
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Navy Public Works Center
Environmental Laboratory

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NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 63324
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63324			
Sample Name / Location	Equipment Blank NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 0750			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	08/4/96; JJ			
Date of Analysis	08/7/96			
Sample Matrix	Distilled Water			
Dilution	X 1.01			
Compound Name	1- 63324	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	5	
Acenaphthylene	BDL	ug/L	5	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	3	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	4	
Benzo(g,h,i)perylene	BDL	ug/L	3	
Benzo(k)flouranthene	BDL	ug/L	4	
Chrysene	BDL	ug/L	3	
Dibenz(a,h)anthracene	BDL	ug/L	3	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	4	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	5	
2-Methylnaphthalene	BDL	ug/L	7	
Naphthalene	BDL	ug/L	7	
Phenanthrene	BDL	ug/L	3	
Pyrene	BDL	ug/L	3	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	56
2-Flouroblphenyl	43-116	57
Terphenyl -d14	33-141	65

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
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Page 1 of 1 End of Report

D-64

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 63324
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63324			
Sample Name / Location	Equipment Blank NAS 21			
Collector's Name	PJB			
Date & Time Collected	07/31/96 @ 0750			
Sample Type (composite or grab)	Grab			
Analyst	B. Jacquart			
Date of Extraction / Initials	08/03/96 BJ			
Date of Analysis	08/03/96			
Sample Matrix	Distilled Water			
Dilution	X 1			
Compound Name	1- 63324	units	Det. Limit	Flags
Ethylene Dibromide (EDB)	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	89

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram.

Approved by : Jerry Degs, Laboratory Director

Date: 8/19/96
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Page 1 of 1 End of Report

D-65

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab Report Number: 63324
Sample Date: 07/31/96
Received Date: 08/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63324		
Sample Name / Location	Equipment Blank NAS 21		
Collector's Name	PJB		
Date & Time Collected	07/31/96 @ 0750		
Sample Type (composite or grab)	Grab		
Analyst	B. Jacquart		
Date of extraction / initials	08/02/96 JM		
Date of Analysis	08/15/96		
Sample Matrix	Distilled Water		
Dilution	x 1		
Parameter	1- 63324	units	Det. Limit
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	128
Nonatriacontane (C-39)	42-193 *	97

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = Milligram per liter. mg/Kg = Milligram per kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 63325
Sample Date: 7/31/96
Received Date: 8/1/96
Sample Site: NAS 21
Job Order No.: 1305001

LAB Sample ID#	1- 63325
Sample Name / Location	Trip Blank NAS 21
Collector's Name	PJB
Date & Time Collected	7/31/96; AM
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	08/02/96 - JM
Date of Analysis	08/02/96
Sample Matrix	Distilled Water
Dilution	X 1

Compound Name	1- 63325	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	5	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	5	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	5	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	102
Toluene-d8	86-119	98
Bromoflourobenzene	85-116	100

COMMENTS :

BDL = Below Detection Limit. ug/L = Microgram per liter. ug/Kg = Microgram per kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 8/19/96
Report Generated

D-67

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 7.31.96
Received Date: 8.01.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1-63323	#2-63324	#3-63325	#4-
Sample Name or Location	----------	Duplicate	EQ. BLANK	Trip BLANK	
Sampled by	----------	PJB ✓	PJB ✓	PJB ✓	
Composite Date/Time Collected	Begin				
	Frequency	7-31-96	7-31-96	7-31-96	
	End				
Grab Time	----------	—	0750	AM	
Sample Matrix	----------	GW	DI	DI	

Notes: K.A.G. (Less Pb)

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB					3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	2 VOA			6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgerables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW ~~8310~~ 610	X	2 PAH	X	2 PAH						1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	~~EPA 418.1~~ FL PRO	X	2 TPH	X	2 TPH						Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: Patil D. [illegible] WES, Inc.
Date/Time: 8.1.96 / 1400

Received by: J. Moore
Date/Time: 8-1-96 1400

PWC 9510/6

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 7.31.96
Received Date: 8.01.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1- 63315		#2- 63316		#3- 63317		#4- 63318		Notes:
Sample Name or Location	----------	MW-6 ✓		MW-7 ✓		MW-8 ✓		MW-9 ✓		K.A.G. (Less Pb)
Sampled by	----------	PJB		PJB		PJB		PJB		
Composite Date/Time Collected	Begin									
	Frequency	7-31-96		7-31-96		7-31-96		7-31-96		
	End									
Grab Time	----------	0815		0845		0830		0800		
Sample Matrix	----------	GW		GW		GW		GW		

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB	X	2 EDB	X	2 EDB	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	4 VOA	X	4 VOA	6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW ~~8310~~ 610	X	2 PAH	X	2 PAH	X	2 PAH	X	2 PAH		1Lx3/4 oz.	4° C/None

PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL PRO ~~EPA 418.1~~	X	2 TPH	X	2 TPH	X	2 TPH	X	2 TPH		Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: Patil L Vo WES, Inc.
Date/Time: 8.1.96 / 1400

Received by: J W Moore
Date/Time: 8-1-96 8-1-96 1400

PWC 9510/6

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 7.31.96
Received Date: 8.01.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1- 63319	#2- 63320	#3- 63321	#4- 63322
Sample Name or Location	----------	MW-10	MW-11	MW-12	MW-13
Sampled by	----------	PJB	PJB	PJB	PJB
Composite Date/Time Collected	Begin				
	Frequency	7-31-96	7-31-96	7-31-96	7-31-96
	End				
Grab Time	----------	1140	1120	1100	1200
Sample Matrix	----------	GW	GW	GW	GW

Notes: K.A.G. (Less Pb)

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Container Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB	X	2 EDB	X	2 EDB	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	4 VOA	X	4 VOA	6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW ~~8310~~ 610	X	2 PAH	X	2 PAH	X	2 PAH	X	2 PAH		1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL PRO ~~EPA 418.1~~	X	2 TPH	X	2 TPH	X	2 TPH	X	2 TPH		Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: [signature] WES, Inc.
Date/Time: 8.1.96 / 1400

Received by: [signature]
Date/Time: 8-1-96 1400

PWC 951006

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64057
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- **64057**
Sample Name / Location	Site 21 MW-14
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1030
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/26/96 JM
Date of Analysis	09/26/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64057	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	104
Toluene-d8	86-119	102
Bromoflourobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-71

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 64057
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64057			
Sample Name / Location	Site 21 MW-14			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/02/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64057	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	72
2-Flourobiphenyl	43-116	69
Terphenyl -d14	33-141	71

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deer, Laboratory Director

Date: 10/7/96
Report Generated

D-72

Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64057
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64057			
Sample Name / Location	Site 21 MW-14			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64057	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	73

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-73

Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Lab Report Number: 64057
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64057			
Sample Name / Location	Site 21 MW-14			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 64057	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	94
Nonatriacontane (C-39)	42-193 *	56

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-74

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64058
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64058			
Sample Name / Location	Site 21 MW-15			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	09/26/96 JM			
Date of Analysis	09/26/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64058	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	106
Toluene-d8	86-119	99
Bromoflourobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-75

Date: 10/7/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64058
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64058			
Sample Name / Location	Site 21 MW-15			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64058	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,I)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	62
2-Flouroblphenyl	43-116	69
Terphenyl -d14	33-141	82

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-76

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64058
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64058			
Sample Name / Location	Site 21 MW-15			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64058	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	87

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Daee, Laboratory Director

Date: 10/7/96
Report Generated

D-77

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client:	NPWC Environmental
Address:	Bldg. 3887, Code 910 NAS Pensacola,FL 32508
Phone #:	(904) 452-3180
Contact:	Greg Campbell

Lab Report Number:	64056
Sample Date:	09/25/96
Received Date:	09/26/96
Sample Site:	NAS Pensacola, FL
Job Order No.:	130 5001

LAB Sample ID#	1- 64058			
Sample Name / Location	Site 21 MW-15			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution		x	1	
Parameter	1- 64058	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	104
Nonatriacontane (C-39)	42-193 *	63

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-78

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64059
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64059			
Sample Name / Location	Site 21 MW-16			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	09/26/96 JM			
Date of Analysis	09/26/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64059	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	108
Toluene-d8	86-119	106
Bromoflourobenzene	85-116	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-79

Date: 10/7/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 64059
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64059			
Sample Name / Location	Site 21 MW-16			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/02/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64059	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	74
2-Flourobiphenyl	43-116	71
Terphenyl -d14	33-141	80

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Does, Laboratory Director

Date: 10/7/96
Report Generated

D-80

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64059
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64059			
Sample Name / Location	Site 21 MW-16			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64059	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	79

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees/Laboratory Director

Date: 10/7/96
Report Generated

D-81

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Lab Report Number: 64059
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64059			
Sample Name / Location	Site 21 MW-16			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 64059	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	102
Nonatriacontane (C-39)	42-193 *	68

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-82

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64060
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64060
Sample Name / Location	Site 21 MW-17
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1200
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/26/96 JM
Date of Analysis	09/26/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64060	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	108
Toluene-d8	86-119	101
Bromoflourobenzene	85-116	100

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-83

Date: 10/7/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 64060
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64060
Sample Name / Location	Site 21 MW-17
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1200
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	09/30/96 JJ
Date of Analysis	10/04/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64060	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	56
2-Flourobiphenyl	43-116	68
Terphenyl -d14	33-141	77

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-84

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64060
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64060			
Sample Name / Location	Site 21 MW-17			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64060	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	78

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deen, Laboratory Director

Date: 10/7/96
Report Generated

D-85

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 64060
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64060			
Sample Name / Location	Site 21 MW-17			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 64060	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	105
Nonatriacontane (C-39)	42-193 *	70

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deer, Laboratory Director

Date: 10/7/96

D-86

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64061
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64061
Sample Name / Location	Site 21 MW-18
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1230
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/26/96 JM
Date of Analysis	09/26/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64061	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	2	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	107
Toluene-d8	86-119	101
Bromoflourobenzene	85-116	100

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-87

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64061
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64061			
Sample Name / Location	Site 21 MW-18			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/02/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64061	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	65
2-Flourobiphenyl	43-116	62
Terphenyl -d14	33-141	79

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deas, Laboratory Director

Date: 10/7/96
Report Generated

D-88

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64061
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64061			
Sample Name / Location	Site 21 MW-18			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64061	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	82

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dase, Laboratory Director

Date: 10/7/96
Report Generated

D-89

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 64061
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64061			
Sample Name / Location	Site 21 MW-18			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution		x	1	
Parameter	1- 64061	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	104
Nonatriacontane (C-39)	42-193 *	71

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-90

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64062
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64062			
Sample Name / Location	Site 21 MW-19			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1300			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	09/26/96 JM			
Date of Analysis	09/26/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64062	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	2	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	2	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	110
Toluene-d8	86-119	102
Bromoflourobenzene	85-116	104

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/8/96
Report Generated

D-91

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64062
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64062			
Sample Name / Location	Site 21 MW-19			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1300			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/02/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64062	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	3	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	48	ug/L	2	
2-Methylnaphthalene	47	ug/L	3	
Naphthalene	18	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene-d5	35-114	46
2-Flourobiphenyl	43-116	32 **
Terphenyl -d14	33-141	40

COMMENTS : ** = One surrogate allowed outside acceptance limits by method.

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deegs, Laboratory Director

Date: 10/8/96
Report Generated

D-92

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64062
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64062			
Sample Name / Location	Site 21 MW-19			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1300			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64062	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	60

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deer, Laboratory Director

Date: 10/7/96
Report Generated

D-93

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Lab Report Number: 64062
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64062			
Sample Name / Location	Site 21 MW-19			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1300			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 64062	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	15	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	68
Nonatriacontane (C-39)	42-193 *	43

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deco, Laboratory Director

Date: 10/7/96

D-94

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64063
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64063
Sample Name / Location	Site 21 MW-20
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1330
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/27/96 JM
Date of Analysis	09/27/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64063	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	115
Toluene-d8	86-119	102
Bromoflourobenzene	85-116	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-95

Date: 10/8/96
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64063
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64063			
Sample Name / Location	Site 21 MW-20			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1330			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/02/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64063	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	3	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	69
2-Flourobiphenyl	43-116	68
Terphenyl -d14	33-141	86

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deer, Laboratory Director

Date: 10/7/96
Report Generated

D-96

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64063
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64063			
Sample Name / Location	Site 21 MW-20			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1330			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64063	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	70

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-97

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Lab Report Number: 64063
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64063			
Sample Name / Location	Site 21 MW-20			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1330			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 64063	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	97
Nonatriacontane (C-39)	42-193 *	65

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deas, Laboratory Director

Date: 10/7/96

D-98

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64064
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64064
Sample Name / Location	Duplicate
Collector's Name	SC
Date & Time Collected	N/S
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/27/96 JM
Date of Analysis	09/27/96
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 64064	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	112
Toluene-d8	86-119	100
Bromoflourobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deer, Laboratory Director

Date: 10/7/96
Report Generated

D-99

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64064
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64064			
Sample Name / Location	Duplicate			
Collector's Name	SC			
Date & Time Collected	N/S			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	09/30/96 JJ			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64064	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	72
2-Flourobiphenyl	43-116	75
Terphenyl -d14	33-141	83

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-100

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64064
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64064			
Sample Name / Location	Duplicate			
Collector's Name	SC			
Date & Time Collected	N/S			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 64064	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	88

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deets, Laboratory Director

Date: 10/7/96
Report Generated

D-101

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 64064
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64064			
Sample Name / Location	Duplicate			
Collector's Name	SC			
Date & Time Collected	N/S			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	GW			
Dilution		x	1	
Parameter	1- 64064	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	95
Nonatriacontane (C-39)	42-193 *	72

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-102

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64065
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64065
Sample Name / Location	Eq. Blank
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1000
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/26/96 JM
Date of Analysis	09/26/96
Sample Matrix	DI
Dilution	X 1

Compound Name	1- 64065	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	2	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	2	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	105
Toluene-d8	86-119	101
Bromoflourobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-103

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64065
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64065
Sample Name / Location	Eq. Blank
Collector's Name	SC
Date & Time Collected	09/25/96 @ 1000
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	09/30/96 JJ
Date of Analysis	10/04/96
Sample Matrix	DI
Dilution	X 1

Compound Name	1- 64065	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)flouranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)flouranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Flouranthene	BDL	ug/L	2	
Flourene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	63
2-Flourobiphenyl	43-116	69
Terphenyl -d14	33-141	66

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-104

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64065
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64065			
Sample Name / Location	Eq. Blank			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1000			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	10/01/96 JM			
Date of Analysis	10/01/96			
Sample Matrix	DI			
Dilution	X 1			
Compound Name	1- 64065	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	97

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Deas, Laboratory Director

Date: 10/7/96
Report Generated

D- 105

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report
Petroleum Range Organics by FLPRO

Lab Report Number: 64065
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64065			
Sample Name / Location	Eq. Blank			
Collector's Name	SC			
Date & Time Collected	09/25/96 @ 1000			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	10/04/96 JM			
Date of Analysis	10/04/96			
Sample Matrix	DI			
Dilution		x	1	
Parameter	1- 64065	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	94
Nonatriacontane (C-39)	42-193 *	64

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96

D-106

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64066
Sample Date: 09/25/96
Received Date: 09/26/96
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5001

LAB Sample ID#	1- 64066
Sample Name / Location	Trip Blank
Collector's Name	SC
Date & Time Collected	09/25/96 @ AM
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	09/26/96 JM
Date of Analysis	09/26/96
Sample Matrix	DI
Dilution	X 1

Compound Name	1- 64066	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodiflouromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichloroflouromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	104
Toluene-d8	86-119	99
Bromoflourobenzene	85-116	99

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 10/7/96
Report Generated

D-107

1.3

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

/C Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-0500

Ph#-(904)452-4726
Autovon-922-4726

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.25.96
Received Date: 9.26.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1-6-4057		#2-6-4058		#3-6-4059		#4-6-4060		Notes:		
Sample Name or Location	----------	MW-14		MW-15		MW-16		MW-17		K.A.G. (Less Pb)		
Sampled by	----------	SC		SC		SC		SC				
Composite Date/Time Collected	Begin											
	Frequency	9-25 →										
	End											
Grab Time	----------	1030		1100		1130		1200				
Sample Matrix	----------	GW		GW		GW		GW				
PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	Y	2 EDB	X	2 EDB	X	2 EDB	X	2 EDB	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro /GC	EPA 601/602	Y	4 VOA	X	4 VOA	X	4 VOA	X	4 VOA	6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									6	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org /GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org /GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org /GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo /Arom. Vol. Org /GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310	Y	2 PAH	X	2 PAH	X	2 PAH	X	2 PAH		1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FC EPA 418.1 PRO	Y	2 TPH	X	2 TPH	X	2 TPH	X	2 TPH		Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: [signature] / WES, FLC.
Date/Time: 9.26.96 / 0900

Received by: B. Hagendorfer
Date/Time: 9-26-96 0900

NWC 9510/8

2.3

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg 3297, Code 920
NAS Pensacola, FL 32508-6500

Ph#-(904)452-4726
Autovon-922-4726

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.25.96
Received Date: 9.26.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1 6-4061		#2 6-4062		#3 6-4063		#4 6-4064		Notes:		
Sample Name or Location	----------	MW-18		MW-19		MW-20		Duplicate		K.A.G. (Less Pb)		
Sampled by	----------	SC		SC		SC		SC				
Composite Date/Time Collected	Begin											
	Frequency	9-25 →										
	End											
Grab Time	----------	1230		1300		1330		—				
Sample Matrix	----------	GW		GW		GW		GW				
PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB	X	2 EDB	X	2 EDB	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCV/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCV/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	4 VOA	X	4 VOA	6	40 ml VOA Vial x 2	HCV/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCV/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCV/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCV/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCV/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCV/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCV/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310	X	2 PAH	X	2 PAH	X	3 PAH	X	2 PAH		1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL ~~EPA 418.1~~ PRO	X	2 TPH	X	2 TPH	X	3 TPH	X	2 TPH		Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 9.26.96 / 0900

Received by: [signature]
Date/Time: 9.26.96 0900

PWC 9510/6

3.3

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 130500

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 9.25.96
Received Date: 9.26.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1- 6-4065	#2- 6-4066	#3-	#4-
Sample Name	----------	EQ. BLANK	Trip BLANK		
or Location	----------				
Sampled by	----------	SC	SC		
Composite	Begin				
Date/Time	Frequency	9-25 →			
Collected	End				
Grab Time	----------	1000	AM		
Sample Matrix	----------	DI	DI		

Notes: K.A. 6. (Less Pb)

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB							3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCV/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCV/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	3 VOA					6	40 ml VOA Vial x 2	HCV/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
P[illegible]ables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCV/4° C
/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCV/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCV/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									8	40ml VOAx2/4 oz.	HCV/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCV/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCV/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310	X	2 PAH								1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL ~~EPA 418.1~~ PRO	X	2 TPH								Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: [illegible] / WES, FLC.
Date/Time: 9.26.96 / 0900

Received by: [illegible]
Date/Time: 9.26.96 / 0900

PWC 95108

D-110

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64647
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- **64647**
Sample Name / Location	Equipment Blank NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1015
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Deionized Water
Dilution	X 1

Compound Name	1- 64647	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	105
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	99

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D- 111

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64647
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64647
Sample Name / Location	Equipment Blank NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1015
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	11/21/96 JJ
Date of Analysis	11/22/96
Sample Matrix	Deionized Water
Dilution	X 1

Compound Name	1- 64647	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	71
2-Fluorobiphenyl	43-116	77
Terphenyl -d14	33-141	83

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-112

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64647
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64647			
Sample Name / Location	Equipment Blank NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1015			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Deionized Water			
Dilution	X 1			
Compound Name	1- 64647	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	98

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-113

End of Report

Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64647
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64647			
Sample Name / Location	Equipment Blank NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1015			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Deionized Water			
Dilution	x 1			
Parameter	1- 64647	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	86
Nonatriacontane (C-39)	42-193 *	103

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-114

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64648
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64648
Sample Name / Location	MW-21 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1030
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64648	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	113
Toluene-d8	86-119	107
Bromofluorobenzene	85-116	103

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-115

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64648
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64648			
Sample Name / Location	MW-21 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	11/21/96 JJ			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64648	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	2	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene-d5	35-114	61
2-Fluorobiphenyl	43-116	65
Terphenyl -d14	33-141	72

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-116

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
Ethylene Dibromide by Method 504

Lab Report Number: 64648
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64648			
Sample Name / Location	MW-21 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64648	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	75

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-117

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64648
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64648			
Sample Name / Location	MW-21 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1030			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution	x 1			
Parameter	1- 64648	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	0.29	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	84
Nonatriacontane (C-39)	42-193 *	94

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-118

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64649
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64649
Sample Name / Location	MW-22 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1100
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64649	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	111
Toluene-d8	86-119	102
Bromofluorobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

D-119

Date: 12/4/96
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64649
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64649			
Sample Name / Location	MW-22 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	11/21/96 JJ			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64649	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	43
2-Fluorobiphenyl	43-116	50
Terphenyl -d14	33-141	78

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deas, Laboratory Director

Date: 12/4/96
Report Generated

D-120

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64649
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64649			
Sample Name / Location	MW-22 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64649	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	91

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-121

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64649
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64649			
Sample Name / Location	MW-22 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution		x	1	
Parameter	1- 64649	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	59
Nonatriacontane (C-39)	42-193 *	75

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-122

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64650
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64650
Sample Name / Location	MW-23 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1130
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64650	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	107
Toluene-d8	86-119	100
Bromofluorobenzene	85-116	97

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated
End of Report

D-123

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64650
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64650			
Sample Name / Location	MW-23 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	11/21/96 JJ			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64650	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	60
2-Fluorobiphenyl	43-116	66
Terphenyl -d14	33-141	74

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-124

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64650
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64650			
Sample Name / Location	MW-23 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64650	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	104

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-125

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64650
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64650			
Sample Name / Location	MW-23 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1130			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution	x 1			
Parameter	1- 64650	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	94
Nonatriacontane (C-39)	42-193 *	125

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-126

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 64651
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64651
Sample Name / Location	MW-24 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1200
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64651	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	107
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-127

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64651
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64651
Sample Name / Location	MW-24 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1200
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	11/21/96 JJ
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64651	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	67
2-Fluorobiphenyl	43-116	70
Terphenyl -d14	33-141	79

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deen, Laboratory Director

Date: 12/4/96
Report Generated

D-128

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64651
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64651			
Sample Name / Location	MW-24 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64651	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	104

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-129

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64651
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64651			
Sample Name / Location	MW-24 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1200			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution		x	1	
Parameter	1- 64651	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	92
Nonatriacontane (C-39)	42-193 *	128

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-130

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64652
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64652
Sample Name / Location	MW-25 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1230
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64652	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	107
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-131

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64652
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64652
Sample Name / Location	MW-25 NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ 1230
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	11/21/96 JJ
Date of Analysis	11/23/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64652	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,I)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene-d5	35-114	65
2-Fluorobiphenyl	43-116	66
Terphenyl -d14	33-141	77

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-132

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64652
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64652			
Sample Name / Location	MW-25 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64652	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	72

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-133

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64652
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64652			
Sample Name / Location	MW-25 NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution		x	1	
Parameter	1- 64652	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	89
Nonatriacontane (C-39)	42-193 *	112

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96

D-134

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64653
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64653
Sample Name / Location	Duplicate NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ N/S
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64653	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	114
Toluene-d8	86-119	106
Bromofluorobenzene	85-116	103

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-135

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 64653
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64653
Sample Name / Location	Duplicate NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @ N/S
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	11/21/96 JJ
Date of Analysis	11/23/96
Sample Matrix	Groundwater
Dilution	X 1

Compound Name	1- 64653	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	65
2-Fluorobiphenyl	43-116	68
Terphenyl -d14	33-141	83

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-136

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 64653
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64653			
Sample Name / Location	Duplicate NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ N/S			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	11/22/96 MC			
Date of Analysis	11/22/96			
Sample Matrix	Groundwater			
Dilution	X 1			
Compound Name	1- 64653	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	63

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/96
Report Generated

D-137

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Lab Report Number: 64653
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64653			
Sample Name / Location	Duplicate NAS Site 21			
Collector's Name	P.J.B.			
Date & Time Collected	11/20/96 @ N/S			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	11/22/96 JJ			
Date of Analysis	11/26/96			
Sample Matrix	Groundwater			
Dilution		x	1	
Parameter	1- 64653	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	0.30	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	91
Nonatriacontane (C-39)	42-193 *	119

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deas, Laboratory Director

Date: 12/4/96

D-138

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola, FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 64654
Sample Date: 11/20/96
Received Date: 11/20/96
Sample Site: NASP Site 21
Job Order No.: 130 5001

LAB Sample ID#	1- 64654
Sample Name / Location	Trip Blank NAS Site 21
Collector's Name	P.J.B.
Date & Time Collected	11/20/96 @AM
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	11/22 96 JM
Date of Analysis	11/22/96
Sample Matrix	Deionized Water
Dilution	X 1

Compound Name	1- 64654	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	106
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	98

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 12/4/98
Report Generated

End of Report

D-139

1 of 2

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 11.20.96
Received Date: 11.20.96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1- 64647		#2- 64648		#3- 64649		#4- 64650		Notes:		
Sample Name or Location	----------	EQ. Blank		MW-21		MW-22		MW-23		K.A.O. (Less Pb)		
Sampled by	----------	PJB		PJB		PJB		PJB				
Composite Date/Time Collected	Begin											
	Frequency											
	End											
Grab Time	----------	1015		1030		1100		1130				
Sample Matrix	----------	DI		GW		GW		GW				
PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB	X	2 EDB	X	2 EDB	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCV/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCV/4° C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	4 VOA	X	4 VOA	6	40 ml VOA Vial x 2	HCV/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCV/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCV/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCV/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCV/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCV/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCV/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCV/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A			~~X~~						16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310	X	2 PAH	X	2 PAH	X	2 PAH	X	3 PAH		1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Gasoline Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846										Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL ~~ERA 418.1~~ PRO	X	2 TPH	X	2 TPH	X	2 TPH	X	3 TPH		Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various										Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846										Consult Lab	Consult Lab
Lead (Pb)	EPA 239.2										250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: Peter A. Yon / WES, Inc.
Date/Time: 11.20.96 / 1530

Received by: Kathy Bevels
Date/Time: 11/20/96 1530

PWC 9510/6

D-140

UST CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

,C Environmental Laboratory
Bldg.3297, Code 920
NAS Pensacola, Fl. 32508-6500

Ph#-(904)452-4728
Autovon-922-4728

Report Required? Yes No DEP? Yes No

Requester: NPWC Environmental Dept.
Address: Bldg. 3691, Code 910
NAS Pensacola, FL 32508
Phone #: (904) 452-3180
Contact: Greg Campbell
Job Order #: 1305 001

Lab ID Number:
Sample Date: 11·20·96
Received Date: 11·20·96
Sample Site: NAS 21
Lab Due Date:

Sample ID #	Lab	#1- 64651		#2- 64652		#3- 64653		#4- 64654		Notes:
Sample Name or Location	----------	MW-24		MW-25		Duplicate		Trip Blank		K.A.G. (LESS Pb)
Sampled by	----------	PJB		PJB		PJB		JM		
Composite Date/Time Collected	Begin									
	Frequency									
	End									
Grab Time	----------	1200		1230		—		AM		
Sample Matrix	----------	GW		GW		GW		DI		
PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units / Containers Required / Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 EDB	X	2 EDB	X	2 EDB			3 / 120ml A VOA/4 oz. / None/4°C
Purg. Halocarbons/GC	EPA 601									4 / 40 ml VOA Vial x 2 / HCV/4°C
Purg. Aromatics/GC	EPA 602									3 / 40 ml VOA Vial x 2 / HCV/4°C
Purg. Halo. & Aro./GC	EPA 601/602	X	4 VOA	X	4 VOA	X	4 VOA	X	3 VOA	6 / 40 ml VOA Vial x 2 / HCV/4°C
Polynuclear Aromatics/HPLC	EPA 610									7 / 1L Amber x 2 / 4°C
Purgeables/GCMS	EPA 624									8 / 40 ml VOA Vial x 2 / HCV/4°C
Base/Neutrals & Acids/GCMS	EPA 625									15 / 1L Amber x 2 / 4°C
Gas Chromatography	EPA SW 8000									5 / 40mlx2/1Lx2/4 oz. / HCV/4°C/None
Halo. Vol. Org./GC	EPA SW 8010									4 / 40ml VOAx2/4 oz. / HCV/4°C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4 / 40mlx2/1Lx2/4 oz. / HCV/4°C/None
Arom. Vol. Org./GC	EPA SW 8020									3 / 40ml VOAx2/4 oz. / HCV/4°C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6 / 40ml VOAx2/4 oz. / HCV/4°C/None
Polynuclear Aromatics/GC	EPA SW 8100									6 / 1Lx2/4 oz. / 4°C/None
VOC/GCMS	EPA SW 8240A									8 / 40ml VOAx2/4 oz. / HCV/4°C/None
VOC/GCMS-Cap.	EPA SW 8260									8 / 40ml VOAx2/4 oz. / HCV/4°C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16 / 1Lx3/4 oz. / 4°C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310	X	2 PAH	X	2 PAH	X	2 PAH			1Lx3/4 oz. / 4°C/None
PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units / Containers Required / Preservative(s) Used
Gasoline Analytical Group	EPA SW-846									Consult Lab / Consult Lab
Kerosene Analytical Group	EPA SW-846									Consult Lab / Consult Lab
Mixed Product Analytical Group	EPA SW-846									Consult Lab / Consult Lab
Total Petroleum Hydrocarbons	FL ~~EPA 418.1~~ PRO	X	2 TPH	X	2 TPH	X	2 TPH			Consult Lab / Consult Lab
RCRA Metals (8)	EPA Various									Consult Lab / Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846									Consult Lab / Consult Lab
Lead (Pb)	EPA 239.2									250ml/4 oz. / HNO_3/None
Other:										

Comments:

Relinquished by: [signature] / WES, Inc.
Date/Time: 11·20·96 / 1530

Received by: Kathy Bessler
Date/Time: 11/20/96 1530

PWC 95108

D-141

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508
Phone (904) 452-4728/3642
DSN 922-4728/3642
FAX (904) 452-2799/2387

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9704022
Sample Date: 8 Apr 97
Received Date: 8 Apr 97
Sample Site: NAS Pensacola, FL
Job Order #: 130 5002

Sample ID#	Lab	1- 71420	2- 71421	3- 71422	4- 71423	Analyst(s):
Sample Name	Requester	Site #21, MW 1	Site #21, MW 2	Site #21, Equipment Blank	Site #21, MW 3	GFAA – Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	8 Apr 97 @ 1100	8 Apr 97 @ 1230	8 Apr 97 @ 1310	8 Apr 97 @ 1400	GFAA – 21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Deionized Water	Groundwater	

PARAMETER		ID#		Report.	ID#		Report.	ID#		Report.	ID#		Report.	
Metals:	METHOD #	1- 71420	units	Limit	2- 71421	units	Limit	3- 71422	units	Limit	4- 71423	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.004	mg/l	0.003	X 0.22	mg/l	0.015	X BDL	mg/l	0.003	X 0.004	mg/l	0.003	HNO_3 to pH<2

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 23-Apr-97 09:26

End of Report

PWC 5090/14

D-142

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508
Phone (904) 452-4728/3642
DSN 922-4728/3642
FAX (904) 452-2799/2387

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9704023
Sample Date: 8 Apr 97
Received Date: 8 Apr 97
Sample Site: NAS Pensacola, FL
Job Order #: 130 5002

Sample ID#	Lab	1- 71424	2- 71425	3- 71426	4-	Analyst(s):
Sample Name	Requester	Site #21, MW 4	Site #21, MW 5	Site #21, Duplicate		GFAA – Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane		
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	8 Apr 97 @ 1505	8 Apr 97 @ 1625	8 Apr 97		GFAA – 21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab		
Sample Matrix		Groundwater	Groundwater	Deionized Water		

PARAMETER		ID#		Report.	ID#		Report.	ID#		Report.	ID#		Report.	
Metals:	METHOD #	1- 71424	units	Limit	2- 71425	units	Limit	3- 71426	units	Limit	4-	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.008	mg/l	0.003	X 0.043	mg/l	0.003	X 0.003	mg/l	0.003		mg/l	0.003	HNO_3 to pH<2

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 23-Apr-97 09:27

End of Report

PWC 5090/14

D-143

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 71420
Sample Date: 04/08/97
Received Date: 04/08/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 71420			
Sample Name / Location	Site 21 NAS MW #1			
Collector's Name	P. Keane			
Date & Time Collected	04/08/97 @ 1100			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	04/10/97 MC			
Date of Analysis	04/10/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71420	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	106

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/23/97
Report Generated

D-144

End of Report

Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Ethylene Dibromide by Method 504

Lab Report Number: 71421
Sample Date: 04/08/97
Received Date: 04/08/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 71421			
Sample Name / Location	Site 21 NAS MW #2			
Collector's Name	P. Keane			
Date & Time Collected	04/08/97 @ 1230			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	04/10/97 MC			
Date of Analysis	04/10/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71421	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	112

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/23/97
Report Generated

D-145

 End of Report

Page 1 of 1 End of Report

Navy Public Works Center

Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 71424
Sample Date: 04/08/97
Received Date: 04/08/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 71424			
Sample Name / Location	Site 21 NAS MW #4			
Collector's Name	P. Keane			
Date & Time Collected	04/08/97 @ 1505			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	04/11/97 MC			
Date of Analysis	04/11/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71424	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	103

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/23/97
Report Generated

D-146

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-2170
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 71425
Sample Date: 04/08/97
Received Date: 04/08/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 71425			
Sample Name / Location	Site 21 NAS MW #5			
Collector's Name	P. Keane			
Date & Time Collected	04/08/97 @ 1625			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	04/11/97 MC			
Date of Analysis	04/11/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 71425	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	136

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 4/23/97
Report Generated

D-147

End of Report

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Requester: PINC ENVIRONMENTAL
Address: B-3887
NAS PENSACOLA, FL
Phone #: 452-2170
Contact: GREGG CAMPBELL
Job Order #: 1305002

Report Required? Yes No QC Required? Yes No
Lab ID Number:
Sample Date: 4/4/97
Received Date: 4/8/97
Sample Site: NAS SITE #21
Lab Due Date:

Sample ID #	Lab	#1-7-1420	#2-7-1421	#3-7-1422	#4-7-1423	Notes:
Sample Name	----------	NAS MW#1	NAS MW#2	NAS EB	NAS MW#3	
or Location	----------	SITE#21	SITE# 21	BLANK SITE#21	SITE# 21	
Sampled by	----------	P Reame	P Reame	P Reame	P Reame	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1100	1230	1310	1400	
Sample Matrix	----------	GW	GW	DI	GW	

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X	2 BOTT	X	2 BOTT		S P Reame 4/8/97	X	2 BOTT	3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgerables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAHs)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None

PARAMETER by Group Name	METHOD SOURCE	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Gasoline Analytical Group	EPA SW-846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL-PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									8	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1 BOTT	X	1 BOTT	X	1 BOTT	X	1 BOTT	1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: P Reame
Date/Time: 4/8/97 1645

Received by: P Reame
Date/Time: 4/8/97 1645

c:\123r24\forms\custody\ustf10 wk1 rev 0 8/28/96

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

WC Environmental Laboratory
g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4720/3642
DSN 922–4720/3642
FAX (904) 452–2799/2387

Requester: PWC ENVIRONMENTAL
Address: B-3887
NAS PENSACOLA, FL
Phone #: 452-2170
Contact: GREG CARRELL
Job Order #: 13'05002

Report Required? Yes No QC Required? Yes No

Lab ID Number:
Sample Date: 4/8/97
Received Date: 4/8/97
Sample Site: NAS SITE #21
Lab Due Date:

Sample ID #	Lab	#1- 7-1424	#2- 7-1425	#3-	#4- 7-1426	Notes:
Sample Name	----------	NAS MW 4	NAS MW 5		NAS SITE	
or Location	----------	SITE #21	SITE #21		21 Duplicate	
Sampled by	----------	[illegible]	[illegible]		[illegible]	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1505	1625			
Sample Matrix	----------	GW	GW		GW	

PARAMETER by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504	X		X						3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro /GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
s Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
nlo. Vol. Org /GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non–Halo. Vol. Org /GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org /GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo /Arom. Vol. Org /GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS – Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org. /GCMS – Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW–846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW–846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW–846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL–PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW–846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X		X				X		1	250ml/4 oz.	HNO/None
Other:												

Comments:

Relinquished by: [illegible]
Date/Time: 4/8/97 1645

Received by: [illegible]
Date/Time: 4/8/97 1645

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D-149

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508
Phone (904) 452-4728/3642
DSN 922-4728/3642
FAX (904) 452-2799/2387

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887, NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9704019
Sample Date: 9 Apr 97
Received Date: 9 Apr 97
Sample Site: NAS Pensacola, FL
Job Order #: 130 5002

Sample ID#	Lab	1- 71439	2- 71440	3- 71441	4- 71442	Analyst(s):
Sample Name	Requester	Site #21, MW 6	Site #21, MW 7	Site #21, MW 8	Site #21, MW 9	GFAA – Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time Collected (Military)	Comp start					
	Comp stop					Date(s) of analysis:
	Grab	9 Apr 97 @ 1100	9 Apr 97 @ 1155	9 Apr 97 @ 1300	9 Apr 97 @ 1345	GFAA – 21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER Metals:	METHOD #	ID# 1- 71439	units	Report. Limit	ID# 2- 71440	units	Report. Limit	ID# 3- 71441	units	Report. Limit	ID# 4- 71442	units	Report. Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X BDL	mg/l	0.003	X 0.093	mg/l	0.003	X 0.004	mg/l	0.003	X 0.016	mg/l	0.003	HNO_3 to pH<2

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Bees, Laboratory Director

Date/Time: 23-Apr-97 09:29

End of Report

PWC 5090/14

D-150

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508
Phone (904) 452-4728/3642
DSN 922-4728/3642
FAX (904) 452-2799/2387

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Report Number: 9704020
Sample Date: 9 Apr 97
Received Date: 9 Apr 97
Sample Site: NAS Pensacola, FL
Job Order #: 130 5002

Sample ID#	Lab	1- 71443	2- 71444	3- 71445	4- 71446	Analyst(s):
Sample Name	Requester	Site #21, MW 10	Site #21, MW 11	Site #21, MW 12	Site #21, MW 13	GFAA – Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	9 Apr 97 @ 1515	9 Apr 97 @ 1610	9 Apr 97 @ 1700	9 Apr 97 @ 1735	GFAA – 21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER		ID#			Report.	ID#			Report.	ID#			Report.	ID#			Report.	
Metals:	METHOD #	1-	71443	units	Limit	2-	71444	units	Limit	3-	71445	units	Limit	4-	71446	units	Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X	0.027	mg/l	0.003	X	0.042	mg/l	0.003	X	0.034	mg/l	0.003	X	0.035	mg/l	0.003	HNO_3 to pH<2

Comments: mg/kg=milligrams per kilogram. mg/l=milligrams per liter. BDL=Below Detection Limit.

Approved by: Jerry Dees, Laboratory Director

Date/Time: 23-Apr-97 09:30

End of Report

PWC 5090/14

D-151

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

SPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Requester: PWC ENVIRONMENTAL
Address: B-3887 NAS PENSACOLA FL
Phone #: 452-2107
Contact: GREG CAMBELL
Job Order #: 1305002

Report Required? Yes No QC Required? Yes No
Lab ID Number:
Sample Date: 4/9/97
Received Date: 4/9/97
Sample Site: NAS PENSACOLA FL Site #21
Lab Due Date:

Sample ID #	Lab	#1-7-1439	#2-7-1440	#3-7-1441	#4-7-1442	Notes:
Sample Name	----------	Site #21	Site #21	Site #21	Site #21	
or Location	----------	MW # 6	MW # 7	MW #8	MW #9	
Sampled by	----------	P Reame	P Reame	P Reame	P Reame	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1100	1155	1300	1345	
Sample Matrix	----------	GW	GW	GW	GW	

PARAMETER by Method Name	METHOD #	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504									3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgerbles/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW-846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL-PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1-1	X	1-1	X	1-1	X	1-1	1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: P Reame
Date/Time: 4/9/97 1755

Received by: P Reame
Date/Time: 4/9/97 1755

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CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

PWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, FL 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: NAVC ENVIRONMENTAL
Address: B-3887
NAS PENSACOLA, FL
Phone #: 452-2107
Contact: GREG CAMPBELL
Job Order #: 1305002

Lab ID Number:
Sample Date: 4/9/97
Received Date: 4/9/97
Sample Site: NAS PENSACOLA, SITE #21
Lab Due Date:

Sample ID #	Lab	#1- 7-1443	#2- 7-1444	#3- 7-1445	#4- 7-1446	Notes:
Sample Name	----------	Site #21	Site #21	Site #21	Site #21	
or Location	----------	MW #10	MW #11	MW #12	MW #13	
Sampled by	----------	T Reame	T Reame	T Reame	T Reame	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1515	1610	1700	1735	
Sample Matrix	----------	GW	GW	GW	GW	

PARAMETER by Method Name	METHOD #	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504									3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non-Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS-Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS-Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW-846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW-846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW-846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL-PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW-846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1-1	X	1-1	X	1-1	X	1-1	1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: T Reame
Date/Time: 4/9/97 1755

Received by: T Reame
Date/Time: 4/9/97 1755

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D-153

Navy Public Works Center
Environmental Laboratory

Bldg.3887, Code 920
NAS Pensacola, FL 32508-5303
Phone 904-452-4728/3642
DSN 922-3642

Laboratory Report
Total Lead

Requester: NPWC Environmental
Address: Bldg. 3887
NAS Pensacola, FL 32508
Phone #: 452-4728
Contact: Greg Campbell

Lab ID Number: 9704031
Sample Date: 10 Apr 97
Received Date: 10 Apr 97
Sample Site: NAS Pensacola Site #21
Job Order #: 130 5001

Sample ID#	Lab	1- 71464	2- 71465	3- 71466	4- 71467	Analyst(s):
Sample Name	Requester	NAS Site 21, MW #24	NAS Site 21, MW #20	NAS Site 21, MW #19	NAS Site 21, MW #25	Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	10 Apr 97 @ 1115	10 Apr 97 @ 1215	10 Apr 97 @ 1310	10 Apr 97 @ 1410	21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER Metals:	METHOD #	ID# 1- 71464	units	Det. Limit	ID# 2- 71465	units	Det. Limit	ID# 3- 71466	units	Det. Limit	ID# 4- 71467	units	Det. Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.007	mg/l	0.003	X 0.010	mg/l	0.003	X 0.026	mg/l	0.003	X 0.006	mg/l	0.003	None

D-154

Sample ID#	Lab	5- 71468	6- 71469	7- 71470	8- 71471	Analyst(s):
Sample Name	Requester	Site 1107, Duplicate	Site 1107, MW #23	Site 1107, MW #22	Site 1107, MW #21	Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	10 Apr 97	10 Apr 97 @ 1500	10 Apr 97 @ 1530	10 Apr 97 @ 1635	21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER Metals:	METHOD #	ID# 5- 71468	units	Det. Limit	ID# 6- 71469	units	Det. Limit	ID# 7- 71470	units	Det. Limit	ID# 8- 71471	units	Det. Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.015	mg/l	0.003	X 0.011	mg/l	0.003	X 0.013	mg/l	0.003	X 0.005	mg/l	0.003	None

Comments: mg/l=milligrams per liter.

Approved by: J W Moore, Chief Chemist for Jerry Dees, Laboratory Director **Date/Time:** 25-Apr-97 12:50

PWC 5090/14

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg.3887, Code 920
NAS Pensacola, FL 32508-5303
Phone 904-452-4728/3642
DSN 922-3642

Laboratory Report
Total Lead

Requester:	NPWC Environmental	Lab ID Number:	9704032
Address:	Bldg. 3887	Sample Date:	10 Apr 97
	NAS Pensacola, FL 32508	Received Date:	10 Apr 97
Phone #:	452-4728	Sample Site:	NAS Pensacola Site #21
Contact:	Greg Campbell	Job Order #:	130 5001

Sample ID#	Lab	1- 71472	2- 71473	3- 71474	4- 71484	Analyst(s):
Sample Name	Requester	NAS Site 21, MW #17	NAS Site 21, MW #15	NAS Site 21, MW #16	NAS Site 21, MW #14	Brian Nelson
Collector Name		P. Keane	P. Keane	P. Keane	P. Keane	
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	10 Apr 97 @ 1805	10 Apr 97 @ 1900	10 Apr 97 @ 1950	10 Apr 97 @ 0955	21 Apr 97
Sample Type	Comp/Grab	Grab	Grab	Grab	Grab	
Sample Matrix		Groundwater	Groundwater	Groundwater	Groundwater	

PARAMETER Metals:	METHOD #	ID# 1- 71472	units	Det. Limit	ID# 2- 71473	units	Det. Limit	ID# 3- 71474	units	Det. Limit	ID# 4- 71484	units	Det. Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.023	mg/l	0.003	X 0.034	mg/l	0.003	X 0.077	mg/l	0.003	X BDL	mg/l	0.003	None

D-155

Sample ID#	Lab	5- 71485	6-	7-	8-	Analyst(s):
Sample Name	Requester	Site 1107, MW #18				Brian Nelson
Collector Name		P. Keane				
Date/Time	Comp start					
Collected	Comp stop					Date(s) of analysis:
(Military)	Grab	10 Apr 97 @ 1030				21 Apr 97
Sample Type	Comp/Grab	Grab				
Sample Matrix		Groundwater				

PARAMETER Metals:	METHOD #	ID# 5- 71485	units	Det. Limit	ID# 6-	units	Det. Limit	ID# 7-	units	Det. Limit	ID# 8-	units	Det. Limit	Preservative(s)
Lead(Pb)	EPA 239.2	X 0.016	mg/l	0.003		mg/l	0.003		mg/l	0.003		mg/l	0.003	None

Comments: mg/l=milligrams per liter.

Approved by: J. W. Moore, Chief Chemist for Jerry Dees, Laboratory Director

Date/Time: 25-Apr-97 12:45

PWC 5090/14

End of Report

Pg #1/3

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

NPWC Environmental Laboratory
Bldg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? Yes No QC Required? Yes No

Requester: NAVC ENVIRONMENTAL
Address: B-3887
NAS PENSACOLA, FL
Phone #: 452-2107
Contact: GREG CAMPBELL
Job Order #: 1305002

Lab ID Number:
Sample Date: 4/10/97
Received Date: 4/10/97
Sample Site: NAS PENSACOLA, FL SITE #21
Lab Due Date:

Sample ID #	Lab	#1-7-1464	#2-7-1465	#3-7-1466	#4-7-1467	Notes:
Sample Name	----------	NAS SITE#21	NAS SITE 21	NAS SITE21	NAS SITE 21	
or Location	----------	MW# 24	MW# 20	MW# 19	MW# 25	
Sampled by	----------	PReame	PReame	PReame	PReame	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1115	1215	1310	1410	
Sample Matrix	----------	GW	GW	GW	GW	

PARAMETER by Method Name	METHOD #	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504									3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
Purgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non–Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS–Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS–Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW–846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW–846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW–846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA-418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL–PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW–846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1-1	X	1-1	X	1-1	X	1-1	1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: PReame
Date/Time: 4/10/97 2005

Received by: PReame
Date/Time: 4/10/97 2005

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D-156

BT #2/3

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

.: Environmental Laboratory
.g. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2790/2387

Report Required? (Yes) No QC Required? Yes No

Requester: NAVC ENVIRONMENTAL
Address: B 3887
NAS PENSACOLA, FL
Phone #: 452-2107
Contact: GREGG CAMBELL
Job Order #: 1305002

Lab ID Number:
Sample Date: 4/10/97
Received Date: 4/10/97
Sample Site: NAS PENSACOLA FL SITE #21
Lab Due Date:

Sample ID #	Lab	#1- 7-1468	#2- 7-1469	#3- 7-1470	#4- 7-1471	Notes:
Sample Name	----------	Site 21	MW 23	MW 22	MW 21	
or Location	----------	DUPLICATE	Site 21	Site 21	Site 21	
Sampled by	----------	PKeam	PKeam	PKeam	PKeam	
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	—	1500	1530	1635	
Sample Matrix	----------	GW	GW	GW	GW	

PARAMETER by Method Name	METHOD #	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504									3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
1. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
.ynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
.urgeables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
Base/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non–Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									8	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS–Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS–Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW–846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW–846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW–846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL–PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW–846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1-1	X	1-1	X	1-1	X	1-1	1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: PKeam
Date/Time: 4/10/97 2005

Received by: PKeam
Date/Time: 4/10/97 2005

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Pg # 3/3

CHAIN OF CUSTODY/REQUEST FOR ANALYSIS (UST Projects)

/C Environmental Laboratory
dg. 3887, Code 920
NAS Pensacola, Fl. 32508
Phone – (904) 452–4728/3642
DSN 922–4728/3642
FAX (904) 452–2799/2387

Report Required? (Yes) No QC Required? Yes No

Requester: NPWC ENVIRONMENTAL
Address: B-3887
NAS PENSACOLA, FL
Phone #: 452-2107
Contact: GREGG CAMBELL
Job Order #: 1305082

Lab ID Number:
Sample Date: 4/10/97
Received Date: 4/10/97
Sample Site: NAS PENSACOLA, FL
Lab Due Date:

Sample ID #	Lab	#1- 7-1472	#2- 7-1473	#3- 7-1474	#4-	Notes:
Sample Name	----------	Site #21	Site #21	Site #21		
or Location	----------	MW #17	MW #15	MW #16		
Sampled by	----------	PKeane	PKeane	PKeane		
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1805	1900	1950		
Sample Matrix	----------	GW	GW	GW		

PARAMETER by Method Name	METHOD #	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	1-1 Bottle ID #'s	X	Bottle ID #'s	Billing Units	Containers Required	Preservative(s) Used
Ethylene Dibromide (EDB)	EPA 504									3	120ml A VOA/4 oz.	None/4° C
Purg. Halocarbons/GC	EPA 601									4	40 ml VOA Vial x 2	HCl/4° C
Purg. Aromatics/GC	EPA 602									3	40 ml VOA Vial x 2	HCl/4° C
Purg. Halo. & Aro./GC	EPA 601/602									6	40 ml VOA Vial x 2	HCl/4° C
Polynuclear Aromatics/HPLC	EPA 610									7	1L Amber x 2	4° C
...ables/GCMS	EPA 624									8	40 ml VOA Vial x 2	HCl/4° C
...se/Neutrals & Acids/GCMS	EPA 625									15	1L Amber x 2	4° C
Gas Chromatography	EPA SW 8000									5	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Halo. Vol. Org./GC	EPA SW 8010									4	40ml VOAx2/4 oz.	HCl/4° C/None
Non–Halo. Vol. Org./GC	EPA SW 8015(MOD)									4	40mlx2/1Lx2/4 oz.	HCl/4° C/None
Arom. Vol. Org./GC	EPA SW 8020									3	40ml VOAx2/4 oz.	HCl/4° C/None
Halo./Arom. Vol. Org./GC	EPA SW 8010/8020									6	40ml VOAx2/4 oz.	HCl/4° C/None
Polynuclear Aromatics/GC	EPA SW 8100									6	1Lx2/4 oz.	4° C/None
VOC/GCMS	EPA SW 8240A									8	40ml VOAx2/4 oz.	HCl/4° C/None
VOC/GCMS–Cap.	EPA SW 8260									8	40ml VOAx2/4 oz.	HCl/4° C/None
Semivol. Org./GCMS–Cap.	EPA SW 8270A									16	1Lx3/4 oz.	4° C/None
Polynuclear Aromatics (PAH's)	EPA SW 8310									9	1Lx3/4 oz.	4° C/None
PARAMETER by Group Name	**METHOD SOURCE**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**X**	**Bottle ID #'s**	**Billing Units**	**Containers Required**	**Preservative(s) Used**
Gasoline Analytical Group	EPA SW–846									47	Consult Lab	Consult Lab
Kerosene Analytical Group	EPA SW–846									39	Consult Lab	Consult Lab
Mixed Product Analytical Group	EPA SW–846									24	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	EPA 418.1									2	Consult Lab	Consult Lab
Total Petroleum Hydrocarbons	FL–PRO									7	Consult Lab	Consult Lab
RCRA Metals (8)	EPA Various									6	Consult Lab	Consult Lab
TCLP Metals (8) w/extraction	EPA SW–846									10	Consult Lab	Consult Lab
Lead (Pb) only	EPA 239.2	X	1-1	X	1-1	X	1-1			1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

...inquished by: PKeane
Date/Time: 4/10/97 2005

Received by: PKeane
Date/Time: 4/10/97 2005

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D-158

APPENDIX E

TIDAL FLUCTUATION DATA

MEMORANDUM

March 27, 1997

From: Phil Keane (Code 923)
To: Greg Campbell (Code 911.4)

Subj: MONITORING WELL LOW/HIGH TIDAL ELEVATIONS

1. The attached tidal elevations were taken at Site #21, NAS Pensacola, FL on 26 Mar 97.

2. If you need any more information, please call me at 2-3642/ 4758.

PHIL KEANE

D-160

Water Level Readings Taken on 3/26/97
For Tidal Evaluation

NAS PENSACOLA, FL
MONITORING WELL SITE #21

JO# 1305002

High Tides : 1157 : ___
Low Tides : ___ : ___

TIME	WELL I.D. NUMBER								
	# 21	# 22	# 23	# 5	# 12	# 13	# 6	# 14	# 17
0957	7.01	7.08	6.72	6.34	6.45	6.18	5.31	5.77	5.87
1017	7.02	7.09	6.73	6.35	6.45	6.18	5.32	5.77	5.88
1037	7.02	7.09	6.73	6.35	6.45	6.18	5.32	5.77	5.88
1057	7.02	7.09	6.74	6.35	6.46	6.19	5.32	5.78	5.88
1117	7.02	7.09	6.74	6.35	6.46	6.19	5.32	5.78	5.88
1137	7.03	7.10	6.75	6.36	6.46	6.19	5.32	5.78	5.89
H 1157	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1217	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1237	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1257	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1317	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1337	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89
1357	7.03	7.10	6.75	6.36	6.46	6.20	5.33	5.79	5.89

* Data suspect, not included in maximum variance.

Water Level Readings Taken on 3/26/97
For Tidal Evaluation

NAS PENSACOLA, FL
MONITORING WELL SITE #21

SO# 1305002

High Tide 1157
Low Tides

	WELL I.D. NUMBER								
TIME	#4								
0957	5.61								
1017	5.61								
1037	5.61								
1057	5.62								
1117	5.62								
1137	5.62								
H/ 1157	5.62								
1217	5.62								
1237	5.62								
1257	5.62								
1317	5.62								
1337	5.62								
1357	5.62								

* Data suspect, not included in maximum variance.

Water Level Readings Taken on 3/26/97
For Tidal Evaluation

1 of 2

NAS PENSACOLA FL
MONITORING WELL SITE #21

SO# 1305002

High Tides
Low Tides 2130

TIME	WELL I.D. NUMBER								
	# 21	# 22	# 23	# 5	# 13	# 12	# 6	# 14	# 17
1930	7.01	7.08	6.73	6.36	6.19	6.44	5.34	5.78	5.88
1950	7.01	7.08	6.73	6.36	6.19	6.44	5.33	5.78	5.88
2010	7.01	7.08	6.73	6.35	6.19	6.44	5.33	5.78	5.88
2030	7.01	7.08	6.73	6.35	6.19	6.44	5.33	5.78	5.88
2050	7.01	7.08	6.73	6.35	6.18	6.44	5.33	5.78	5.88
2110	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
4 2130	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2150	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2210	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2230	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2250	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2310	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88
2330	7.01	7.08	6.73	6.34	6.18	6.44	5.33	5.78	5.88

* Data suspect, not included in maximum variance.

2 of 2

Water Level Readings Taken on 3/26/97
For Tidal Evaluation

NAS Pensacola, Fl
Monitoring Well Site #21

JO # 1305002

High Tides
Low Tides : 2130 : ___

TIME	WELL I.D. NUMBER #4								
1930	5.61								
1950	5.61								
2010	5.61								
2030	5.61								
2050	5.61								
2110	5.61								
4 2130	5.61								
2150	5.61								
2210	5.61								
2230	5.61								
2250	5.61								
2310	5.61								
2330	5.61								

* Data suspect, not included in maximum variance.