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CONTAMINATION ASSESSMENT REPORT ADDENDUM FOR SITE 1107 OUTLYING LANDING FIELD BRONSON NAS PENSACOLA FL

11/01/1998

NAVY PUBLIC WORKS CENTER

CONTAMINATION ASSESSMENT REPORT ADDENDUM

U.S. NAVY OUTLYING LANDING FIELD (OLF) BRONSON
SITE 1107
PENSACOLA, FLORIDA

PREPARED BY:

NAVY PUBLIC WORKS CENTER
NAS ENVIRONMENTAL, BLDG 1754
PENSACOLA, FLORIDA 32508-6500

AUTHOR:
GREGORY ALLEN CAMPBELL, P. E.

NOVEMBER 1998

PREPARED FOR:

SOUTHERN DIVISION NAVAL FACILITIES
ENGINEERING COMMAND
2155 EAGLE DR. P.O. BOX 190010
NORTH CHARLESTON, SOUTH CAROLINA 29418

BYAS GLOVER, CODE 18410, ENGINEER-IN-CHARGE

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U.S. NAVY OUTLYING LANDING FIELD (OLF) BRONSON
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PROFESSIONAL REVIEW CERTIFICATION

The Contamination Assessment Report Addendum 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 Addendum was developed for the U.S. Navy Outlying Landing Field (OLF) Bronson, Site 1107, Pensacola, Florida, and should not be construed to apply to any other site.

Gregory Allen Campbell

Gregory Allen Campbell
Professional Engineer
P.E. No. 38572

12/3/98

Date

DEPARTMENT OF THE NAVY
NAVY PUBLIC WORKS CENTER
310 JOHN TOWER ROAD
PENSACOLA, FLORIDA 32508-5303

IN REPLY REFER TO
5090
Ser 00500/0077
2 DEC 98

Mr. John Mitchell, Remedial Project Manager
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: CONTAMINATION ASSESSMENT REPORT ADDENDUM (CARA), U.S. NAVY OUTLYING FIELD (OLF) BRONSON, SITE 1107, PENSACOLA, FLORIDA

Dear Mr. Mitchell:

This letter is in reference to your July 7, 1997, letter addressing comments to the Contamination Assessment Report (CAR) and Monitoring Only Plan (MOP) dated June 1997, for the U.S. Navy Outlying Field (OLF), Bronson, Site 1107, Pensacola, Florida. Per your request, this CAR Addendum is in response to your comments as summarized below:

COMMENT 1: Further soil assessment is necessary in the vicinity of MW-11 and MW-12. Soil borings should be placed in order to determine the lateral and vertical extent of contaminated soil. Soil samples should be analyzed with OVA. In areas with the highest OVA readings, soil samples should be taken and analyzed for VOA, PAHs and TPH in order to correlate OVA readings with actual contaminant concentration.

RESPONSE: Soil borings were placed at Site 1107 in the vicinity of monitoring well MW-11 (SB-1 thru SB-6) and MW-12 (SB-7 thru SB-12) to determine the lateral and vertical extent of contaminated soil. Appendix A, Figure 1, is a location map of soil borings SB-1 thru SB-12. Table I, in Appendix B, is a summary of the OVA readings obtained from SB-1 thru SB-12. Additional soil samples were collected from SB-5 @ 7', SB-6 @ 4' and SB-12 @ 13' and analyzed for VOA, PAHs and TPH in order to correlate OVA readings with actual contaminant concentration. Table II, in Appendix B, is a summary of the contamination levels of VOAs, PAHs, & TPHs detected in soil borings collected from soil borings SB-5, SB-6 and SB-12. The analytical laboratory results of the soil samples are found in Appendix C.

None of the soil samples collected from the 12 soil borings in the vicinity of monitoring well MW-11 (SB-1 thru SB-6) and MW-12 (SB-7 thru SB-12) exceeded the 50 ppm level for soil considered to be excessively contaminated from diesel contamination. Contamination levels of VOAs, PAHs and TPHs were below detection limits in soil samples collected and analyzed from SB-5 @ 7', SB-6 @ 4' and SB-12 @ 13'. In

comparison, the volatile organic vapor concentrations detected in the soil samples collected from SB-5 at 7', SB-6 at 4' and SB-12 at 13' using an organic vapor analyzer (OVA) were 10 ppm, 7.6 ppm and 0.4 ppm, respectively.

In summary, the OVA detected slight concentrations of volatile organic vapors whereas the analytical results did not detect volatile organic vapors in the soil columns analyzed.

COMMENT 2: A monitoring well should be placed approximately 20-30 feet downgradient of MW-11 to determine if soil contamination has impacted groundwater.

RESPONSE: Monitoring well MW-16 was installed at Site 1107 on May 1, 1998. Monitoring well MW-16 was placed 20' downgradient of monitoring well MW-11. A Monitoring Well Location Map for Site 1107 showing the location of all monitoring wells currently at the site is included in Appendix D (Figure 2). The lithological log and construction diagram of monitoring well MW-16 are included in Appendix E.

Soil samples were collected at 2', 5', 8', 11', 14' and 17' below land surface from monitoring well MW-16 on May 1, 1998, during construction of the well and analyzed for volatile organic vapor concentrations. None of the soil samples collected and analyzed for VOCs from monitoring well MW-16 exceeded 50 ppm considered to be excessively contaminated by diesel. Appendix B, Table I, shows the results of the OVA headspace analysis for soil borings collected from monitoring well MW-16 during construction.

Groundwater samples were collected from monitoring well MW-16 and analyzed for EDBs, VOAs, PAHs, TPHs and Lead on August 26, 1998. Groundwater samples collected and analyzed from monitoring well MW-16 indicated contamination levels of EDBs, VOAs, PAHs, TPHs and Lead were below detection limits (BDL). A summary of the analytical laboratory results of the groundwater samples is found in Appendix F, Table III. The analytical laboratory results of the groundwater samples are found in Appendix C.

In summary, it appears the soil contamination has not impacted the groundwater table downgradient from monitoring well MW-11.

COMMENT 3: Because groundwater analytical data for the site is greater than one year old, MW-1, MW-3, MW-4, MW-6, MW-8 and MW-10 should be resampled and analyzed for PAHs and TPH in order to collect current information with which to evaluate the MOP and to demonstrate that contaminant concentrations are decreasing at the site. MW-4 should also be analyzed for VOAs.

RESPONSE: Navy Public Works Center (NPWC) Laboratory personnel attempted to collect groundwater samples for PAH and TPH analysis from monitoring wells MW-1, MW-3, MW-4, MW-6, MW-8 and MW-10 on August 26, 1998. NPWC personnel were unable to collect groundwater samples from monitoring wells MW-1, MW-4 and MW-6 because the monitoring wells contained bunker C oil. The thickness of bunker C oil in the monitoring wells could not be determined using a conventional oil/water interface probe due to the extreme thickness of the bunker C oil (i.e., oil coats the probe and stays on the probe upon entering the water). Groundwater samples were collected from monitoring wells MW-3, MW-8 and MW-10 and analyzed for PAHs and TPHs. Summary tables of the analytical results for (1) PAHs and (2) TPHs, EDBs and Lead are shown in Appendix G, Table IV and Table V, respectively. The summary tables show past and present analytical results of groundwater samples collected from monitoring wells MW-1, MW-3, MW-4, MW-6, MW-8, MW-10 and MW-16 to aid in comparing increases and decreases in contaminant concentrations. The analytical laboratory results of the groundwater samples are found in Appendix C. The black oil found in monitoring wells MW-1, MW-4 and MW-6 indicates contamination at the original source of contamination, monitoring well MW-4, has apparently migrated to monitoring wells MW-1 and MW-6.

Groundwater samples collected and analyzed for VOAs from monitoring wells MW-1 thru MW-8 on March 11, 1996, and from MW-9 thru DMW-15 on June 3, 1996, indicated MW-4 was the only monitoring well which exceeded Florida Department of Environmental Protection (FDEP) groundwater cleanup target levels. Groundwater analyses of monitoring well MW-4 detected contamination levels of benzene (2 ppb) and xylenes (total) (41 ppb) which exceeded the FDEP groundwater cleanup target levels of 1 ppb and 20 ppb, respectively. On the second sampling event of August 26, 1998, groundwater could not be collected and analyzed for VOAs from monitoring well MW-4 because MW-4 contained bunker C oil.

Groundwater samples collected and analyzed for PAHs from monitoring wells MW-1 thru MW-8 on March 11, 1996, and from MW-9 thru DMW-15 on June 3, 1996, indicated MW-4 was the only monitoring well which exceeded FDEP groundwater cleanup target levels. Groundwater collected and analyzed for PAHs from monitoring well MW-4 detected contamination levels of naphthalene of 55 ppb which exceeded the current FDEP groundwater cleanup target levels of 20 ppb. Naphthalene levels of 55 ppb detected in monitoring well MW-4, by EPA Method 8270A, were detected below the methods' detection limit of 70 ppb; therefore, it was an estimated value. On the sampling event of August 26, 1998, groundwater could not be collected and analyzed for PAHs from monitoring wells MW-1, MW-4, MW-6, because the wells contained bunker C oil. However, groundwater was collected and analyzed for PAHs from monitoring wells MW-3, MW-8, MW-10 and MW-16 on August 26, 1998. Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were detected in the groundwater sample

collected from monitoring well MW-3 at concentrations of 4 ppb, 3 ppb and 5 ppb, respectively. Naphthalene, 1-methylnaphthalene and 2-methylnaphthalene were detected in the groundwater sample collected from monitoring well MW-8 at concentrations of 2 ppb, 7 ppb and 5 ppb, respectively. No PAHs were detected in monitoring wells MW-10 and MW-16. Individual PAHs detected in MW-3 and MW-8 were below the FDEP groundwater cleanup target levels for those individual PAHs.

Groundwater samples collected and analyzed for TPH and EDB from monitoring wells MW-1 thru MW-8 on March 11, 1996, from MW-9 thru DMW-15 on June 3, 1996; and for Lead from monitoring wells MW-1 thru DMW-15 on April 23 & April 24, 1997, detected contamination levels below the FDEP groundwater cleanup target levels for TPH, Lead, EDB of 5 ppm, 15 ppb and 0.2 ppb, respectively. On the sampling event of August 26, 1998, groundwater samples could not be collected and analyzed for TPH, EDB, or Lead from monitoring wells MW-1, MW-4, MW-6, because the wells contained bunker C oil. However, groundwater was collected and analyzed for TPHs from monitoring wells MW-3, MW-8 and MW-10 on August 26, 1998; and for TPHs, EDBs and Lead from MW-16 on August 26, 1998. No EDB, TPH or Lead was detected in the groundwater sample collected from monitoring well MW-16. No TPH was detected in the groundwater samples collected from monitoring wells MW-3, MW-8 or MW-10.

In summary, a comparison of the August 26, 1998, sampling event to previous sampling events at Site 1107 concludes the following: (1) Contamination levels of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene in monitoring wells MW-3 and MW-8 increased slightly from levels reported in the March 11, 1996, sampling event. However, TPH detected in monitoring wells MW-3 and MW-8 was less than TPH levels detected in the March 11, 1996, sampling event. (2) Contamination levels of PAHs (BDL) and TPHs (BDL) in monitoring well MW-10 remained the same as was reported in the June 3, 1996, sampling event. (3) Contamination levels of VOAs, PAHs, TPHs, EDBs and Lead in the new monitoring well constructed at Site 1107 on May 1, 1998, were below detection limits.

COMMENT 4: A sketch of the site should be provided showing the location of the former underground storage tanks and the limits of the soil excavation during tank removal with respect to the monitoring wells and soil borings that have been installed.

RESPONSE: A Site Location Map of Site 1107 is included in Appendix H, Figure 3. The Site Location Map shows the approximate location of the five former underground tanks with respect to the monitoring wells and soil borings that have been installed at the site. PWC personnel reported that during removal of the five USTs at Site 1107 contaminated soil was removed down to the groundwater (approximately 18 feet BLS) and 1000 CY of contaminated soil was removed from the excavation. The approximate excavation limits are shown in Appendix H, Figure 3.

Based upon the findings of the CAR addendum, PWC recommends that a Remedial Action Plan be prepared for the U.S. Navy Outlying Field (OLF), Bronson, Site 1107, located at Pensacola, Florida. In addition, PWC recommends bailing (if possible) the free product from monitoring wells MW-1, MW-4 and MW-6.

If you have any questions concerning this CAR addendum please contact Mr. Greg Campbell at (850) 452-4611, Ext. 113.

Sincerely,

DAVID COLON
ENS, CEC, USNR
By direction of
the Commanding Officer

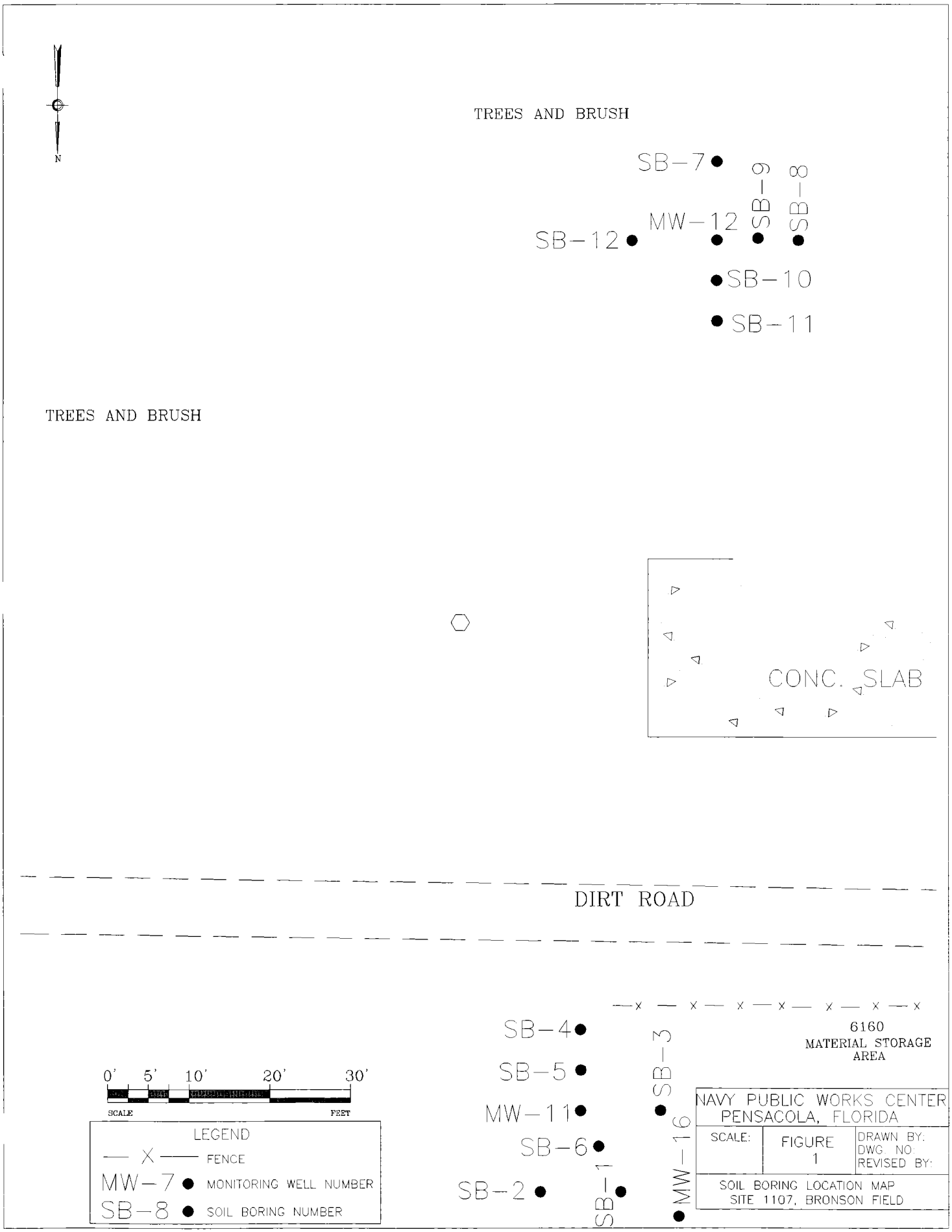
Enclosure: (2 copies)
Contamination Assessment Report Addendum (CARA)
U.S. Navy Outlying Field (OLF) Bronson
Site 1107, Pensacola, Florida

Copy to:
CO, SOUTHDIV
(Code 18410, Byas Glover)
NAS Envir. Dept. (Dean Spencer,
Code 00500)

APPENDIX

APPENDIX A

FIGURE 1: Location Map of Soil Borings SB-1 thru SB-12


N
TREES AND BRUSH
SB-7
SB-9
SB-8
MW-12
SB-12
SB-10
SB-11
TREES AND BRUSH
CONC. SLAB
DIRT ROAD
6160
MATERIAL STORAGE
AREA
SB-4
SB-5
MW-11
SB-6
SB-2
SB-1
SB-3
MW-16
0' 5' 10' 20' 30'
SCALE
FEET
LEGEND
FENCE
MW-7 MONITORING WELL NUMBER
SB-8 SOIL BORING NUMBER
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
FIGURE
1
DRAWN BY:
DWG. NO:
REVISED BY:
SOIL BORING LOCATION MAP
SITE 1107, BRONSON FIELD

APPENDIX B

TABLE I: Volatile Organic Vapor Concentration in Soil MW-16 and SB-1 thru SB-12

TABLE II: Summary of VOAs, PAHs, and TPHs Analytical Results for Soil Samples Collected in Vicinity of MW-11 and MW-12

TABLE I

VOLATILE ORGANIC VAPOR CONCENTRATION IN SOIL (OVA HEADSPACE ANALYSIS) FOR MW-16 AND SOIL BORINGS SB-1 THRU SB-12 PERFORMED MAY 1 & 2, 1998 AT U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1107

Boring Designation	Depth (Feet BLS)	VOCs Concentration (ppm)[1]
MW-16	2	8.9
	5	0.5
	8	0.2
	11	0.3
	14	0
	17	0
SB-1	1	1.4
	4	0.9
	7	2.0
	10	1.2
	13	0.9
	15	0.5
SB-2	1	0.2
	4	0.2
	7	2.6
	10	3.2
	13	0.8
	15	0.4
SB-3	1	1.8
	4	2.0
	7	1.6
	10	1.3
	13	0.4
	15	1.0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = Not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE I (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-4	1	0.2
	4	0.3
	7	0.2
	10	0.3
	13	0
	15	0
SB-5	1	1.0
	4	4.0
	7	10.0
	10	5.1
	13	2.4
	15	3.4
SB-6	1	6.6
	4	7.6
	7	2.0
	10	0.4
	13	0.4
	15	0.4
SB-7	1	0.2
	4	0.2
	7	0
	10	0
	13	0
	15	0
SB-8	1	0.2
	4	0
	7	0
	10	0.2
	13	0.2
	15	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = Not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE I (Cont.)		
Boring Designation	**Depth (Feet BLS)**	**VOCs Concentration (ppm)[1]**
SB-9	1	0
	4	0
	7	0
	10	0
	13	0
	15	0
SB-10	1	0
	4	0
	7	0
	10	0.2
	13	0.6
	15	0.6
SB-11	1	0
	4	0
	7	0
	10	0.2
	13	0
	15	0
SB-12	1	0
	4	0.2
	7	0
	10	0
	13	0.4
	15	0

[1] VOCs concentration assessed by organic vapor analyzer headspace techniques. Results are total VOCs less methane.

Notes: BLS = below land surface
NS = Not sampled
ppm = parts per million
Soil samples analyzed and VOC results reported by NPWC, Pensacola, FL

TABLE II
SUMMARY OF VOAs, PAHs, & TPHs
ANALYTICAL RESULTS FOR SOIL SAMPLES
COLLECTED IN VICINITY OF MONITORING WELL MW-11 & MW-12
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1107

PARAMETER	SOIL SAMPLE NUMBER AND DEPTH		
	SB-5 @ 7'	SB-6 @ 4'	SB-12 @ 13'
VOAs	BDL	BDL	BDL
PAHs	BDL	BDL	BDL
TPHs	BDL	BDL	BDL

NOTES: BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
Soil samples collected on May 2, 1998

APPENDIX C

Soil and Groundwater Analytical Results

Navy Public Works Center

Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Total Volatiles by Method 8260

Lab Report Number: 81698
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81698			
Sample Name / Location	Site 1107 S.B. 5, 7'			
Collector's Name	P. Vinson			
Date & Time Collected	2 May 98 @ 1735			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	19 May 98 MC			
Date of Analysis	19 May 98			
Sample Matrix	Soil			
Dilution	X 1			
Compound Name	1- 81698	units	Det. Limit	Flags
Benzene	BDL	ug/Kg	1	
Bromobenzene	BDL	ug/Kg	2	
Bromochloromethane	BDL	ug/Kg	2	
Bromodichloromethane	BDL	ug/Kg	1	
Bromoform	BDL	ug/Kg	2	
Bromomethane	BDL	ug/Kg	4	
n-Butylbenzene	BDL	ug/Kg	3	
sec-Butylbenzene	BDL	ug/Kg	3	
tert-Butylbenzene	BDL	ug/Kg	3	
Carbon Tetrachloride	BDL	ug/Kg	1	
Chlorobenzene	BDL	ug/Kg	2	
Chloroethane	BDL	ug/Kg	4	
Chloroform	BDL	ug/Kg	1	
Chloromethane	BDL	ug/Kg	1	
2-Chlorotoluene *	BDL	ug/Kg	2	
4-Chlorotoluene *	BDL	ug/Kg	2	
Dibromochloromethane	BDL	ug/Kg	2	
1,2-Dibromo-3-chloropropane *	BDL	ug/Kg	4	
1,2-Dibromoethane	BDL	ug/Kg	2	
Dibromomethane	BDL	ug/Kg	2	
1,2-Dichlorobenzene	BDL	ug/Kg	3	
1,3-Dichlorobenzene	BDL	ug/Kg	3	
1,4-Dichlorobenzene	BDL	ug/Kg	3	
Dichlorodifluoromethane	BDL	ug/Kg	2	
1,1-Dichloroethane	BDL	ug/Kg	1	
1,2-Dichloroethane	BDL	ug/Kg	1	
1,1-Dichloroethene	BDL	ug/Kg	2	
cis-1,2-Dichloroethene	BDL	ug/Kg	2	
trans-1,2-Dichloroethene	BDL	ug/Kg	1	
1,2-Dichloropropane	BDL	ug/Kg	2	
1,3-Dichloropropane	BDL	ug/Kg	2	
2,2-Dichloropropane	BDL	ug/Kg	1	
1,1-Dichloropropene	BDL	ug/Kg	2	
Ethylbenzene	BDL	ug/Kg	2	
Ethyl ether *	BDL	ug/Kg	2	
Hexachlorobutadiene	BDL	ug/Kg	5	
2-Hexanone *	BDL	ug/Kg	2	
Isopropylbenzene	BDL	ug/Kg	2	
p-Isopropyltoluene	BDL	ug/Kg	3	

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
Total Volatiles by Method 8260

Lab Report Number: 81698
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

Compound Name	1- 81698	units	Det. Limit	Flags
Methylene Chloride	BDL	ug/Kg	1	
Methyl ethyl ketone (MEK) *	BDL	ug/Kg	4	
Methyl isobutyl ketone (MIBK) *	BDL	ug/Kg	3	
Methyl-tert-butyl ether (MTBE)	BDL	ug/Kg	2	
Naphthalene	BDL	ug/Kg	4	
n-Propylbenzene	BDL	ug/Kg	2	
Styrene	BDL	ug/Kg	2	
1,1,1,2-Tetrachloroethane	BDL	ug/Kg	2	
1,1,2,2-Tetrachloroethane	BDL	ug/Kg	3	
Tetrachloroethene	BDL	ug/Kg	2	
Toluene	BDL	ug/Kg	4	
1,2,3-Trichlorobenzene	BDL	ug/Kg	4	
1,2,4-Trichlorobenzene	BDL	ug/Kg	2	
1,1,1-Trichloroethane	BDL	ug/Kg	1	
1,1,2-Trichloroethane	BDL	ug/Kg	2	
Trichloroethene	BDL	ug/Kg	2	
Trichlorofluoromethane	BDL	ug/Kg	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane *	BDL	ug/Kg	1	
1,2,3-Trichloropropane	BDL	ug/Kg	3	
1,2,4-Trimethylbenzene	BDL	ug/Kg	3	
1,3,5-Trimethylbenzene	BDL	ug/Kg	3	
Vinyl Chloride	BDL	ug/Kg	1	
m,p-Xylene	BDL	ug/Kg	4	
o-Xylene	BDL	ug/Kg	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-120	105
Toluene-d8	81-117	106
Bromofluorobenzene	74-121	96

Explanation of Flags:

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: 5/27/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Analytical Report
610 PAH's by Method 8270

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola,FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 81698
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81698			
Sample Name / Location	Site 1107 SB5 (7')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1735			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	14 May 98 JJ			
Date of Analysis	1 Jun 98			
Sample Matrix	Soil			
Dilution	X 1			
Compound Name	1- 81698	units	Det. Limit	Flags
Acenaphthene	BDL	ug/Kg	160	
Acenaphthylene	BDL	ug/Kg	190	
Anthracene	BDL	ug/Kg	170	
Benzo(a)anthracene	BDL	ug/Kg	160	
Benzo(a)pyrene	BDL	ug/Kg	180	
Benzo(b)fluoranthene	BDL	ug/Kg	160	
Benzo(g,h,i)perylene	BDL	ug/Kg	180	
Benzo(k)fluoranthene	BDL	ug/Kg	210	
Chrysene	BDL	ug/Kg	170	
Dibenz(a,h)anthracene	BDL	ug/Kg	170	
Fluoranthene	BDL	ug/Kg	180	
Fluorene	BDL	ug/Kg	160	
Indeno(1,2,3-cd)pyrene	BDL	ug/Kg	180	
1-Methylnaphthalene *	BDL	ug/Kg	200	
2-Methylnaphthalene	BDL	ug/Kg	220	
Naphthalene	BDL	ug/Kg	160	
Phenanthrene	BDL	ug/Kg	180	
Pyrene	BDL	ug/Kg	200	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	23-120	88
2-Fluorobiphenyl	30-115	97
Terphenyl -d14	18-137	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

Date: 6/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

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Analytical Report
Petroleum Range Organics by FLPRO

Client:	NPWC Engineering
Address:	Bldg. 458, Code 400 NAS Pensacola,FL 32508
Phone #:	452-4315
Contact:	Greg Campbell

Lab Report Number:	81698
Sample Date:	2 May 98
Received Date:	5 May 98
Sample Site:	Bronson Field
Job Order No.:	130 5001

LAB Sample ID#	1- 81698			
Sample Name / Location	Site 1107 SB5 (7')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1735			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	14 May 98 JJ			
Date of Analysis	15 Jun 98			
Sample Matrix	Soil			
Dilution	x 1			
Parameter	1- 81698	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	5.0	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142	81
Nonatriacontane (C-39)	42-193	65

COMMENTS :

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/18/98

End of Report

Navy Public Works Center

Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Total Volatiles by Method 8260

Lab Report Number: 81699
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81699			
Sample Name / Location	Site 1107 S.B. 6, 4'			
Collector's Name	P. Vinson			
Date & Time Collected	2 May 98 @ 1750			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	19 May 98 MC			
Date of Analysis	19 May 98			
Sample Matrix	Soil			
Dilution	X 1			
Compound Name	1- 81699	units	Det. Limit	Flags
Benzene	BDL	ug/Kg	1	
Bromobenzene	BDL	ug/Kg	2	
Bromochloromethane	BDL	ug/Kg	2	
Bromodichloromethane	BDL	ug/Kg	1	
Bromoform	BDL	ug/Kg	2	
Bromomethane	BDL	ug/Kg	4	
n-Butylbenzene	BDL	ug/Kg	3	
sec-Butylbenzene	BDL	ug/Kg	3	
tert-Butylbenzene	BDL	ug/Kg	3	
Carbon Tetrachloride	BDL	ug/Kg	1	
Chlorobenzene	BDL	ug/Kg	2	
Chloroethane	BDL	ug/Kg	4	
Chloroform	BDL	ug/Kg	1	
Chloromethane	BDL	ug/Kg	1	
2-Chlorotoluene *	BDL	ug/Kg	2	
4-Chlorotoluene *	BDL	ug/Kg	2	
Dibromochloromethane	BDL	ug/Kg	2	
1,2-Dibromo-3-chloropropane *	BDL	ug/Kg	4	
1,2-Dibromoethane	BDL	ug/Kg	2	
Dibromomethane	BDL	ug/Kg	2	
1,2-Dichlorobenzene	BDL	ug/Kg	3	
1,3-Dichlorobenzene	BDL	ug/Kg	3	
1,4-Dichlorobenzene	BDL	ug/Kg	3	
Dichlorodifluoromethane	BDL	ug/Kg	2	
1,1-Dichloroethane	BDL	ug/Kg	1	
1,2-Dichloroethane	BDL	ug/Kg	1	
1,1-Dichloroethene	BDL	ug/Kg	2	
cis-1,2-Dichloroethene	BDL	ug/Kg	2	
trans-1,2-Dichloroethene	BDL	ug/Kg	1	
1,2-Dichloropropane	BDL	ug/Kg	2	
1,3-Dichloropropane	BDL	ug/Kg	2	
2,2-Dichloropropane	BDL	ug/Kg	1	
1,1-Dichloropropene	BDL	ug/Kg	2	
Ethylbenzene	BDL	ug/Kg	2	
Ethyl ether *	BDL	ug/Kg	2	
Hexachlorobutadiene	BDL	ug/Kg	5	
2-Hexanone *	BDL	ug/Kg	2	
Isopropylbenzene	BDL	ug/Kg	2	
p-Isopropyltoluene	BDL	ug/Kg	3	

Navy Public Works Center
Environmental Laboratory

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FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
Total Volatiles by Method 8260

Lab Report Number: 81699
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

Compound Name	1- 81699	units	Det. Limit	Flags
Methylene Chloride	BDL	ug/Kg	1	
Methyl ethyl ketone (MEK) *	BDL	ug/Kg	4	
Methyl isobutyl ketone (MIBK) *	BDL	ug/Kg	3	
Methyl-tert-butyl ether (MTBE)	BDL	ug/Kg	2	
Naphthalene	BDL	ug/Kg	4	
n-Propylbenzene	BDL	ug/Kg	2	
Styrene	BDL	ug/Kg	2	
1,1,1,2-Tetrachloroethane	BDL	ug/Kg	2	
1,1,2,2-Tetrachloroethane	BDL	ug/Kg	3	
Tetrachloroethene	BDL	ug/Kg	2	
Toluene	BDL	ug/Kg	4	
1,2,3-Trichlorobenzene	BDL	ug/Kg	4	
1,2,4-Trichlorobenzene	BDL	ug/Kg	2	
1,1,1-Trichloroethane	BDL	ug/Kg	1	
1,1,2-Trichloroethane	BDL	ug/Kg	2	
Trichloroethene	BDL	ug/Kg	2	
Trichlorofluoromethane	BDL	ug/Kg	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane *	BDL	ug/Kg	1	
1,2,3-Trichloropropane	BDL	ug/Kg	3	
1,2,4-Trimethylbenzene	BDL	ug/Kg	3	
1,3,5-Trimethylbenzene	BDL	ug/Kg	3	
Vinyl Chloride	BDL	ug/Kg	1	
m,p-Xylene	BDL	ug/Kg	4	
o-Xylene	BDL	ug/Kg	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-120	107
Toluene-d8	81-117	106
Bromofluorobenzene	74-121	94

Explanation of Flags:

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: 5/27/98
Report Generated

End of Report

Navy Public Works Center

Environmental Laboratory

Analytical Report

610 PAH's by Method 8270

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola,FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 81699
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81699			
Sample Name / Location	Site 1107 SB6 (4')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1750			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	14 May 98 JJ			
Date of Analysis	1 Jun 98			
Sample Matrix	Soil			
Dilution	X 1			
Compound Name	1- 81699	units	Det. Limit	Flags
Acenaphthene	BDL	ug/Kg	160	
Acenaphthylene	BDL	ug/Kg	190	
Anthracene	BDL	ug/Kg	170	
Benzo(a)anthracene	BDL	ug/Kg	160	
Benzo(a)pyrene	BDL	ug/Kg	180	
Benzo(b)fluoranthene	BDL	ug/Kg	160	
Benzo(g,h,i)perylene	BDL	ug/Kg	180	
Benzo(k)fluoranthene	BDL	ug/Kg	210	
Chrysene	BDL	ug/Kg	170	
Dibenz(a,h)anthracene	BDL	ug/Kg	170	
Fluoranthene	BDL	ug/Kg	180	
Fluorene	BDL	ug/Kg	160	
Indeno(1,2,3-cd)pyrene	BDL	ug/Kg	180	
1-Methylnaphthalene *	BDL	ug/Kg	200	
2-Methylnaphthalene	BDL	ug/Kg	220	
Naphthalene	BDL	ug/Kg	160	
Phenanthrene	BDL	ug/Kg	180	
Pyrene	BDL	ug/Kg	200	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	23-120	90
2-Fluorobiphenyl	30-115	96
Terphenyl -d14	18-137	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: 6/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

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NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
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Analytical Report
Petroleum Range Organics by FLPRO

Client:	NPWC Engineering
Address:	Bldg. 458, Code 400 NAS Pensacola,FL 32508
Phone #:	452-4315
Contact:	Greg Campbell

Lab Report Number:	81699
Sample Date:	2 May 98
Received Date:	5 May 98
Sample Site:	Bronson Field
Job Order No.:	130 5001

LAB Sample ID#	1- 81699			
Sample Name / Location	Site 1107 SB6 (4')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1750			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	14 May 98 JJ			
Date of Analysis	15 Jun 98			
Sample Matrix	Soil			
Dilution	x 1			
Parameter	1- 81699	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	5.0	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142	91
Nonatriacontane (C-39)	42-193	51

COMMENTS :

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/18/98

End of Report

Navy Public Works Center

Environmental Laboratory

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FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Total Volatiles by Method 8260

Lab Report Number: 81700
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81700
Sample Name / Location	Site 1107 S.B. 12, 13'
Collector's Name	P. Vinson
Date & Time Collected	2 May 98 @ 1945
Sample Type (composite or grab)	Grab
Analyst	M., Chambers
Date of Extraction / Initials	19 May 98 MC
Date of Analysis	19 May 98
Sample Matrix	Soil
Dilution	X 1

Compound Name	1- 81700	units	Det. Limit	Flags
Benzene	BDL	ug/Kg	1	
Bromobenzene	BDL	ug/Kg	2	
Bromochloromethane	BDL	ug/Kg	2	
Bromodichloromethane	BDL	ug/Kg	1	
Bromoform	BDL	ug/Kg	2	
Bromomethane	BDL	ug/Kg	4	
n-Butylbenzene	BDL	ug/Kg	3	
sec-Butylbenzene	BDL	ug/Kg	3	
tert-Butylbenzene	BDL	ug/Kg	3	
Carbon Tetrachloride	BDL	ug/Kg	1	
Chlorobenzene	BDL	ug/Kg	2	
Chloroethane	BDL	ug/Kg	4	
Chloroform	BDL	ug/Kg	1	
Chloromethane	BDL	ug/Kg	1	
2-Chlorotoluene *	BDL	ug/Kg	2	
4-Chlorotoluene *	BDL	ug/Kg	2	
Dibromochloromethane	BDL	ug/Kg	2	
1,2-Dibromo-3-chloropropane *	BDL	ug/Kg	4	
1,2-Dibromoethane	BDL	ug/Kg	2	
Dibromomethane	BDL	ug/Kg	2	
1,2-Dichlorobenzene	BDL	ug/Kg	3	
1,3-Dichlorobenzene	BDL	ug/Kg	3	
1,4-Dichlorobenzene	BDL	ug/Kg	3	
Dichlorodifluoromethane	BDL	ug/Kg	2	
1,1-Dichloroethane	BDL	ug/Kg	1	
1,2-Dichloroethane	BDL	ug/Kg	1	
1,1-Dichloroethene	BDL	ug/Kg	2	
cis-1,2-Dichloroethene	BDL	ug/Kg	2	
trans-1,2-Dichloroethene	BDL	ug/Kg	1	
1,2-Dichloropropane	BDL	ug/Kg	2	
1,3-Dichloropropane	BDL	ug/Kg	2	
2,2-Dichloropropane	BDL	ug/Kg	1	
1,1-Dichloropropene	BDL	ug/Kg	2	
Ethylbenzene	BDL	ug/Kg	2	
Ethyl ether *	BDL	ug/Kg	2	
Hexachlorobutadiene	BDL	ug/Kg	5	
2-Hexanone *	BDL	ug/Kg	2	
Isopropylbenzene	BDL	ug/Kg	2	
p-Isopropyltoluene	BDL	ug/Kg	3	

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
Total Volatiles by Method 8260

Lab Report Number: 81700
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

Compound Name	1- 81700	units	Det. Limit	Flags
Methylene Chloride	BDL	ug/Kg	1	
Methyl ethyl ketone (MEK) *	BDL	ug/Kg	4	
Methyl isobutyl ketone (MIBK) *	BDL	ug/Kg	3	
Methyl-tert-butyl ether (MTBE)	BDL	ug/Kg	2	
Naphthalene	BDL	ug/Kg	4	
n-Propylbenzene	BDL	ug/Kg	2	
Styrene	BDL	ug/Kg	2	
1,1,1,2-Tetrachloroethane	BDL	ug/Kg	2	
1,1,2,2-Tetrachloroethane	BDL	ug/Kg	3	
Tetrachloroethene	BDL	ug/Kg	2	
Toluene	BDL	ug/Kg	4	
1,2,3-Trichlorobenzene	BDL	ug/Kg	4	
1,2,4-Trichlorobenzene	BDL	ug/Kg	2	
1,1,1-Trichloroethane	BDL	ug/Kg	1	
1,1,2-Trichloroethane	BDL	ug/Kg	2	
Trichloroethene	BDL	ug/Kg	2	
Trichlorofluoromethane	BDL	ug/Kg	2	
1,1,2-Trichloro-1,2,2-Trifluoroethane *	BDL	ug/Kg	1	
1,2,3-Trichloropropane	BDL	ug/Kg	3	
1,2,4-Trimethylbenzene	BDL	ug/Kg	3	
1,3,5-Trimethylbenzene	BDL	ug/Kg	3	
Vinyl Chloride	BDL	ug/Kg	1	
m,p-Xylene	BDL	ug/Kg	4	
o-Xylene	BDL	ug/Kg	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-120	104
Toluene-d8	81-117	102
Bromofluorobenzene	74-121	100

Explanation of Flags:

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: 5/27/98
Report Generated

End of Report

Navy Public Works Center

Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Analytical Report

610 PAH's by Method 8270

Client:	NPWC Engineering	Lab Report Number:	81700
Address:	Bldg. 458, Code 400 NAS Pensacola,FL 32508	Sample Date:	2 May 98
		Received Date:	5 May 98
Phone #:	452-4315	Sample Site:	Bronson Field
Contact:	Greg Campbell	Job Order No.:	130 5001

LAB Sample ID#	1- 81700			
Sample Name / Location	Site 1107 SB12 (13')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1945			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	14 May 98 JJ			
Date of Analysis	1 Jun 98			
Sample Matrix	Soil			
Dilution	X 1			
Compound Name	1- 81700	units	Det. Limit	Flags
Acenaphthene	BDL	ug/Kg	160	
Acenaphthylene	BDL	ug/Kg	190	
Anthracene	BDL	ug/Kg	170	
Benzo(a)anthracene	BDL	ug/Kg	160	
Benzo(a)pyrene	BDL	ug/Kg	180	
Benzo(b)fluoranthene	BDL	ug/Kg	160	
Benzo(g,h,i)perylene	BDL	ug/Kg	180	
Benzo(k)fluoranthene	BDL	ug/Kg	210	
Chrysene	BDL	ug/Kg	170	
Dibenz(a,h)anthracene	BDL	ug/Kg	170	
Fluoranthene	BDL	ug/Kg	180	
Fluorene	BDL	ug/Kg	160	
Indeno(1,2,3-cd)pyrene	BDL	ug/Kg	180	
1-Methylnaphthalene *	BDL	ug/Kg	200	
2-Methylnaphthalene	BDL	ug/Kg	220	
Naphthalene	BDL	ug/Kg	160	
Phenanthrene	BDL	ug/Kg	180	
Pyrene	BDL	ug/Kg	200	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	23-120	91
2-Fluorobiphenyl	30-115	97
Terphenyl -d14	18-137	97

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: 6/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola,FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 81700
Sample Date: 2 May 98
Received Date: 5 May 98
Sample Site: Bronson Field
Job Order No.: 130 5001

LAB Sample ID#	1- 81700			
Sample Name / Location	Site 1107 SB12 (13')			
Collector's Name	Pat Vinson			
Date & Time Collected	2 May 98 @ 1945			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	14 May 98 JJ			
Date of Analysis	15 Jun 98			
Sample Matrix	Soil			
Dilution	x 1			
Parameter	1- 81700	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	5.0	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142	81
Nonatriacontane (C-39)	42-193	79

COMMENTS :

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 6/18/98

End of Report

HAZARDOUS WASTE CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory
Bldg. 3887, Code 440
NAS Pensacola, Fl. 32508
Ph#: (850) 452-3180/3642
DSN: 922-3180/3642
FAX: (850) 452-2799/2387

Requester: Greg Campbell
Address: Eng. PWC Code 423.1
Phone #: 452-4315
Contact: Greg Campbell
Job Order #: 1305001

Report Required? Yes No DEP? Yes No
Lab ID Number:
Sample Date: 5-2-98
Received Date: 5-5-98
Sample Site: Brown Field
Lab Due Date:

Sample ID #	Lab	#1- 8-1698	#2- 8-1699	#3- 8-1700	#4-
Sample Name	----------	S.B 5	S.B 6	S.B. 12	
or Location	----------	7'	4'	13'	
Sampled by	----------	Pat Vinson	→	→	→
Collection	Date	5-2-98	→	→	
Date/Time	Time	1735	1750	1945	
Sample Matrix	----------	Soil	→	→	

Notes: Site 1107 Brown

GROUP PARAMETERS by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	FY97 Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
HW Charact. (complete)	EPA SW 846									56	See below	See below
Ignitability (Flashpoint)	SW 846 1010									2	250ml/4 oz.	4° C
Reactivity (Cyanide & Sulfide)	EPA SW-846									4	1L/4 oz.	4° C
Corrosivity (pH)	SW 846 9040/9045									0.5	250ml/4 oz.	4° C
Toxicity (TCLP) complete	EPA SW-846									50	See below	See below
Toxicity (TCLP) complete	EPA SW-846									50	See below	See below
TCLP Non Volatile Extraction	SW 846 1311									4	40 mbx3/4 oz.	4° C
TCLP Volatile ZHE Extraction	SW 846 1311									4	1Lx4/32 oz.	HCl to pH<2/4° C
TCLP BNA Extractables	SW 846 8270									16	1Lx3/4 oz.	4° C
TCLP Acid Extractables	SW 846 8270									9	1Lx3/4 oz.	4° C
TCLP B/N Extractables	SW 846 8270									9	1Lx3/4 oz.	4° C
TCLP Pesticides	SW 846 8080									9	1Lx3/4 oz.	4° C
TCLP Herbicides	SW 846 8150									9	1Lx3/4 oz.	4° C
TCLP Volatiles	SW 846 8260									8	40 ml x 3/4 oz.	HCl to pH<2/4° C
TCLP Metals (8)	EPA SW-846									6.5	500 ml/4 oz.	HNO_3 to pH<2
Multiphasic Samples	EPA SW-846									+50%	See above	See above
Complete Priority Pollutants	EPA SW-846									40	See below	See below
PP Acid Extractables	SW 846 8270									9	1Lx3/4 oz.	4° C
PP B/N Extractables	SW 846 8270									9	1Lx3/4 oz.	4° C
PP Pesticide/PCB's	SW 846 8080									9	1Lx3/4 oz.	4° C
PP Volatiles	SW 846 8260									8	40 ml x 3/4 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 SW-846									4	1L Plastic/1L Glass	NaOH/H_2SO_4
Toxicity (TCLP) less Pest/Herb	EPA SW-846									36	See below	See below
F001 - F005 Solvents	EPA SW-846									24	1Lx3&40mbx4/16 oz.	4° C
Kerosene Anal. Group (FL-PRO)	SW-846/FL DEP									24	Multiple	As Required
FL-P.R.O. TPH	FL DEP	✓		✓		✓				5	1Lx3/16 oz	H_2SO_4 to pH<2/4°C
Total Volatiles	SW 846 8260									8	40 mbx3/4 oz	HCl to pH<2/4° C
Total BNA Extractables	SW 846 8270									16	1Lx2/16 oz	4° C
Total RCRA Metals (8)	EPA SW-846									6.5	500 ml/4 oz	HNO_3 to pH<2
Single Metals	EPA SW-846									1	500 ml/4 oz	HNO_3 to pH<2
PCB's in Oil	SW 846 8080									3	40 ml/4 oz	None
PCB's in Water/Soil/Wipes	SW 846 8080									4	1L/4 oz	None
Other:	PAN	✓		✓		✓						
	VOA	✓		✓		✓						

Comments:

Relinquished by: Pat Vinson
Date/Time: 5/5/98 0922

Received by: B. Hagen Clayton
Date/Time: 5-5-98 0922

.123r24\forms\custody\hazwastelab1 rev 10/2/96

Navy Public Works Center

Environmental Laboratory

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Client: NPWC Engineering
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NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 83289
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83289			
Sample Name / Location	MW #3 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1045			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	31 Aug 98 JJ			
Date of Analysis	1 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 83289	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 *	3	ug/L	2	
2-Methylnaphthalene	5	ug/L	3	
Naphthalene	4	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	54
2-Fluorobiphenyl	43-116	65
Terphenyl -d14	33-141	69

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: 9/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

Bldg. 3887, Code 440
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Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 83289
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83289			
Sample Name / Location	MW #3 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1045			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	11 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 83289	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 *	103
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 = millgram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/98

End of Report

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Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 83290
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- **83290**
Sample Name / Location	Equipment Blank Bronson Site 1107
Collector's Name	PK/BH
Date & Time Collected	26 Aug 98 @ 1105
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	31 Aug 98 JJ
Date of Analysis	2 Sep 98
Sample Matrix	DI Water
Dilution	X 1

Compound Name	1- 83290	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	66
2-Fluorobiphenyl	43-116	85
Terphenyl -d14	33-141	104

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: 9/17/98
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Analytical Report

Petroleum Range Organics by FLPRO

Bldg. 3887, Code 440
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Address: Bldg. 458, Code 400
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Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 83290
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83290			
Sample Name / Location	Equipment Blank Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1105			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	11 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 83290	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 *	111
Nonatriacontane (C-39)	42-193 *	113

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 Deck, Laboratory Director

Date: 9/17/98

End of Report

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Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 83291
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- **83291**
Sample Name / Location	MW #8 Bronson Site 1107
Collector's Name	PK/BH
Date & Time Collected	26 Aug 98 @ 1115
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	31 Aug 98 JJ
Date of Analysis	2 Sep 98
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 83291	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 *	7	ug/L	2	
2-Methylnaphthalene	5	ug/L	3	
Naphthalene	2	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	59
2-Fluorobiphenyl	43-116	82
Terphenyl -d14	33-141	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

Date: 9/17/98
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Analytical Report
Petroleum Range Organics by FLPRO

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Address: Bldg. 458, Code 400
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Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 83291
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83291			
Sample Name / Location	MW #8 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1115			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	12 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 83291	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 *	109
Nonatriacontane (C-39)	42-193 *	95

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: 9/17/98

End of Report

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Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 83292
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83292			
Sample Name / Location	MW #10 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1225			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	31 Aug 98 JJ			
Date of Analysis	2 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	**1- 83292**	**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	80
Terphenyl -d14	33-141	95

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: 9/17/98
Report Generated

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Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

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FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 83292
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83292			
Sample Name / Location	MW #10 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1225			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	12 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 83292	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 *	70
Nonatriacontane (C-39)	42-193 *	99

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: 9/17/98

End of Report

Navy Public Works Center
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Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 83293
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- **83293**
Sample Name / Location	MW #16 Bronson Site 1107
Collector's Name	PK/BH
Date & Time Collected	26 Aug 98 @ 1245
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	9 Sep 98 MC
Date of Analysis	9 Sep 98
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 83293	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	104
Toluene-d8	86-119	101
Bromofluorobenzene	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 Deets, Laboratory Director

Date: 9/17/98
Report Generated
End of Report

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Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 83293
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83293			
Sample Name / Location	MW #16 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1245			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	31 Aug 98 JJ			
Date of Analysis	2 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 83293	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	78
2-Fluorobiphenyl	43-116	86
Terphenyl -d14	33-141	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: 9/17/98
Report Generated

End of Report

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Client: NPWC Engineering
Address: Bldg. 458, Code 400
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Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 83293
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83293			
Sample Name / Location	MW #16 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1245			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	8 Sep 98 JM			
Date of Analysis	8 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 83293	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: 9/17/98
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End of Report

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Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Petroleum Range Organics by FLPRO

Lab Report Number: 83293
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83293			
Sample Name / Location	MW #16 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1245			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	12 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 83293	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 *	107

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: 9/17/98

End of Report

Navy Public Works Center
Environmental Laboratory

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Analytical Report
Total Lead by Method 239.2

Client:	NPWC Engineering
Address:	Bldg. 458, Code 400 NAS Pensacola, FL 32508
Phone #:	452-4315
Contact:	Greg Campbell

Lab Report Number:	83293
Sample Date:	26 Aug 98
Received Date:	26 Aug 98
Sample Site:	Bronson Field Site 1107
Job Order No.:	130 6271

LAB Sample ID#	1- 83293			
Sample Name / Location	MW#16 Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ 1245			
Sample Type (composite or grab)	Grab			
Analyst	B. Nelson			
Date of Analysis	9 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Element Name	1- 83293	units	Det. Limit	Flags
Lead	BDL	mg/L	0.003	

COMMENTS :

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Deer, Laboratory Director

Date: 9/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
601/602 Volatiles by Method 8260

Lab Report Number: 83294
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83294			
Sample Name / Location	Duplicate Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ NS			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	9 Sep 98 MC			
Date of Analysis	9 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 83294	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	103
Toluene-d8	86-119	99
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: 9/17/98
Report Generated
End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
610 PAH's by Method 8270

Lab Report Number: 83294
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- **83294**
Sample Name / Location	Duplicate Bronson Site 1107
Collector's Name	PK/BH
Date & Time Collected	26 Aug 98 @ NS
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	31 Aug 98 JJ
Date of Analysis	2 Sep 98
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 83294	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	76
2-Fluorobiphenyl	43-116	84
Terphenyl -d14	33-141	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Deez, Laboratory Director

Date: 9/22/98
Report Generated

End of Report

Navy Public Works Center

Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 83294
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83294			
Sample Name / Location	Duplicate Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ NS			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of Extraction / Initials	8 Sep 98 JM			
Date of Analysis	8 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 83294	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/98
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Analytical Report
Petroleum Range Organics by FLPRO

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Lab Report Number: 83294
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83294			
Sample Name / Location	Duplicate Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ NS			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	28 Aug 98 JJ			
Date of Analysis	12 Sep 98			
Sample Matrix	GW			
Dilution	x 1			
Parameter	**1- 83294**	**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 *	93
Nonatriacontane (C-39)	42-193 *	111

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: 9/17/98

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 440
NAS Pensacola, FL 32508
Phone (850) 452-3180/3642
DSN 922-3180/3642
FAX (850) 452-2799/2387

Client: NPWC Engineering
Address: Bldg. 458, Code 400
NAS Pensacola, FL 32508
Phone #: 452-4315
Contact: Greg Campbell

Analytical Report
Total Lead by Method 239.2

Lab Report Number: 83294
Sample Date: 26 Aug 98
Received Date: 26 Aug 98
Sample Site: Bronson Field Site 1107
Job Order No.: 130 6271

LAB Sample ID#	1- 83294			
Sample Name / Location	Duplicate Bronson Site 1107			
Collector's Name	PK/BH			
Date & Time Collected	26 Aug 98 @ NS			
Sample Type (composite or grab)	Grab			
Analyst	B. Nelson			
Date of Analysis	9 Sep 98			
Sample Matrix	GW			
Dilution	X 1			
Element Name	1- 83294	units	Det. Limit	Flags
Lead	BDL	mg/L	0.003	

COMMENTS :

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 9/17/98
Report Generated

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

Report Required? Yes No QC Required? Yes No

Requester: NPWC ENGINEERING
Address: BLDG. 458 CODE 400
NAS PENSACOLA, FL 32508
Phone #: 452-4315
Contact: GREG CAMPBELL
Job Order #: 130 6271

Lab ID Number:
Sample Date: 8-26-98
Received Date: 8-26-98
Sample Site: Brewson Field
Lab Due Date:

Sample ID #	Lab	#1-S-3289	#2-S-3290	#3-S-3291	#4-S-3292
Sample Name	----------	MW #3	Equipment Blank	MW 8.	MW # 10
or Location	----------	Brewson/1107	Brewson/1107	→	→
Sampled by	----------	PK/BH	→	→	→
Composite	Begin				
Date/Time	Frequency				
Collected	End				
Grab Time	----------	1045	1105	1115	1225
Sample Matrix	----------	GW	DI	GW	GW

Notes: Site 1107 Brewson Field MW #8-GC

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									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	X	2 BTLS	X	2 BTLS	X	3 BTLS	X	2 BTLS	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	X	2 BTLS	X	2 BTLS	X	3 BTLS	X	2 BTLS	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									1	250ml/4 oz.	HNO_3/None
Other:												

Comments:

Relinquished by: [signature]
Date/Time: 8-26-98 1325 (departure) [signature]

Received by: [signature]
Date/Time: 8-26-98 1405 LAB

E:\123\24\forms\custody\ustR0.wk1 rev 0 8/28/96

9/10

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: NPWC ENGINEERING
Address: BLDG. 458 CODE 400
NAS PENSACOLA, FL 32508
Phone #: 452-4315
Contact: GREG CAMPBELL
Job Order #: 130 6271

Lab ID Number:
Sample Date: [illegible]
Received Date: [illegible]
Sample Site: [illegible]
Lab Due Date:

Sample ID #	Lab	#1- 3293	#2- 3294	#3-	#4-	Notes:
Sample Name	----------	MW#16	Duplicate			Equipment Sample
or Location	----------	Downgradient	Downgradient			
Sampled by	----------	PK / BH	PK / BH			
Composite	Begin					
Date/Time	Frequency					
Collected	End					
Grab Time	----------	1245				
Sample Matrix	----------	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 BOTT	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	X	4 VIALS	X	4 VIALS					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	X	2 BOTT	X	2 BOTT					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
Mineral 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	RL–PRO	X	2 BOTT	X	2 BOTT					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 BOTT	X	1 BOTT					1	250ml/4 oz.	HNO_3/None
Other:			BDL		BDL							

Comments: DET LIMIT 0.003 ng/l RUN 9/9/98

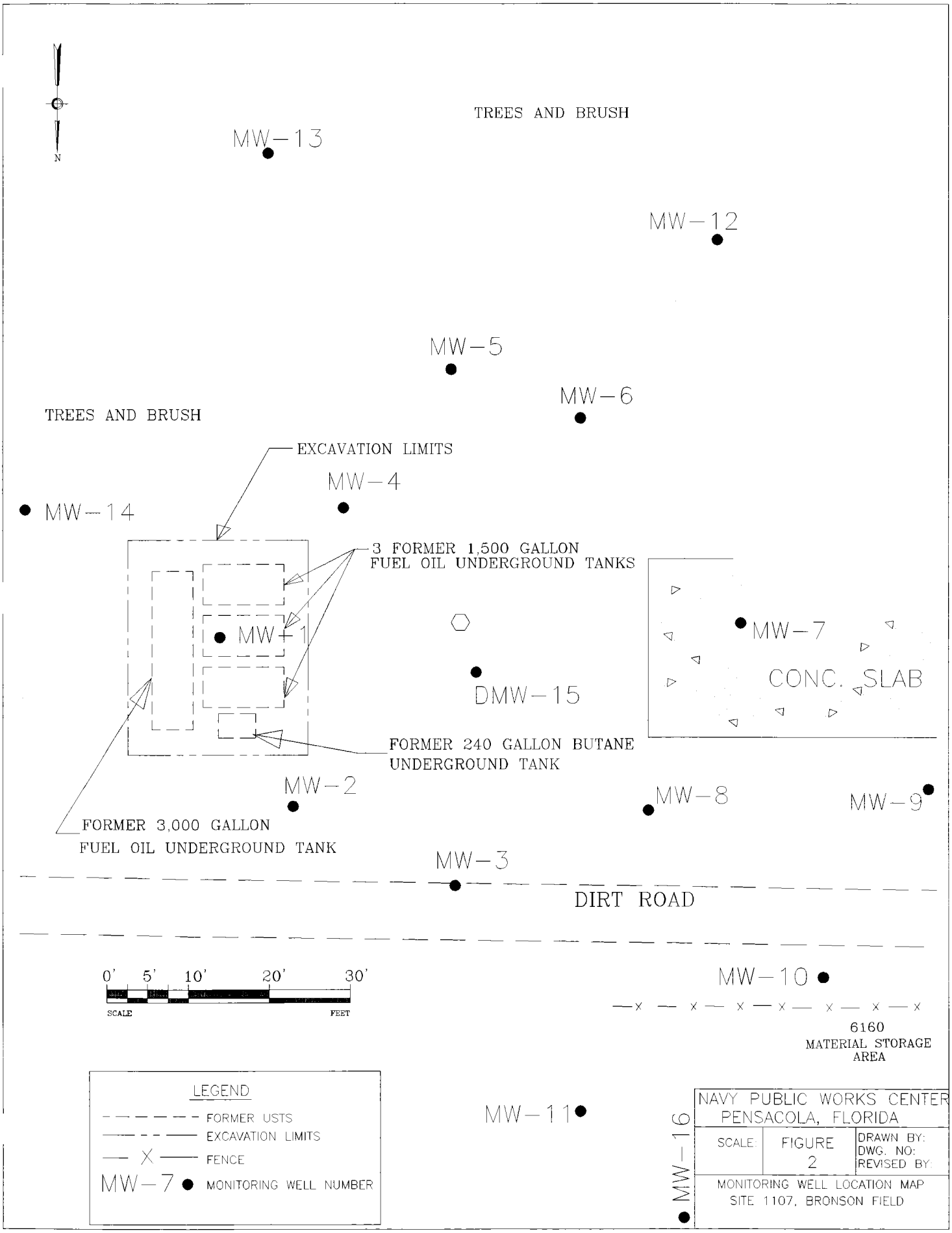
Relinquished by: [signature]
Date/Time: 8.26.98 13:25 (departure) Bissen

Received by: [signature]
Date/Time: 8/26/98 1405 L.A.B.

C:\123\24\forms\custody\ust\R0 wa1 rev 0 8/28/98

APPENDIX D

Figure 2: Monitoring Well Location Map


N
TREES AND BRUSH
MW-13
MW-12
MW-5
MW-6
TREES AND BRUSH
EXCAVATION LIMITS
MW-4
MW-14
3 FORMER 1,500 GALLON
FUEL OIL UNDERGROUND TANKS
MW-1
MW-7
CONC. SLAB
DMW-15
FORMER 240 GALLON BUTANE
UNDERGROUND TANK
MW-2
MW-8
MW-9
FORMER 3,000 GALLON
FUEL OIL UNDERGROUND TANK
MW-3
DIRT ROAD
0' 5' 10' 20' 30'
SCALE
FEET
MW-10
6160
MATERIAL STORAGE
AREA
LEGEND
FORMER USTS
EXCAVATION LIMITS
FENCE
MW-7 MONITORING WELL NUMBER
MW-11
MW-16
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
FIGURE
2
DRAWN BY:
DWG. NO:
REVISED BY:
MONITORING WELL LOCATION MAP
SITE 1107, BRONSON FIELD

APPENDIX E

Lithological Logs
Monitoring Well Construction Diagrams

Site 1107	LOGGED BY: Greg Campbell	SHEET 1 OF 1	
Bronson Field	Contractor: MWM, Inc.	Dr. Method:	HSA
Pensacola, Florida	Driller: Chuck Malsbury	Dr. Rig:	Mobil
	Start Date: 5/1/98	Completed:	5/1/98
MONITOR WELL NO.: MW-16	Start Time: 0830	Finish Time:	0930
Delivery Order 0015	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				100%		0'-1', Brown Loam w/ Humus.				
					2		9	0.1	8.9	
				100%	4		.7	0.2	0.5	
HOLLOW STEM AUGUR					6	1'-13'; Red/Brown, Silty Fine Sand.				
				100%						
					8		.3	0.1	0.2	
				100%	10		.3	0	0.3	
					12					
				100%						
					14		0	0	0	
			Water Table @ Approx. 15' bls							
				100%	16	13'-19; Red/Brown Becoming Increasingly Lighter w/Depth, Silty Fine Sand. Trace of Clay. Mottled @ WT.	0	0	0	
					18					
				100%						
					20	19'-23'; Red/Brown, Clayey Fine Sand.				
				100%	22					
						End of Boring @ 23' bls.				
					24					

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:

NPWC

ENVIRONMENTAL

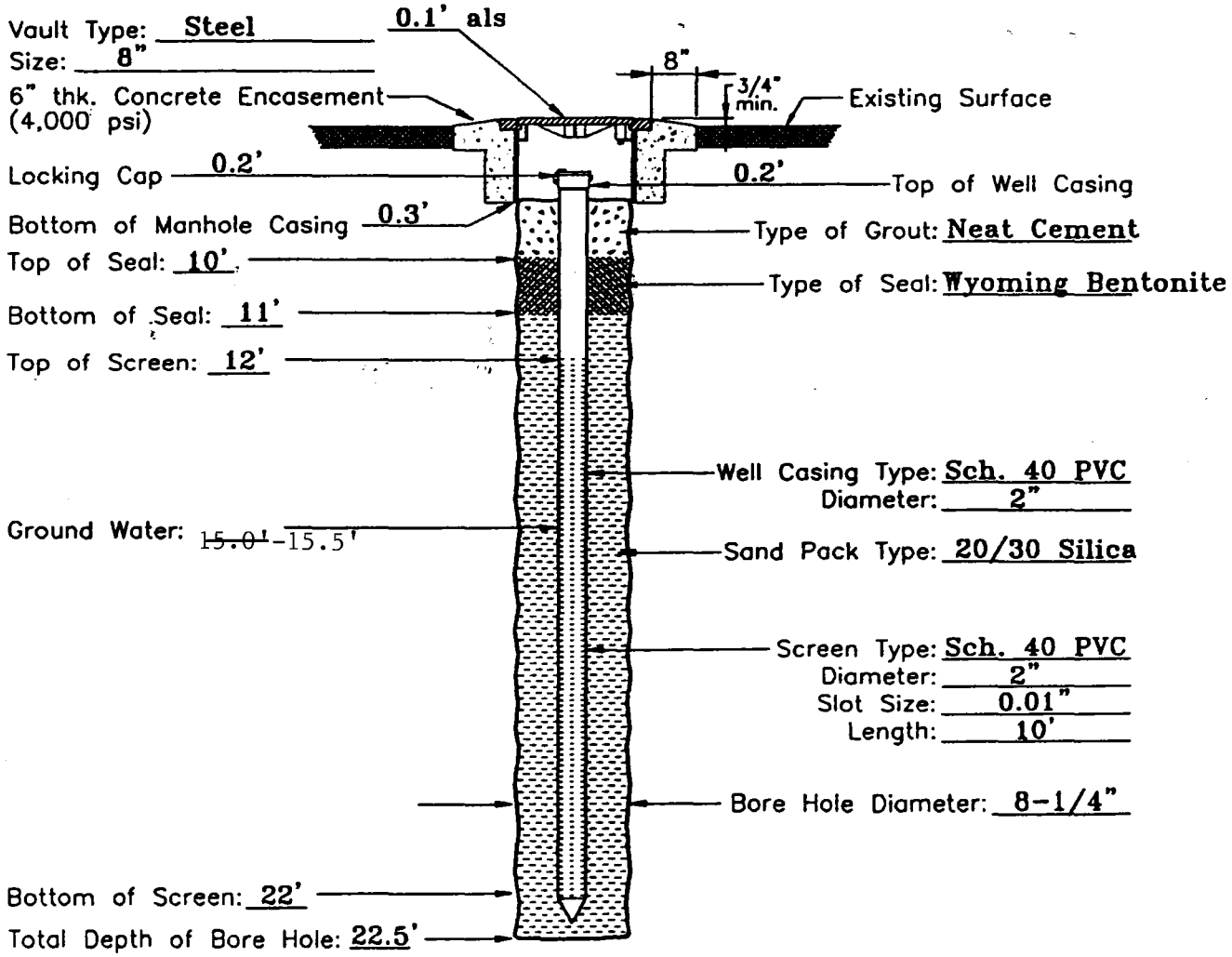
MONITOR WELL CONSTRUCTION DETAIL

310 John Tower Road
Pensacola, Florida 32508-5303
(850) 452-4315
(850) 452-2331 Fax

LOGGED BY: Greg Campbell
DRILLING CONTRACTOR: MWM, Inc
DRILLER'S NAME: Chuck Malsbury
WELL NUMBER: MW-16

CLIENT: NAS Pensacola, FL
LOCATION: Site 1107, Bronson Field
JOB NUMBER:
DATE Start: 5/1/98 **Finish:** 5/1/98
TIME Start: 0830 **Finish:** 0930

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 F

TABLE III: Summary of VOA, PAHs, TPHs
Analytical Results for Groundwater Collected from MW-16

TABLE III
SUMMARY OF VOAs, PAHs, & TPHs
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELL MW-16
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1107

PARAMETER	MONITORING WELL NUMBER
	MW-16
VOAs	BDL
PAHs	BDL
TPH	BDL
EDBs	BDL
LEAD	BDL

NOTES: BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
Groundwater samples collected from MW-16 on August 26, 1998.

APPENDIX G

TABLE IV: Summary of PAHs
Analytical Results for Groundwater Samples Collected
from MW-1, MW-3, MW-4, MW-6, MW-8, MW-10, and
MW-16

TABLE V: Summary of TPH, EDB, and Lead
Analytical Results for Groundwater Samples Collected
from MW-1, MW-3, MW-4, MW-6, MW-8, MW-10, and
MW-16

TABLE IV
SUMMARY OF PAHs
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELLS MW-1, MW-3, MW-4, MW-6, MW-8, MW-10, and MW-16
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1107

		MONITORING WELL NUMBER						
PARAMETER		MW-1	MW-3	MW-4	MW-6	MW-8	MW-10	MW-16
Naphthalene	8/26/98	FP	4	FP	FP	2	BDL	BDL
Naphthalene	6/3/96	NS	NS	NS	NS	NS	BDL	NS
Naphthalene	3/11/96	BDL	BDL	55*	BDL	BDL	NS	NS
Phenanthrene	8/26/98	FP	BDL	FP	FP	BDL	BDL	BDL
Phenanthrene	6/3/96	NS	NS	NS	NS	NS	BDL	NS
Phenanthrene	3/11/96	BDL	BDL	55	BDL	BDL	NS	NS
Pyrene	8 /26/98	FP	BDL	FP	FP	BDL	BDL	BDL
Pyrene	6/3/96	NS	NS	NS	NS	NS	BDL	NS
Pyrene	3/11/96	4	BDL	50	6	4	NS	NS
1-Methylnaphthalene	8 /26/98	FP	3	FP	FP	7	BDL	BDL
1-Methylnaphthalene	6/3/96	NS	NS	NS	NS	NS	BDL	NS
1-Methylnaphthalene	3/11/96	BDL	BDL	180	BDL	5	NS	NS
2-Methylnaphthalene	8 /26/98	FP	5	FP	FP	5	BDL	BDL
2-Methylnaphthalene	6/3/96	NS	NS	NS	NS	NS	BDL	NS
2-Methylnaphthalene	3/11/96	BDL	BDL	200	BDL	BDL	NS	NS

NOTES: BDL = Below detection limits
All results reported in parts per billion (ppb) unless otherwise noted.
Groundwater analyses performed for monitoring wells on date indicated above.
FP = Free Product in well. Unable to collect sample.
* The analyte was detected below the detection limit; therefore, it is an estimated valve.

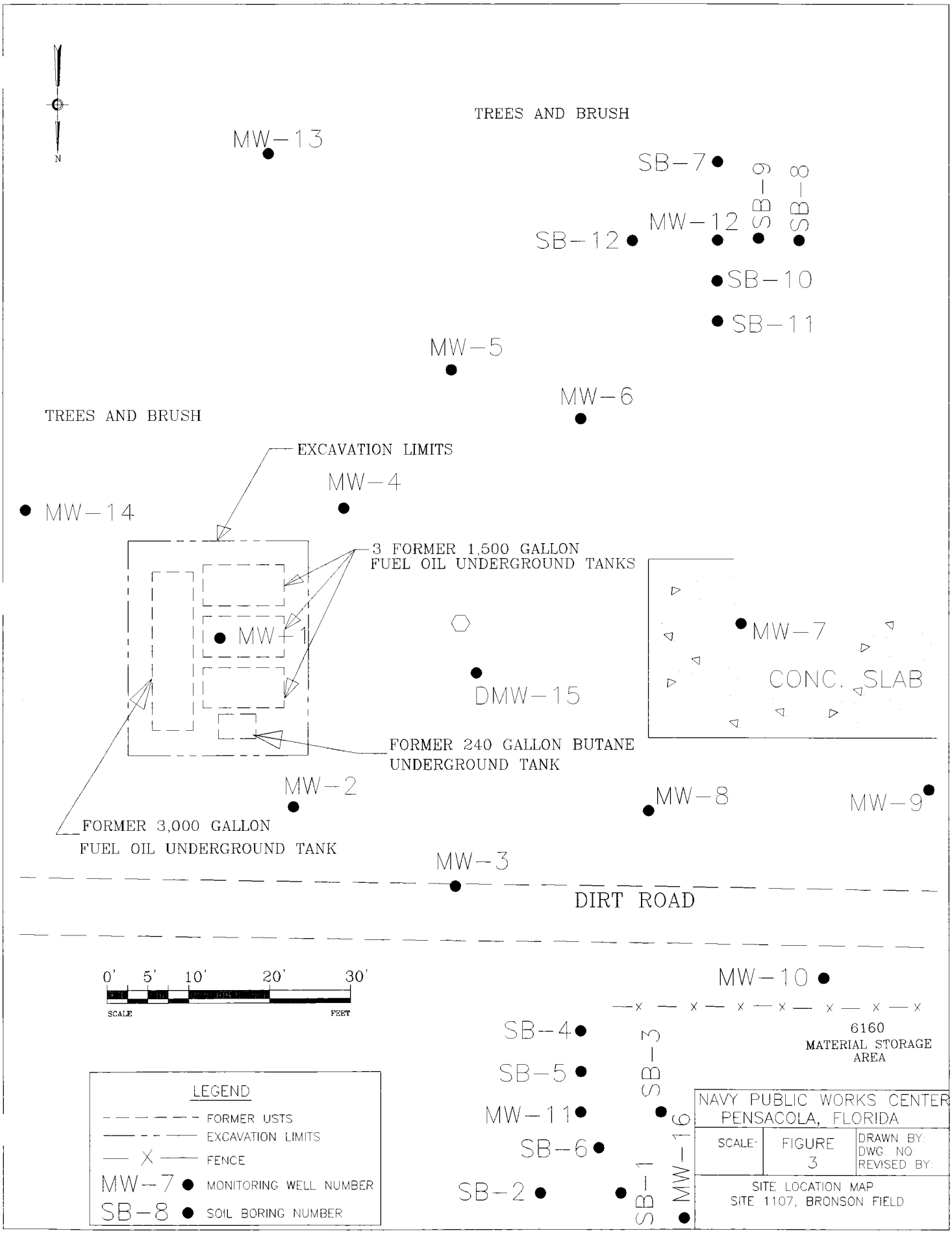
TABLE V
SUMMARY OF TPH, EDB AND LEAD
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED FROM MONITORING WELLS MW-1, MW-3, MW-4, MW-6, MW-8, MW-10 and MW-16
U.S. NAVY OUTLYING LANDING FIELD BRONSON, SITE 1107

PARAMETER	MONITORING WELL NUMBERS						
	MW-1	MW-3	MW-4	MW-6	MW-8	MW-10	MW-16
TPH 8/26/98	FP	BDL	FP	FP	BDL	BDL	BDL
TPH 6/3/96	NS	NS	NS	NS	NS	BDL	NS
TPH 3/11/96	2800	140	3700	930	1600	NS	NS
EDB 8/26/98	FP	NS	FP	FP	NS	NS	BDL
EDB 6/3/96	NS	NS	NS	NS	NS	BDL	NS
EDB 3/11/96	BDL	BDL	BDL	BDL	BDL	NS	NS
LEAD 8/16/98	NS	NS	NS	NS	NS	NS	BDL
LEAD 4/23/97 & 4/24/97	BDL	BDL	BDL	BDL	BDL	BDL	NS

NOTES: All results reported in parts per billion (ppb) unless otherwise noted.
Groundwater monitoring analyses performed on monitoring wells on dates indicated above.
BDL = Below detection limits
NS = Not sampled
TRPH = Total Recoverable Petroleum Hydrocarbons
EDB = 1,2 Dibromoethane
FP = Free Product

APPENDIX H

FIGURE 3: Site Location Map


N
TREES AND BRUSH
MW-13
SB-7
SB-9
SB-8
MW-12
SB-12
SB-10
SB-11
MW-5
MW-6
TREES AND BRUSH
EXCAVATION LIMITS
MW-4
MW-14
3 FORMER 1,500 GALLON
FUEL OIL UNDERGROUND TANKS
MW-1
MW-7
CONC. SLAB
DMW-15
FORMER 240 GALLON BUTANE
UNDERGROUND TANK
MW-2
MW-8
MW-9
FORMER 3,000 GALLON
FUEL OIL UNDERGROUND TANK
MW-3
DIRT ROAD
0' 5' 10' 20' 30'
SCALE
FEET
MW-10
6160
MATERIAL STORAGE
AREA
SB-4
SB-3
SB-5
MW-11
SB-6
SB-2
SB-1
MW-16
LEGEND
FORMER USTS
EXCAVATION LIMITS
FENCE
MW-7 MONITORING WELL NUMBER
SB-8 SOIL BORING NUMBER
NAVY PUBLIC WORKS CENTER
PENSACOLA, FLORIDA
SCALE:
FIGURE 3
DRAWN BY:
DWG. NO:
REVISED BY:
SITE LOCATION MAP
SITE 1107, BRONSON FIELD