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NAS PENSACOLA  
5090.3a

CLEANUP VERIFICATION ASSESSMENT REPORT ADDENDUM FOR MCDONALDS SITE  
NAS PENSACOLA FL  
4/1/1995  
NAVY PUBLIC WORKS CENTER

**CLEANUP VERIFICATION ASSESSMENT REPORT ADDENDUM**

**MCDONALD'S SITE,  
NAVAL AIR STATION  
PENSACOLA, FLORIDA**

**PREPARED BY:**

**NAVY PUBLIC WORKS CENTER  
BUILDING 3691, NAS PENSACOLA  
PENSACOLA, FL 32508-6500**

**AUTHOR: GREG CAMPBELL, P.E.**

**APRIL 1995**

**PREPARED FOR:**

**SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
2155 EAGLE DRIVE  
NORTH CHARLESTON, SC 29418**

**BYAS GLOVER, CODE 18410, ENGINEER-IN-CHARGE**

CLEANUP VERIFICATION ASSESSMENT REPORT ADDENDUM

MCDONALD'S SITE,  
NAVAL AIR STATION  
PENSACOLA, FLORIDA

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#### 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 Cleanup Verification Assessment Addendum was developed for the McDonald's site located at the Naval Air Station, Pensacola, Florida and should not be construed to apply to any other site.



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



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Date



DEPARTMENT OF THE NAVY

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

IN REPLY REFER TO:

5090  
Code 911.4  
SER E170

APR 20 1995

Mr. David Clowes, P.G.  
Remedial Project Manager  
Florida Department of Environmental Protection  
Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

RE: CLEANUP VERIFICATION ASSESSMENT ADDENDUM, McDONALDS SITE,  
NAVAL AIR STATION PENSACOLA

Dear Mr. Clowes:

This letter is in reference to your November 18, 1994 letter addressing comments to the Cleanup Verification Assessment Report dated March 16, 1994 for the McDonald's Site, Naval Air Station, Pensacola. The responses to your comments are summarized below:

**COMMENT 1:** Monitoring well MW-6 should be identified on all figures. Is MW-6 located inside the fence around the recovery system or is it the same as MW-1?

**RESPONSE 1:** There is presently no monitoring well MW-6. Monitoring well MW-6 was apparently either abandoned or converted to a recovery well (RC-1) during remedial action implementation. The CAR performed by Geraghty and Miller on January 1987 shows monitoring well MW-6 at the same approximate location as the existing recovery well (RC-1) location. Figures 2-2 and 3-1 have been revised to include the location of recovery well RC-1 and are included as Appendix A.

**COMMENT 2:** Soil assessment in accordance with Rule 17-770.200(2), F.A.C., and the Department's May 1994 "Guidelines for Assessment and Remediation of Petroleum Contaminated soil" should be performed around the pipeline leak area and free product recovery well to determine the horizontal and vertical extent of soil contamination in the unsaturated zone. Note, if soil borings cannot be performed via hand augers from the "auger refusal area" then methods that were utilized to drill the monitoring wells should be employed to perform the soil borings.

**RESPONSE 2:** Groundwater Technology Government Services, Inc. (GSI) advanced six hand auger borings (SB-1 through SB-6) on Dec 24, 1994 at different locations in the vicinity of the pipeline leak area for organic vapor analysis. Of the six

borings advanced only one, SB-1, reached a depth to intercept the groundwater table interface. The other five hand augers met refusal due to possible building rubble and concrete debris. NPWC decided to cease hand auger boring efforts after the fifth hand auger boring refusal. The Organic Vapor Analyzer (OVA) results and soil boring locations are summarized in Table 1 and Figure 1 of Appendix B. The OVA results indicate the soil is not excessively contaminated.

On April 3, 1995, FGS, Inc., and Pensacola Testing Laboratories (drilling subcontractor) advanced ten shallow soil borings (B-1 through B-10) in the vicinity of the pipeline leak area to the groundwater table (approximately 6' bls). A drill rig equipped with a hollow stem auger was used to advance the soil borings due to past hand auger refusals. Soil samples were collected at 1.5, 3.5 and 6.0 foot intervals and analyzed for organic vapors using an OVA. The OVA results and soil boring locations are summarized in Table 2 and Figure 2 of Appendix B. The OVA results indicate the soil is not excessively contaminated.

**COMMENT 3:** If MW-6 is located inside the fence area, then a minimum of two additional monitoring wells, one downgradient monitoring well from MW-6 and one vertical extent monitoring well adjacent to MW-6 should be installed to define the horizontal and vertical extent of the groundwater contamination in the downgradient direction.

**RESPONSE 3:** Monitoring well MW-6 is not located in the fenced area (See Response 1) and therefore no additional monitoring wells were installed.

**COMMENT 4:** If MW-6 presently does not contain free product, then it should be sampled for EPA Methods 602, 610 and 418.1.

**RESPONSE 4:** Two submersible recovery pumps were removed from recovery well RC-1 in November of 1994. Recovery well RC-1, located at or adjacent to the past location of MW-6 (See Response 1), was tested by GSI for petroleum free product using an oil/water interface probe on December 21, 1994. No free-phase petroleum hydrocarbons were detected in the recovery well. Groundwater samples were collected from recovery well RC-1 by Analytical Technology, Inc. (ATI) personnel on January 3, 1995. Samples were analyzed by PWC laboratory for volatile organic hydrocarbons using EPA method 8260 and Polynuclear Aromatic Hydrocarbons (PAH) using EPA method 8270A. Groundwater samples were also analyzed by ATI for Total Recoverable Petroleum Hydrocarbons (TRPH). No VOAs or PAHs were detected in the groundwater samples collected from recovery well RC-1. TRPH was detected in the groundwater sample collected from Recovery well RC-1 at a concentration of 9 parts per million (ppm). The TRPH concentration is above the State Target Level of 5 ppm. Laboratory analytical results are listed in Appendix C.

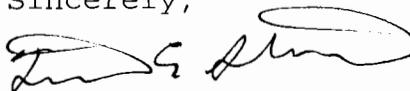
**COMMENT 5:** Why does monitoring well MW-1 on Figure 2-2 have a triangle around it? Does the triangle signify a recovery well?

**RESPONSE 5:** The triangle was inadvertently place around recovery well MW-1 and it does not signify a recovery well. Figure 2-2 has been revised with the triangle omitted from MW-1 (See Appendix A for revised Figure 2-2).

In summary the soil assessment performed did not indicate soil contamination at the vicinity of the JP-5 pipeline leak. TRPH detected in the groundwater samples collected from RC-1 were , somewhat above the FDEP State Target Level. Therefore, PWC recommends that recovery well RC-1 be included in and FDEP approve the monitoring only plan outlined in the March 16, 1994, Verification Cleanup Assessment Report. Therefore, it is recommended that the monitoring only plan outlined in the March 16, 1994, Verification Cleanup Assessment Report be approved by FDEP.

If you have any questions please contact Greg Campbell at (904) 452-3180.

Sincerely,



FRANK STUART  
By direction

Enclosure: (W/copies)

(1) Cleanup Verification Assessment Report Addendum, McDonalds site

Copy to: (With/1 encl)

SOUTHNAVFACENGCOM (Code 18410, Byas Glover)

NAS PENSACOLA (Code 00500)

APPENDIX A

REVISED FIGURES 2-2 AND 3-1

EAST LANE - RADFORD BLVD.

LOCATION OF LEAK

RC-1

JP-5 PIPELINE

SIDEWALK

MW-2

MW-1

MW-3

SIGN

GRASSY AREA

MW-4

FENCE AROUND RECOVERY SYSTEM

MW-7

PAVEMENT

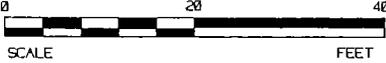
PAVEMENT

McDONALD'S RESTAURANT

MW-8

LEGEND

- MW-4  MONITORING WELL LOCATION AND DESIGNATION
- RC-1  RECOVERY WELL LOCATION AND DESIGNATION



NAVY PUBLIC WORKS CENTER  
PENSACOLA, FLORIDA

SCALE: 1" = 20'

FIGURE  
2-2

DRAWN BY: GAC  
DWG. NO.: macdon  
REVISED BY:

DATE: 4/13/95

MONITORING WELL LOCATION MAP

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA

EAST LANE - RADFORD BLVD.

LOCATION OF LEAK

RC-1

JP-5 PIPELINE

SIDEWALK

MW-2/2.55

MW-1/2.51

MW-3/2.67

SIGN

GRASSY AREA

MW-4/2.48

FENCE AROUND  
RECOVERY SYSTEM

GROUNDWATER FLOW  
DIRECTION

MW-7/2.42

PAVEMENT

PAVEMENT

McDONALD'S  
RESTAURANT

MW-8/2.32

LEGEND

- MW-4/2.48 MONITORING WELL LOCATION AND DESIGNATION/WATER LEVEL ELEVATION, FEET, MSL
- RC-1 RECOVERY WELL LOCATION AND DESIGNATION



NAVY PUBLIC WORKS CENTER  
PENSACOLA, FLORIDA

SCALE: 1" = 20'

FIGURE  
3-1

DRAWN BY: GAC  
DWG. NO: mcdon  
REVISED BY:

DATE: 4/13/95

GROUNDWATER LEVEL ELEVATIONS AND  
GROUNDWATER FLOW DIRECTION

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA

APPENDIX B

TABLES 1 AND 2  
FIGURES 1 AND 2

**TABLE 1**  
**Summary of Organic Vapor Contents In Soils**

Former NADEP Hangers  
Pensacola Naval Air Station, Pensacola, Florida

December 21, 1994

Sample Location	OVA Results Filtered	OVA Results Unfiltered
SB-1 at 1 foot	ND	ND
SB-1 at 3 feet	ND	ND
SB-1 at 6 feet	ND	ND
SB-2 at 1 foot	ND	ND
SB-2 at 3 feet	ND	ND
SB-3 at 1 foot	ND	ND
SB-3 at 3 feet	ND	ND
SB-4 at 1 foot	ND	ND
SB-4 at 3 feet	ND	ND
SB-5 at 1 foot	ND	ND
SB-5 at 3 feet	ND	ND
SB-6 at 1 foot	ND	ND

Notes: ND = None detected

All results reported in parts per million

Filtered results are those obtained with a charcoal filter used to verify the presence of methane.

**TABLE 2**  
**SUMMARY OF OVA/FID FIELD SCREENING RESULTS**  
**NAVAL AIR STATION, BUILDING 3630**  
**PENSACOLA, FLORIDA**

Sample	Date	Depth (FBLS)	OVA/FID Screening Results <sup>(1)</sup> (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C <sub>1</sub> to C <sub>3</sub> Hydrocarbons (Filtered)	Non-Methane Hydrocarbons (>C <sub>3</sub> )	
B-1	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-2	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-3	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-4	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-5	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-6	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-7	4/3/95	1.5	1.0	BDL	1.0	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-8	4/3/95	1.5	1.2	BDL	1.2	NO ODOR
		3.5	2.8	BDL	2.8	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR
B-9	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C<sub>1</sub> to C<sub>3</sub> hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

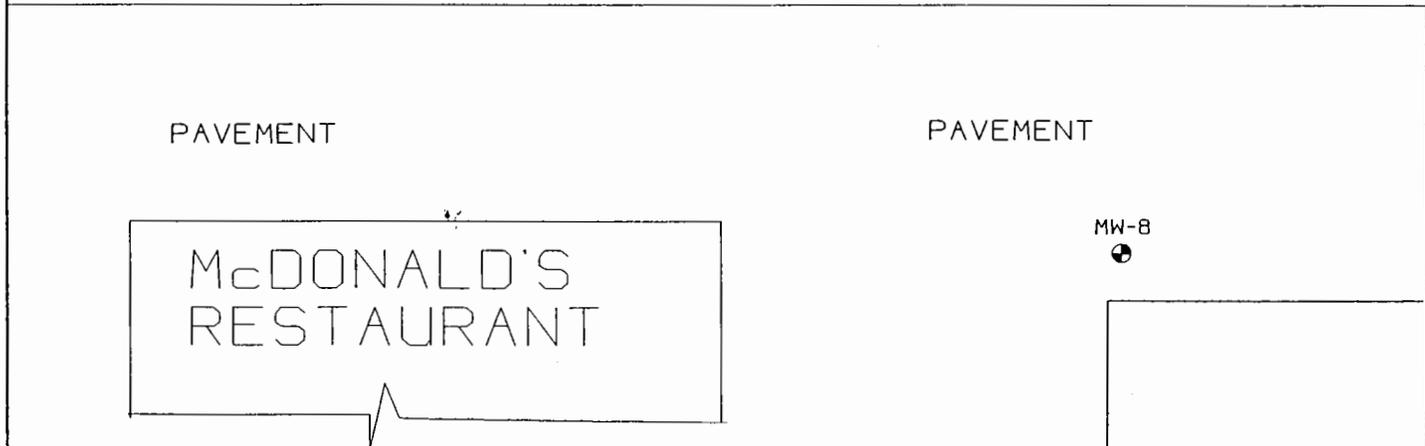
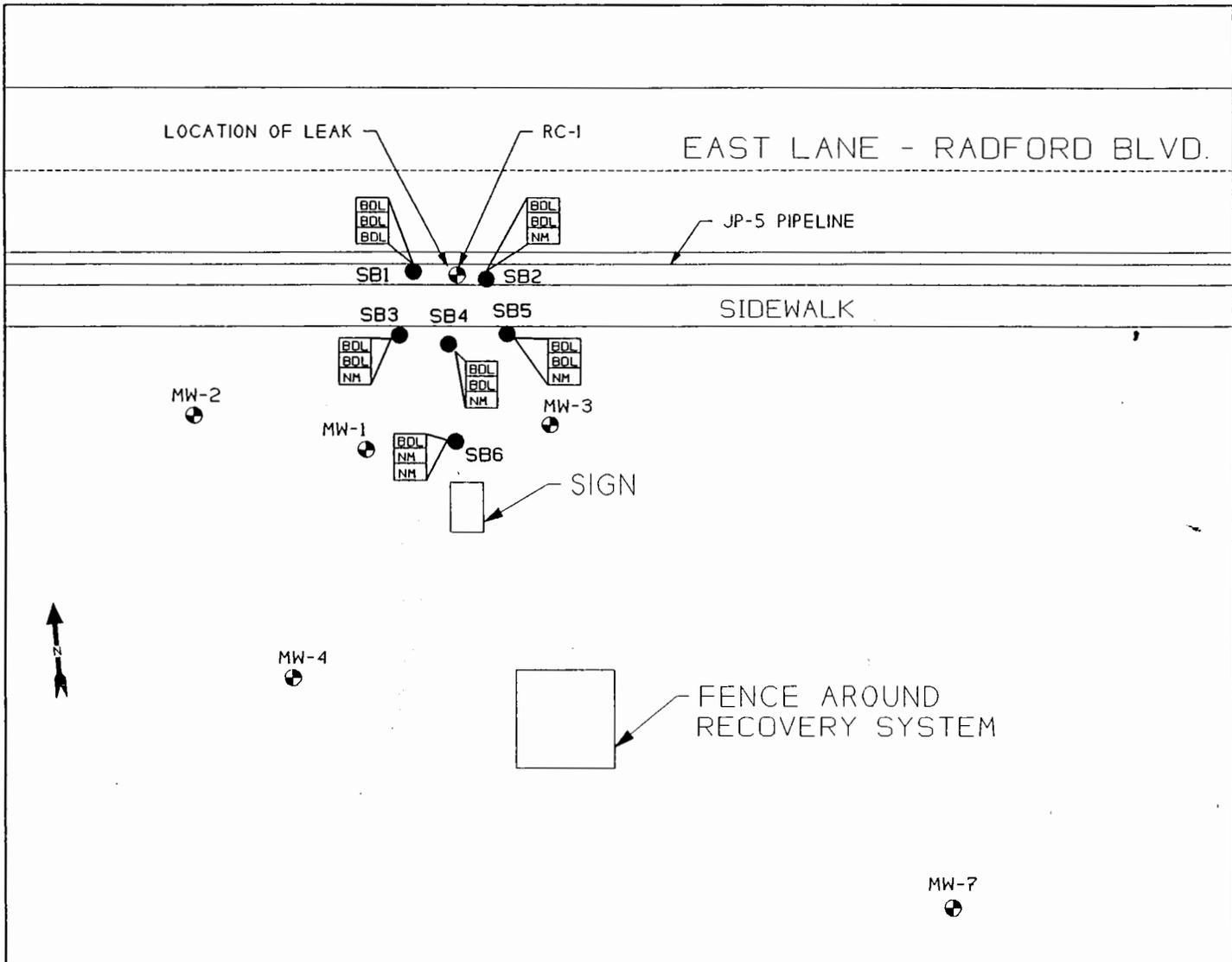
BDL: Below Detection Limit  
 FBLS: Feet Below Land Surface  
 NR: No Reading  
 PPM: Parts Per Million

**TABLE 2 (CONTINUED)**  
**SUMMARY OF OVA/FID FIELD SCREENING RESULTS**  
**NAVAL AIR STATION, BUILDING 3630**  
**PENSACOLA, FLORIDA**

Sample	Date	Depth (FBLs)	OVA/FID Screening Results <sup>(1)</sup> (ppm)			Comment
			Total Hydrocarbons (Unfiltered)	C <sub>1</sub> to C <sub>3</sub> Hydrocarbons (Filtered)	Non-Methane Hydrocarbons (> C <sub>3</sub> )	
B-10	4/3/95	1.5	BDL	NR	BDL	NO ODOR
		3.5	BDL	NR	BDL	NO ODOR
		6.0	BDL	NR	BDL	NO ODOR

(1) "Total hydrocarbons reading is the measurement of total organic vapors. C<sub>1</sub> to C<sub>3</sub> hydrocarbons reading ("filtered") is the measurement of methane, ethane and propane drawn through a carbon filter. The non-methane hydrocarbon reading is the difference between the "Total" and "Filtered" readings.

BDL: Below Detection Limit  
 FBLS: Feet Below Land Surface  
 NR: No Reading  
 PPM: Parts Per Million



LEGEND

- MW-4 MONITORING WELL LOCATION AND DESIGNATION
- B-9 BORING HOLE LOCATION AND DESIGNATION
- OVA CONCENTRATION 1.5' BLS  
OVA CONCENTRATION 3.5' BLS  
OVA CONCENTRATION 6' BLS
- RC-1 RECOVERY WELL LOCATION AND DESIGNATION

NOTE: BDL = BELOW DETECTION LIMIT  
NM = NOT MEASURED



NAVY PUBLIC WORKS CENTER  
PENSACOLA, FLORIDA

SCALE: 1" = 20'  
DATE: 4/13/95  
DRAWN BY: GAC  
DWG. NO.: medon  
REVISED BY:

FIGURE  
1

OVA CONCENTRATION MAP FOR SOIL  
BORINGS ADVANCED BY GSI

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA

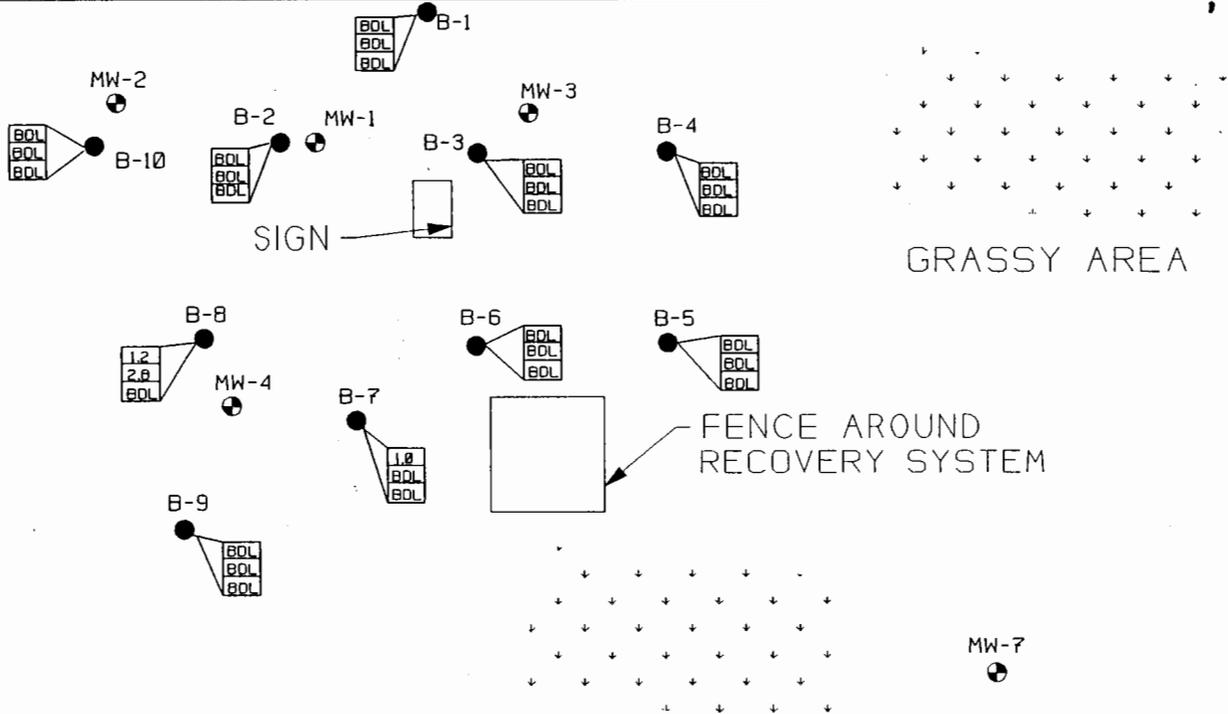
EAST LANE - RADFORD BLVD.

LOCATION OF LEAK

RC-1

JP-5 PIPELINE

SIDEWALK



GRASSY AREA

FENCE AROUND RECOVERY SYSTEM

PAVEMENT

PAVEMENT

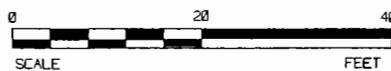
McDONALD'S RESTAURANT

MW-8

LEGEND

- B-9 ● BORING HOLE LOCATION AND DESIGNATION
- (with data) OVA CONCENTRATION 1.5' BLS  
● (with data) OVA CONCENTRATION 3.5' BLS  
● (with data) OVA CONCENTRATION 6' BLS
- MW-4 ● MONITORING WELL LOCATION AND DESIGNATION
- RC-1 ● RECOVERY WELL LOCATION AND DESIGNATION

NOTE: BDL - BELOW DETECTION LIMIT



NAVY PUBLIC WORKS CENTER  
PENSACOLA, FLORIDA

SCALE: 1" = 20'

FIGURE  
2

DRAWN BY: GAC  
DWG. NO.: mcdon  
REVISED BY:

OVA CONCENTRATION MAP FOR SOIL  
BORINGS ADVANCED BY FGS, INC.

CLIENT: NAS ENVIRONMENTAL DEPARTMENT, NAS PENSACOLA

APPENDIX C

LABORATORY ANALYTICAL RESULTS

# Navy Public Works Center Environmental Laboratory

Bldg. 3297, Code 920  
NAS Pensacola, Fl. 32508-6500  
Phone 904-452-3642/4758  
Autovon 922-3642

Requester: NPWC Environmental  
Address: Bldg 3691 Code 900  
NAS Pensacola, FL 32508-5303  
Phone #: 452-3180  
Contact: Greg Campbell

# Laboratory Report

Volatiles by Method 8260

Lab ID Number: 9502005 B  
Sample Date: 3 JAN 95  
Received Date: 3 JAN 95  
Sample Site: McDonald's NAS Pensacola  
Job Order #: 130 6209

Sample ID#	Lab	1- 8709			2- 8710			3-			4-		
Sample Name	Requester	Monitor Well #6			Equipment Blank								
Collector Name		R. Hagendorfer			R. Hagendorfer								
Date/Time Collected (Military)	Comp start												
	Comp stop												
Sample Type	Grab	3 JAN 95 @ 1220			3 JAN 95 @ 1210								
	Comp/Grab	Grab			Grab								
Analyst		Joe Moore			Joe Moore								
Date of Analysis		17 JAN 95			17 JAN 95								
Sample Matrix		Groundwater			Reagent Water								
Dilution		Dilution X 1			Dilution X 1			Dilution X 1			Dilution X 1		
PARAMETER	METHOD #	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit
Volatiles by GCMS (Capillary)	METHOD #	1- 8709			2- 8710			3-			4-		
Benzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Bromobenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Bromochloromethane*	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Bromodichloromethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Bromoform	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Bromomethane	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
n-Butylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
sec-Butylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
tert-Butylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Carbon Tetrachloride	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Chlorobenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Chloroethane	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Chloroform	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Chloromethane*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
2-Chlorotoluene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
4-Chlorotoluene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Dibromochloromethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2-Dibromo-3-chloropropane*	EPA 8260	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
1,2-Dibromoethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Dibromomethane*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2-Dichlorobenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,3-Dichlorobenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,4-Dichlorobenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Dichlorodifluoromethane	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
1,1-Dichloroethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2-Dichloroethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,1-Dichloroethene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
cis-1,2-Dichloroethene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
trans-1,2-Dichloroethene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2-Dichloropropane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,3-Dichloropropane*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
2,2-Dichloropropane*	EPA 8260	BDL	ug/l	4	BDL	ug/l	4		ug/l	4		ug/l	4
1,1-Dichloropropene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Ethylbenzene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Hexachlorobutadiene*	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
Isopropylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
p-Isopropyltoluene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Methylene chloride	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1

**Navy Public Works Center  
Environmental Laboratory**

Bldg 3297, Code 920  
NAS Pensacola, Fl. 32508-6500  
Phone 904-452-3642/4758  
Autovon 922-3642

Requester: NPWC Environmental  
Address: Bldg 3691 Code 900  
NAS Pensacola, FL 32508-5303  
Phone #: 452-3180  
Contact: Greg Campbell

**Laboratory Report**

**Volatiles by Method 8260**

Lab ID Number: 9502005 B  
Sample Date: 3 JAN 95  
Received Date: 3 JAN 95  
Sample Site: McDonald's NAS Pensacola  
Job Order #: 130 6209

PARAMETER	METHOD #	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit
Volatiles by GCMS (Capillary)		1-8709			2-8710			3-			4-		
Naphthalene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
n-Propylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Styrene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,1,1,2-Tetrachloroethane*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,1,2,2-Tetrachloroethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Tetrachloroethene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Toluene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2,3-Trichlorobenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2,4-Trichlorobenzene*	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2
1,1,1-Trichloroethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,1,2-Trichloroethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Trichloroethene	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Trichlorofluoromethane	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2,3-Trichloropropane*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,2,4-Trimethylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
1,3,5-Trimethylbenzene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
Vinyl Chloride	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
o-Xylene*	EPA 8260	BDL	ug/l	1	BDL	ug/l	1		ug/l	1		ug/l	1
m,p-Xylene*	EPA 8260	BDL	ug/l	2	BDL	ug/l	2		ug/l	2		ug/l	2

Surrogate Recoveries Compound	Acceptance Limits			
1,2-Dichloroethane-d4	76-114	97	95	
Toluene-d8	88-110	100	99	
Bromofluorobenzene	86-115	100	99	

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

\* - HRS certification pending.

Approved by: *Joseph W. Moore, Chemist* Date/Time: 01-Feb-95 @ 13:53  
Jerry Dees, Laboratory Director

*(For Jerry Dees)*

**Navy Public Works Center  
Environmental Laboratory**

**Laboratory Report  
PAH's by Method 8270A**

Bldg. 3691, Code 920  
NAS Pensacola, Fl. 32508-6500  
Phone (904) 452-4728  
Autovon 922-4728

Requester: NPWC Environmental  
Address: Bldg. 3691 Code 900  
NAS Pensacola, FL 32508-5303  
Phone #: 452-3180  
Contact: Greg Campbell

Lab ID Number: 9502005 A  
Sample Date: 3 JAN 95  
Received Date: 3 JAN 95  
Sample Site: McDonald's NAS Pensacola  
Job Order #: 130 6209

Sample ID#	Lab	1- 8709			2- 8710			3-			4-		
Sample Name	Requester	Monitor Well #6			Equipment Blank								
Collector Name		R. Hagendorfer			R. Hagendorfer								
Date/Time Collected (Military)	Comp start												
	Comp stop												
	Grab	3 JAN 95 @ 1220			3 JAN 95 @ 1210								
Sample Type	Comp/Grab	Grab			Grab								
Analyst		J. W. Moore			J. W. Moore								
Date of Analysis		12 JAN 95			12 JAN 95								
Sample Matrix		Well Water			Reagent Water								
Dilution		Dilution X 1			Dilution X 1			Dilution X 1			Dilution X 1		
PARAMETER	METHOD #	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit	ID#	units	Det. Limit
Polynuclear Aromatics (PAH's)		1- 8709			2- 8710			3-			4-		
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	5	BDL	ug/l	5		ug/l	5		ug/l	5
Benzo(a)anthracene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Benzo(a)pyrene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Benzo(b)fluoranthene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Benzo(g,h,i)perylene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Benzo(k)fluoranthene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Chrysene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Dibenzo(a,h)anthracene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Fluoranthene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Fluorene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Indeno(1,2,3-cd)pyrene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Naphthalene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Phenanthrene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
Pyrene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
1-Methylnaphthalene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5
2-Methylnaphthalene	EPA 8270A	BDL	ug/l	5	BDL	ug/l	5		ug/l	5		ug/l	5

SURROGATE RECOVERIES	Acceptance Limits			
Nitrobenzene - d5	35-114	98	70	
2-Fluorobiphenyl	43-116	65	72	
Terphenyl - d14	33-141	89	90	

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

Well was sampled by ATI.

Approved by: *Joseph W. Moore, Chemist* Date/Time: 01-Feb-95 @ 13:55  
 Jerry Dees, Laboratory Director Report Generated  
*(for Jerry Dees)* End of Report

**Navy Public Works Center  
Environmental Laboratory**

**Laboratory Report**

TPH's by IR

Bldg. 3297, Code 920  
NAS Pensacola, FL. 32508-5303  
Phone 904-452-4728/2170  
Autovon 922-4728

Requester: NPWC Environmental  
Address: Bldg 3691 Code 900  
NAS Pensacola, FL 32508-5303  
Phone #: 452-3180  
Contact: Greg Campbell

Lab ID Number: 9502005 C  
Sample Date: 3 JAN 95  
Received Date: 3 JAN 95  
Sample Site: McDonald's NAS Pensacola  
Job Order #: 130 6209

Sample ID#	Lab	1- 8709	2- 8710	3-	4-
Sample Name	Requester	Monitor Well #6	Equipment Blank		
Collector Name		R. Hagendorfer	R. Hagendorfer		
Time/Date Sample Collected (Military)	Comp start				
	Comp stop				
	Grab	3 JAN 95 @ 1220	3 JAN 95 @ 1210		
Sample Type	Comp/Grab	Grab	Grab		
Analyst		J. Moore	J. Moore		
Date of Analysis		12 JAN 95	12 JAN 95		
Sample Matrix		Groundwater	Reagent Water		
Dilution		Dilution X 1	Dilution X 1	Dilution X 1	Dilution X 1
PARAMETER		ID#	Det.	ID#	Det.
Total Petroleum Hydrocarbons	METHOD #	1- 8709 units	Limit	2- 8710 units	Limit
TPH's by IR	EPA 418.1	9 mg/l	1	BDL mg/l	1

Comments: mg/kg=milligrams per kilogram (ppm).

Analysis performed by Analytical Technologies, Inc.

Approved by:

*Joseph W. Moore, Chemist*  
Jerry Dees, Laboratory Director

Date: 01-Feb-95 @ 14:06

PWC 5090/14

*(for Jerry Dees)*

End of Report

# HAZARDOUS WASTE CHAIN OF CUSTODY/REQUEST FOR ANALYSIS

NPWC Environmental Laboratory  
 Bldg. 3297, Code 020  
 NAS Pensacola, Fl. 32508-6500  
 Ph# - (904) 452-3042/4750  
 Autovon-022-3042

Requestor: NPWC  
 Address: Bldg 3691  
NAS Pensacola  
 Phone #: 452-3180  
 Contact: Greg Campbell  
 Job Order #: 8709 1306209

Report Required? Yes No DER? Yes No  
 Lab ID Number: \_\_\_\_\_  
 Sample Date: 1-3-95  
 Received Date: \_\_\_\_\_  
 Sample Site: NAS Pensacola - M&D Blvd  
 Lab Due Date: \_\_\_\_\_

Sample ID #	Lab	#1- 8709	#2- 8710	#3-	#4-	Notes:						
Sample Name or Location		MW-6 e medicinal's	Equipment Blank			Sampled by ATZ						
Sampled by		R. Huggenburt										
Composite Date/Time Collected	Begin Frequency	1-3-95	1-3-95									
Grab Time	End											
Sample Matrix		water	water									
<b>SINGLE PARAMETERS</b> by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Diluting Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
Gas Chromatography	EPA 8000									4	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Halo. Vol. Org./GC	EPA 8010									4	40 ml x 2/4 oz.	HCl to pH < 2/4° C
EDB & DBCP/GC	EPA 8011									3	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Non-Halo. Vol. Org./GC	EPA 8015(MOD)									4	1L (A) x 2/4 oz.	4° C
Arom. Vol. Org./GC	EPA 8020									3	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Halo/Arom. Vol. Org./GC	EPA 8021									0	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Halo/Arom. Vol. Org./GC	EPA 8010/8020									6	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Phenols/GC	EPA 8040									5	1Lx2/4 oz.	4° C
Phthalate Esters/GC	EPA 8060									5	1Lx2/4 oz.	4° C
Organochlor. Pest./PCB/GC	EPA 8080									5	1Lx2/4 oz.	4° C
Org. Pest./PCB/GC - Cap.	EPA 8081									6	1Lx2/4 oz.	4° C
Chlor. Herb./GC	EPA 8150									5	40 ml x 2/4 oz.	4° C
VOC/GCMS - Cap.	EPA 8260	X		X						8	40 ml x 2/4 oz.	HCl to pH < 2/4° C
Semivol. Org./GCMS - Cap.	EPA 8270									16	1Lx3/4 oz.	4° C
Semivol. Org./GCMS - Cap.	EPA 8270A	X	Base only	X	Base only					10	1Lx3/4 oz.	4° C
<b>GROUP PARAMETERS</b> by Method Name	METHOD #	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	X	Bottle ID #'s	Diluting Units	Containers Required (L/S)	Preservative(s) Used (Liquids)
HW Characterization (complete)	EPA SW-846									50	See below	See below
Ignitability (Flashpoint)	EPA 1010									1	250ml/4 oz.	4° C
Reactivity (Cyanide & Sulfide)	SW 846									3	1L/4 oz.	4° C
Corrosivity (pH)	EPA 9040 or 9045									1	250ml/4 oz.	4° C
Toxicity (TCLP) complete	EPA SW-846									47	See below	See below
Non Volatile TCLP Extraction	EPA 1311									4	40 mlx3/4 oz.	4° C
ZINC TCLP Extraction	EPA 1311									5	1Lx4/32 oz.	HCl to pH < 2/4° C
TCLP Acid Extractables	EPA 8270									8	1L/4 oz.	4° C
TCLP D/N Extractables	EPA 8270									8	1L/4 oz.	4° C
TCLP Pesticides	EPA 8080									5	1L/4 oz.	4° C
TCLP Herbicides	EPA 8150									5	1L/4 oz.	4° C
TCLP Volatiles	EPA 8260									8	40 mlx3/4 oz.	HCl to pH < 2/4° C
TCLP Metals (8)	EPA SW-846									6	500 ml/4 oz.	HNO <sub>3</sub> to pH < 2
Priority Pollutants (complete)	EPA SW-846									39	See below	See below
PP Acid Extractables	EPA 8270									8	1L/4 oz.	4° C
PP D/N Extractables	EPA 8270									8	1L/4 oz.	4° C
PP Pesticides	EPA 8080									5	1L/4 oz.	4° C
PP Volatiles	EPA 8260									8	40 mlx3/4 oz.	HCl to pH < 2/4° C
PP Metals (13)	EPA SW-846									8	500 ml/4 oz.	1 HNO <sub>3</sub> to pH < 2
PP Cyanide & Phenol	EPA 600									2	1Lx2/4 oz.	NaOH/H <sub>2</sub> SO <sub>4</sub> /None
F001 - F005 Solvents	EPA SW-846									24	1Lx2&40mlx3/16 oz.	HNO <sub>3</sub> to pH < 2
PCMA Metals (8)	EPA SW-846									6	500 ml/4 oz.	HNO <sub>3</sub> to pH < 2
PCDs in Oil	EPA 8080									2	40 ml	4° C
Other:												

Comments:

IPH sent to ATZ when they sampled it.

Relinquished by: John Fitzgerald  
 Date/Time: 1-3-95 1250

Received by: J. Moore  
 Date/Time: 1-3-95

1250

Analysis Report

Analysis: TOTAL PETROLEUM HYDROCARBONS (418.1)

Accession: 501023  
Client: NAS, CO, PWC  
Project Number: 9012  
Project Name: N/S  
Project Location: NAS MCDONALDS  
Department: SEMI-VOLATILE FUELS

"FINAL REPORT FORMAT - SINGLE"

Accession: 501023  
Client: NAS, CO, PWC  
Project Number: 9012  
Project Name: N/S  
Project Location: NAS MCDONALDS  
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:	03-JAN-95 1220
Client Sample Id:	B-5 MW-6-MCDONALDS	Received Date:	03-JAN-95
Batch: TPW370		Extraction Date:	04-JAN-95
Blank: A	Dry Weight %: N/A	Analysis Date:	05-JAN-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL PETROLEUM HYDROCARBON	MG/L	9	1	
ANALYST	INITIALS	MV		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 501023  
Client: NAS, CO, PWC  
Project Number: 9012  
Project Name: N/S  
Project Location: NAS MCDONALDS  
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: WATER  
QC Level: I

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Lab Id:	002	Sample Date/Time:	03-JAN-95 1210
Client Sample Id:	B-6 EQUIPMENT BLANK	Received Date:	03-JAN-95
Batch: TPW370		Extraction Date:	04-JAN-95
Blank: A	Dry Weight %: N/A	Analysis Date:	05-JAN-95

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

Comments: