

N61165.AR.005295
CNC CHARLESTON
5090.3a

SECOND QUARTER 2001 MONITORING REPORT RECEIVED 9 JULY 2001 FOR ZONE G
FUEL DISTRIBUTION SYSTEM (FDS) AREAS 12 THRU 14 WITH SOUTH CAROLINA
DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL REVIEW LETTER CNC
CHARLESTON SC
07/10/2001
CH2M JONES LLC



10 July 2001

2600 Bull Street
Columbia, SC 29201-1708

COMMISSIONER:
Douglas E. Bryant

BOARD:
Bradford W. Wyche
Chairman

William M. Hull, Jr., MD
Vice Chairman

Mark B. Kent
Secretary

Howard L. Brilliant, MD

Brian K. Smith

Rodney L. Grandy

Larry R. Chewning, Jr., DMD

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FEC
GABRIEL MAGWOOD
P.O. BOX 190010
N. CHARLESTON SC 29419-9010

Re: Zone G, Fuel Distribution System (FDS), Areas 12-14
Site Identification # 01186
Second Quarter 2001 Monitoring Report received 9 July 2001
Charleston County

Dear Mr. Magwood:

The Department has completed technical review of the referenced document. Interpretation of the analytical data provided in the referenced report indicates that chemicals of concern remain below established Risk-Based Screening Levels and MCLs. The Department concurs with the conclusions as presented in the report and routine groundwater monitoring and reporting should continue as prescribed in the Corrective Action Plan dated April 2001.

Should you have any questions, please contact me at 803-898-3553 (office phone), 803-898-3795 (fax) or bishopma@columb32.dhec.state.sc.us.

Sincerely,

Michael Bishop, Hydrogeologist
Groundwater Quality Section
Bureau of Water

cc: Trident District EQC
Paul Bergstrand - SCDHEC BLWM
Brian Crawford, Charleston Naval Complex, 1848 Ave. F, N. Charleston, SC 29405
Technical File

**Second Quarter 2001 Monitoring Report
Zone G, Fuel Distribution System (FDS); Areas 12-14
Charleston Naval Complex
North Charleston, South Carolina
SCDHEC NO. 01186**

Prepared by:

**CH2M-Jones, LLC.
Charleston Naval Complex
1849 Avenue F
North Charleston, South Carolina 29405
July 2001**

Prepared For:

**Southern Division Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010**

RECEIVED

**JUL 9 2001
Water Monitoring Assessment &
Protection Division**

Table of Contents
FDS Areas 12-14
Charleston Naval Complex
North Charleston, South Carolina

Section	Title	Page #
1.0	Introduction	1-1
1.1	Background	1-1
1.2	General Site Description	1-1
1.3	GW Monitoring Results Second Quarter	1-1
1.4	Conclusion	1-2
2.0	Tables	2-1
2.1	Summary of GW Analyses (June 2001)	2-1
3.0	Figures	3-1
3.1	Map of Charleston Naval Complex	3-1
3.2	Site Location	3-2
3.3	Sample Locations	3-3
4.0	Field Notes	4-1
4.1	GW Sampling Forms (June 2001)	4-1
5.0	Attachments	5-1
5.1	Analytical Results (June 2001)	5-1

1.0 INTRODUCTION

1.1 Background

The Charleston Naval Complex is located on the banks of the Cooper River in Charleston County, South Carolina, and lies within the corporate boundaries of the city of North Charleston, approximately 5 miles north of the city of Charleston. The Complex is bounded on the east by the Cooper River and on the north, south, and west by the city of North Charleston.

1.2 General Site Description

The CNC is located in the city of North Charleston, on the west bank of the Cooper River in Charleston County, South Carolina as shown in Figure 1. This installation consists of two major areas: an undeveloped dredge materials area on the east bank of the Cooper River on Daniel Island in Berkley County, and a developed area on the west bank of the Cooper River. The developed portion of the base is on the peninsula bounded on the west by the Ashley River and on the east by the Cooper River. The site is located within the developed portion of the base (Tetra Tech, NUS [TTNUS], 2000).

A Corrective Action Plan (CAP) was completed and approved in April of 2001, which presented a plan to monitor the groundwater from existing monitoring wells for up to a period six months. The CAP stated that if after two rounds of quarterly sampling analytical data shows that there are no contamination in the areas above the RBSLs; CH2M-Jones, LLC may request to the department a No Further Action. If groundwater analytical results indicate that levels of contaminants are above the RBSLs, active remediation may be recommended .

1.3 Groundwater monitoring results- Second Quarter (June 2001)

Groundwater samples were collected from groundwater monitoring wells FDS14B, FDS13B, and FDS13C by CH2M-Jones, LLC on May 23, 2001 (Second Quarter 2001). In addition to VOCs one trip blank and one equipment blank were collected for quality assurance. Groundwater samples were analyzed by a certified Laboratory (see figure 3-3 for sample locations).

Laboratory analytical results for monitoring wells FDS14B, FDS13B, and FDS13C are shown in Table 2-1.

Groundwater samples were all below the detection limits for VOCs. The results illustrate that there are no contaminants in the groundwater at this time.

1.5 Conclusion

The first quarter 2001 analytical results were below the detection limit for VOCs. Analytical results present no evidence that COC's have leached into the groundwater. CH2M-Jones, LLC recommends another round of groundwater sampling in the third quarter of 2001 (September 2001) in order to provide additional information on groundwater activities.

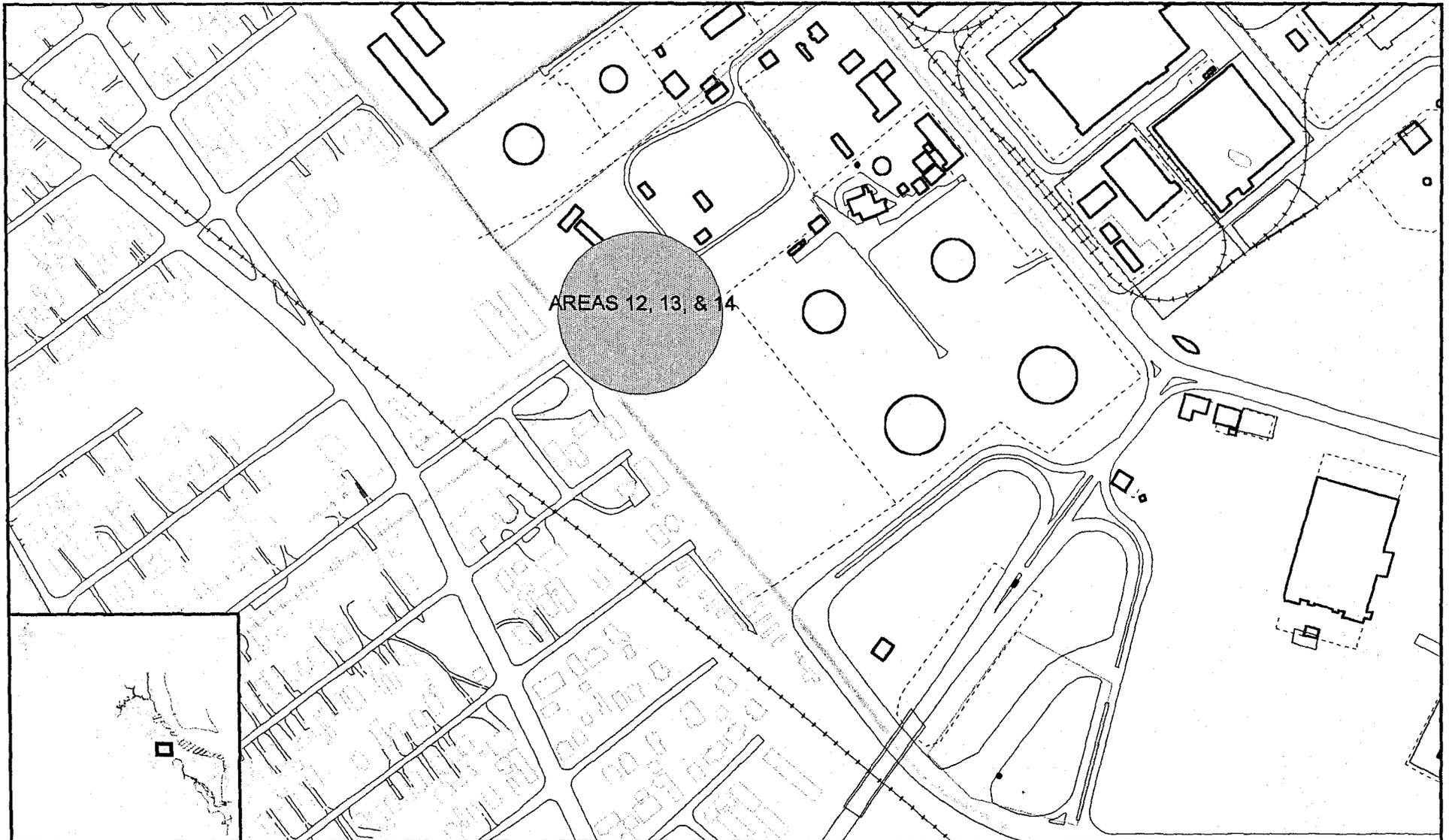
TABLES

Table 2.1
Summary of Groundwater Laboratory Analyses
Second Quarter 2001
Zone G FDS Area 12-14
Charleston Naval Complex
North Charleston, South Carolina

Parameters	FDS14B	FDS13B	FDS13C
VOCs	BDL	BDL	BDL

NS= Not Sampled
BDL= Below Detection Limits
BRL= Below Reporting Limits

FIGURES



AREAS 12, 13, & 14

- | | | | |
|--|------------------|--|---------------|
| | Fence | | AOC Boundary |
| | Railroads | | SWMU Boundary |
| | Roads - Lines | | Buildings |
| | Bridges | | Zone Boundary |
| | Surrounding Area | | |
| | Shoreline | | |

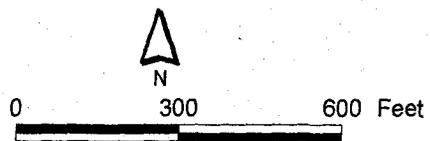


Figure 1
 Site Location Map
 Zone G
 Charleston Naval Complex

CH2MHILL



- | | |
|---|---|
| <ul style="list-style-type: none"> ∨ DRAIN-LABEL ∨ DRAIN-BASIN ∨ DRAIN-LINE ∨ STORM-OUTFALL-ID ∨ STORM-LINE/MANHOLE ∨ STORM-LINE/MANHOLE-NS | <ul style="list-style-type: none"> ∨ STORM-FLOW-ARROW ∨ SEWER-LINE/MANHOLE-NS ∨ SEWER-LINE/MANHOLE ∨ SEWER-FLOW-ARROW |
|---|---|

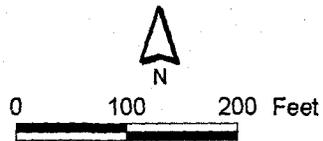
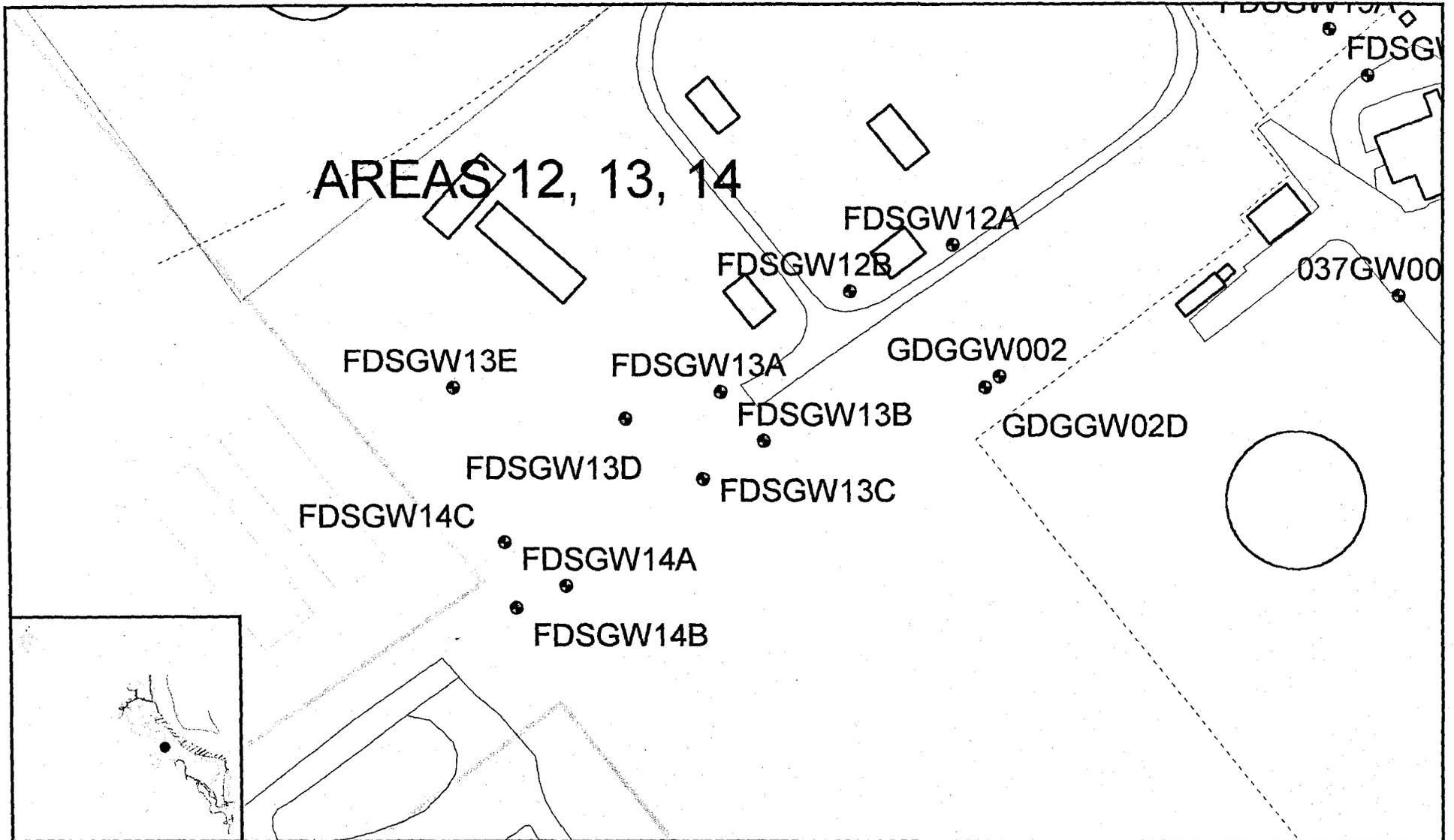


Figure 2
 Site Vicinity Map
 Zone G; Areas 12-14
 Charleston Naval Complex

CH2MHILL



AREAS 12, 13, 14

- Groundwater Well
- ∩ Shoreline
- ∩ Fence
- ∩ Railroads
- ∩ Roads - Lines
- ∩ Bridges
- ∩ Surrounding Area

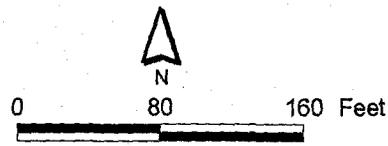


Figure 3
 Groudwater Well Location
 Zone G
 Charleston Naval Complex

CH2MHILL

FIELD NOTES

Zone G FDS Area 12-14

LOCATION: CNC, Zone G FDS Area 12-14				DATE: 06/07/01			
JOB No: 093				WELL No: FDSGW13B			
PROJECT NAME: Charleston Naval Complex							
WELL No: FDSGW13B							
WEATHER CONDITIONS: Partly Cloudy and 70°							
REVIEWED BY: BRC							
PURGING DEVICE				SAMPLING DEVICE			
TYPE DEVICE: P. Pump				TYPE DEVICE: P. Pump			
WHICH WELL WAS PREVIOUSLY PURGED? na							
INITIAL WELL VOLUME				PURGING			
WELL DIAMETER: 2"				START: 0850			
TYPE: Flush Mount				STOP: 0920			
DEPTH TO BOTTOM OF WELL: 16.17				VOLUME PURGED: 6.0 gallons			
DEPTH TO WATER SURFACE: 4.29				COMMENTS:			
LENGTH OF WATER: 11.88				COMPLETION: yes			
VOLUME OF WATER (1WV): 1.92				SAMPLE COLLECTED: 0930			
3 VOLUMES OF WATER (3WV): 5.7							
IN SUTU TESTING							
TIME:	WELL VOLUME PURGED	pH	CONDUCTIVITY	TURBIDITY	DO	WATER TEMP.	ORP
0900	1WV	6.57	0.86	-10.0	0.8	22.4	-158
0910	2WV	6.61	0.76	-10.0	0.4	22.2	-169
0920	3WV	6.62	0.99	-10.0	0.4	21.3	-168

Zone G FDS Area 12-14

LOCATION: CNC, Zone G FDS Area 12-14		DATE: 06/07/01					
JOB No: 093		WELL No: FDSGW14B					
PROJECT NAME: Charleston Naval Complex							
WELL No: FDSGW14B							
WEATHER CONDITIONS: Partly Cloudy and 70°							
REVIEWED BY: BRC							
PURGING DEVICE		SAMPLING DEVICE					
TYPE DEVICE: P. Pump		TYPE DEVICE: P. Pump					
WHICH WELL WAS PREVIOUSLY PURGED? 13C							
INITIAL WELL VOLUME		PURGING					
WELL DIAMETER: 2"		START: 1045					
TYPE: Flush Mount		STOP: 1115					
DEPTH TO BOTTOM OF WELL: 16.25		VOLUME PURGED: 6.0 gallons					
DEPTH TO WATER SURFACE: 4.10		COMMENTS:					
LENGTH OF WATER: 12.15		COMPLETION: yes					
VOLUME OF WATER (1WV):		SAMPLE COLLECTED: 1120					
3 VOLUMES OF WATER (3WV):							
IN SUTU TESTING							
TIME:	WELL VOLUME PURGED	pH	CONDUCTIVITY	TURBIDITY	DO	WATER TEMP.	ORP
1055	1WV	6.73	0.72	-10.0	0.4	22.0	-162
1105	2WV	6.74	0.71	-10.0	0.3	21.0	-168
1115	3WV	6.69	0.73	-10.0	0.2	21.1	-165

ANALYTICAL RESULTS

Laboratory: GEL, Charleston, SC		Project Name: Charleston Navy Complex		Site Name: Zone G, FDS Area 12-14															
Project Number:		TAT: 21 day		Level: Level 3															
Project Manager: Gary Foster/ATL/CCI		Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605		Address: ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278															
Send Report To: see 2nd page of COC		EDD: CNC format																	
Sample ID	Station ID	Depth		Date & Time Collected	Matrix	# of containers	3 - 40 ml vial, HCl	1 - 250 ml HDPE	VOCs (SW6260)	pH (E150.1)									Comments
		Begin	End																
FDSGW14BLA	GFDSGW14B			6-7-01/1120	WG	4	X	X	X	X									43559 001
FDSGW13BLA	GFDSGW13B			6-7-01/930	WG	4	X	X	X	X									002
FDSGW13CLA	GFDSGW13C			6-7-01/1030	WG	4	X	X	X	X									003
FDSEW13CLA	GFDSEW13C			6-7-01/1130	WG	4	X	X	X	X									EB 4 bottles
FDSTW13CLA	GFDSTW13C			Lab supplied	WG	3	X												TB 005

GEL1901002 1-27

Sampled By Chris Blundy Date/Time 6-7-01/830 Relinquished by: Chris Blundy Date/Time 6-7-01
 Additional Samplers: [Signature]
 Received By Lab: [Signature] Date/Time 6/7/01 1754 Relinquished by: _____ Date/Time _____

**SAMPLE
DATA**

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSEW13CLA

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43559

Matrix: (soil/water) WATER Lab Sample ID: 43559004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N211

Level: (low/med) LOW Date Received: 06/07/01

% Moisture: not dec. _____ Date Analyzed: 06/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	5.0	U
108-88-3	Toluene	5.0	U
100-41-4	Ethylbenzene	5.0	U
	m,p-Xylenes	5.0	U
95-47-6	o-Xylene	5.0	U
1330-20-7	Xylenes (total)	5.0	U
91-20-3	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW13BLA

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43559

Matrix: (soil/water) WATER Lab Sample ID: 43559002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N209

Level: (low/med) LOW Date Received: 06/07/01

% Moisture: not dec. _____ Date Analyzed: 06/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	5.0	U
108-88-3-----	Toluene	0.23	JB
100-41-4-----	Ethylbenzene	5.0	U
-----	m,p-Xylenes	5.0	U
95-47-6-----	o-Xylene	5.0	U
1330-20-7-----	Xylenes (total)	5.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW13CLA

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43559

Matrix: (soil/water) WATER Lab Sample ID: 43559003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N210

Level: (low/med) LOW Date Received: 06/07/01

% Moisture: not dec. _____ Date Analyzed: 06/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	5.0	U
108-88-3-----	Toluene	5.0	U
100-41-4-----	Ethylbenzene	5.0	U
-----	m,p-Xylenes	5.0	U
95-47-6-----	o-Xylene	5.0	U
1330-20-7-----	Xylenes (total)	5.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSGW14BLA

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43559

Matrix: (soil/water) WATER Lab Sample ID: 43559001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N208

Level: (low/med) LOW Date Received: 06/07/01

% Moisture: not dec. _____ Date Analyzed: 06/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q
---------	----------	------	---

71-43-2-----	Benzene	5.0	U
108-88-3-----	Toluene	0.29	JB
100-41-4-----	Ethylbenzene	5.0	U
-----	m,p-Xylenes	5.0	U
95-47-6-----	o-Xylene	5.0	U
1330-20-7-----	Xylenes (total)	5.0	U
91-20-3-----	Naphthalene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FDSTW13CLA

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43559

Matrix: (soil/water) WATER Lab Sample ID: 43559005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N207

Level: (low/med) LOW Date Received: 06/07/01

% Moisture: not dec. _____ Date Analyzed: 06/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

71-43-2-----	Benzene	5.0	U
108-88-3-----	Toluene	5.0	U
100-41-4-----	Ethylbenzene	5.0	U
-----	m, p-Xylenes	5.0	U
95-47-6-----	o-Xylene	5.0	U
1330-20-7-----	Xylenes (total)	5.0	U
91-20-3-----	Naphthalene	1.0	U