M00146.AR.005734
MCAS CHERRY POINT
5090.3a

DRAFT REQUEST FOR NO FURTHER ACTION STATUS AT UNDERGROUND STORAGE TANK 487 WITH TRANSMITTAL MCAS CHERRY POINT NC
7/24/2000
LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

LAW CATLIN

ENVIRONMENTAL AND ENGINEERING CONSULTANTS

RALEIGH, N.C.
WILMINGTON, N.C.

DRAFT

REQUEST FOR "NO FURTHER ACTION" STATUS

MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA

UST 487

July 24, 2000

Contract Number: N62470-95-D-6009
Delivery Order Number: 0084
LAW Job No. 30740-6-0600-0084

Law Engineering and Environmental Services, Inc.
3301 Atlantic Avenue
Raleigh, NC 27604

July 24, 2000

Commander
LANTNAVFACENGCOM
1510 Gilbert Street
Norfolk, Virginia 23511-2699

DRAFT

Attention: John Kresky, Code 18215

Subject: **Transmittal of Request for "No Further Action" Status**
UST 487 Site
Marine Corps Air Station
Cherry Point, North Carolina
Navy Contract Number N62470-95-D-6009
Delivery Order Number: 0084
Law Job Number: 30740-6-0600/0084

Dear Mr. Kresky:

In accordance with Naval Facilities Engineering Command Order for Supplies and Services Contract No. N62470-95-D-6009, Delivery Order Number 0084 dated May 25, 2000, Law Engineering and Environmental Services, Inc. (LAW) is pleased to provide this request for "No Further Action" compiled for the above referenced project site. The objective of our services was to provide the necessary information to enable the State to assign the project site no further action status.

This report is intended for the exclusive use of Naval Facilities Engineering Command, Atlantic Division. The contents should not be relied upon by any other parties without the expressed written consent of LAW. The findings are relevant to the dates of our site work and should not be relied upon to represent site conditions on other dates.

We appreciate the opportunity to provide environmental services on this project. If any questions arise, please contact us at (919) 876-0416.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Jeffrey A. Mann
Project Engineer

Brian J. Bellis, L.G.
Principal Hydrogeologist

cc: Mr. John Myers, Marine Corps Air Station, Cherry Point
Mr. Chris Foskey, LANTNAVFACENGOM (cover letter only)
Michael E. Mason, Richard Catlin and Associates, Inc. (cover letter only)

TABLE OF CONTENTS

1.0 INTRODUCTION

Site Name: UST 487

Location: Marine Corps Air Station, Cherry Point, North Carolina

Latitude: N 34° 56.49'

Longitude: W 76° 52.83'

Incident Number:	Not Assigned
Responsible party:	Marine Corps Air Station, Cherry Point
Contact:	John Myers
Address:	EAD Department MAS, PSC Box 8006, Cherry Point, North Carolina 28533
Telephone Number:	252-466-4903
Environmental Consultant:	Law Engineering and Environmental Services, Inc.
Contact:	Brian Bellis
Address:	3301 Atlantic Ave Raleigh, North Carolina 27604
Telephone Number:	919-876-0416

2.0 BACKGROUND

Contaminant type:	No. 2 Fuel Oil
Source:	10,000-gallon capacity UST
Quantity released:	Unknown
Date of release discovery:	February 1993
Cause of release:	Uncertain

Initial abatement/remedial actions: Remaining product was removed from the UST and the tank was abandoned in place.

List of reports for work conducted at site:

REPORT NO.	REPORT TITLE	AUTHOR	DATE
1	Three Well Plus On Additional Well Site Check Report	Groundwater Technology, Inc.	February 12, 1993
2	Quarterly Sampling Report	Groundwater Technology, Inc.	July 21, 1993
3	Quarterly Sampling Report	Law Engineering, Inc.	February 14, 1994
4	Tank Closure Report	Superior Industrial Maintenance Company, Inc.	March 21, 1994
5	Second Quarterly Sampling Report	Law Engineering, Inc.	March 28, 1994
6	Fourth Quarterly Sampling Report	Law Engineering, Inc.	June 28, 1994
7	Fifth Quarterly Sampling Report	Law Engineering, Inc.	November 23, 1994
8	Sixth Quarterly Sampling Report	Law Engineering, Inc.	February13, 1995
9	Strategy Letter: UST 487	Richard Catlin & Associates	April 7, 1995
10	Seventh Quarterly Sampling Report	Law Engineering, Inc.	July 6, 1995
11	Eighth Quarterly Sampling Report	Law Engineering, Inc.	September 20, 1995
12	Report of Limited Soil Assessment / Risk Based Rules Evaluation: UST 160, Tank 491, Building 498 and Tank 487	Law Engineering and Environmental Services, Inc.	June 2, 1999

3.0 SECONDARY CONTAMINANT SOURCES

Free Product

Free product has not been detected at the project site.

Vadose Zone Soil

Analysis of soil samples collected during the installation of the four site check monitoring wells in 1993 did not reveal the presence of volatile or semi-volatile total petroleum hydrocarbons according to EPA preparation/testing methods 5030/8015 and 3550/8015, respectively (Report No. 1 above).

On May 4, 1999, LAW advanced three hand auger borings (63SB01, 63SB02 and 63SB03) adjacent to three sides of UST 487, which was abandoned in place (see Figure 3.4 in Appendix A). A boring along the fourth side of the abandoned UST was not advanced due to the proximity of UST 487 to Building 487. The three soil samples were tested for volatile and semi-volatile organic compounds according to EPA methods 8260 and 8270, respectively, and for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) using the Massachusetts Department of Environmental Protection (MADEP) method. Laboratory results are summarized in the table on the following page. The laboratory test reports and chain of custody records are contained in Appendix B.

UST 487
SUMMARY OF 1999 LABORATORY RESULTS – SOIL SAMPLES
EPA METHODS 8260 AND 8270 AND MADEP EPH AND VPH
CHERRY POINT, NORTH CAROLINA

ANALYSIS/ANALYTE	ANALYTICAL TEST RESULTS (mg/kg)			RESIDENTIAL MSCC (mg/kg)	INDUSTRIAL/ COMMERCIAL MSCC (mg/kg)
	63SB01 @ 3'-4'	63SB02 @ 3'-4'	63SB03 @ 3'-4'		
EPA Method 8260	NCD	NCD	NCD	NA	NA
EPA Method 8270	NCD	NCD	NCD	NA	NA
C5-C8 (VPH)	ND	ND	ND	939	24528
C9-C18 (VPH/EPH) (1)	4053.5	ND	ND	9386	245280
C9-C22 (VPH/EPH) (2)	443.9	ND	ND	469	12264
C19-C36 (EPH)	451.6	ND	ND	93860	None (Immobile)

NCD = No Constituents Detected for this test method at or above laboratory method detection limits.
NA = Not Applicable.
ND = Not Detected at or above laboratory method detection limit.
MSCC = Maximum Soil Contaminant Concentration
(1) = In accordance with NCDENR memo dated March 26, 1998 C9-C18 = (C9-C12 + C9-C18)
(2) = In accordance with NCDENR memo dated March 26, 1998 C9-C22 = (C9-C10 + C11-C22)

Volatile and semi-volatile organic compounds and EPH hydrocarbon chains were not detected in any of the three soil samples. VPH-range hydrocarbon chains were identified in the soil sample obtained from boring 63SB01. However, the concentrations detected are below their respective Residential and Commercial/Industrial MSCCs as listed in Table 4 of the Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater, Volume II, Petroleum Underground Storage Tanks dated January 2, 1998 (the Guidelines).

4.0 RISK CHARACTERIZATION

Has the discharge or release contaminated any water supply well including any used for non-drinking purposes? If yes, explain.

No.

Is a water supply well used for drinking water located within 1000 feet of the source area of the discharge or release?

No.

Is a water supply well used for any purpose (e.g. irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release or discharge?

No.

Does groundwater within 500 feet of the source area of the discharge or the release have the potential for future use in that there is no other source of water supply other than groundwater? Explain.

The site and the surrounding 500 feet from the site are part of the Marine Corps Air Station. The Marine Corps controls the use of natural resources, including groundwater, in these areas. The Marine Corps is aware of the groundwater quality issues associated with the site and will not address future water supply demands by accessing groundwater within 500 feet of the release site.

Do vapors from the discharge or release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety, or the environment? If yes, explain.

No. Although UST 487 is located proximal to a staircase which leads to the basement of Building 487, analytical results for soil samples collected adjacent to the tank did not indicate the presence of detectable concentrations of volatile or semi-volatile organic compounds, and the detected concentrations of VPH hydrocarbon chains were below residential MSCCs. Additionally, UST 487 has been abandoned in place for more than six years. According to Marine Corps Air Station environmental personnel, complaints or reports of petroleum vapors in the basement of Building 487 have not been received.

Are there any other factors that would cause the discharge or release to pose an imminent danger to public health, public safety, or the environment? If yes, explain.

Other factors that would cause the release to pose an imminent danger to public health, public safety or the environment have not been identified.

Is a surface water body located within 500 feet of the source area of the discharge or release? If yes, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B .0200 by a factor of 10?

No.

Is the source area of the discharge or release located within a designated wellhead protection area as defined in 42 USC 300h-7(e)? If yes, explain.

Based on a July 11, 2000 telephone conversation with Willie Hardison of the Washington Regional Office of the Division of Water Quality, wellhead protection areas defined by 42 USC 300h-7(e) have not, as of this time, been designated in Craven County.

Is the discharge or release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? If yes, is the source area of the discharge or release located in an area in which there is a recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? If yes, explain.

The release area is located in the Coastal Plain physiographic region of North Carolina. The release is located in an area where recharge to a deeper aquifer that is used as a drinking water source may occur. However, the fine-grained sediments encountered at the Marine Corps Air Station tend to impede the vertical migration of groundwater, hence limiting recharge to deeper aquifers, and are the primary reason

for the shallow water-table depth observed at the site. Additionally, we did not identify the existence of water supply wells within 1,500 feet of the subject site.

Do the levels of groundwater contamination for any contaminant exceed the gross contaminant levels established (see Table 7) by the Department?

Summaries of past groundwater analysis results obtained during the eight quarterly monitoring events referenced in section 2.0 are attached. The highest concentrations of petroleum-related compounds detected during the eighth quarterly monitoring event occurred in the sample from well 63GW04. These constituents, the detected concentrations and their respective gross contaminant levels (GCLs) are summarized below:

Petroleum Constituent	Concentration (ug/L)	GCL (ug/L)
Acenapthene	9.85	2,120
Benzo(k)fluoranthene	2.95	0.47
Fluoranthene	0.60	280
Fluorene	4.80	950
1-Methylnapthalene	6.33	Not Established
2-Methylnapthalene	1.79	12,500
Napthalene	94.2	15,500

The compound benzo(k)fluoranthene had not been detected in any of the four monitoring wells during the previous six quarterly monitoring events where the samples were tested for semi-volatile organic compounds. The sudden appearance of this compound within the samples, and its presence as the lone detected constituent in the sample from upgradient well 63GW02 suggests that the reported concentrations may be the result of inadvertent sample contamination either in the field or laboratory, or laboratory error.

Additionally, because the above referenced groundwater monitoring was conducted prior to January 2, 1998, groundwater samples collected from the four site monitoring wells were not analyzed by the MADEP VPH and EPH methods. However, at this time, North Carolina has not established gross contaminant levels for the hydrocarbon chains identified through VPH and EPH analyses.

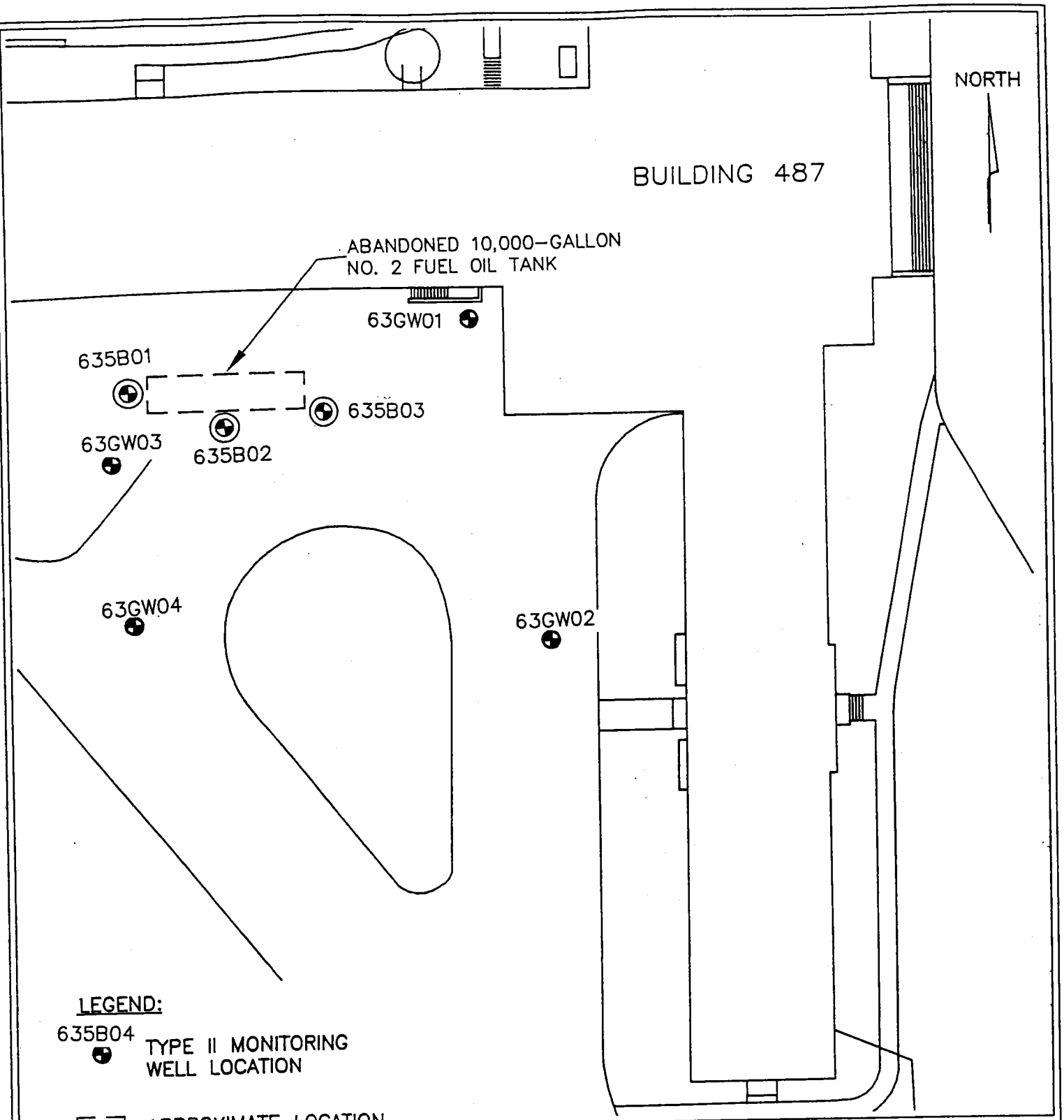
5.0 CONCLUSION

The information summarized above demonstrates that secondary sources of hydrocarbon contamination (free product and vadose zone soil contamination) are not present at the site. In addition, the responses to the ten site characterization questions illustrate that the UST 487 site should be considered a low priority site as defined by the Department.

Given these circumstances, Marine Corps Air Station Cherry Point requests that the UST 487 site be assigned "No Further Action" status.

APPENDIX A

SOIL BORING AND MONITORING WELL LOCATIONS



LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

MONITORING WELL LOCATION MAP

TANK 487

MARINE CORPS AIR STATION

CHERRY POINT, NORTH CAROLINA

DRAWN: KRT	DATE: MAY 1999
DFT CHECK: BTS	SCALE: 1"=20'
ENG CHECK: JAM	JOB: 30740-6-0600
APPROVAL: DW	DWG: FIGURE 3.4

REFERENCE: MASTER SHORE STATION DEVELOPMENT PLAN, AREA 32 AND SURVEY DATA FROM GTI REPORT, FEB. 1993.

APPENDIX B

LABORATORY REPORTS FOR RISK CHARACTERIZATION SOIL TESTING

GeoChem, Incorporated

Environmental Laboratories

Certified Analytical Laboratory

NC # 37745 ,NC # 336, NC # 461, EPA ID # 155

Client Project Manager
ff Tyburski
Site Name:
8 and 487
740-6-0600

Law Engineering
3301 Atlantic Avenue
Raleigh NC
27604

Report Date
Tuesday, May 18, 1999
PO #
Date Received in lab:
Wednesday, May 05, 1999

GCI Project #: 9905-006

Summary of requested analytical work

Sample type code #s :	*1 = solid samples;*	*2 = liquid samples;*	*3 = Air samples;*	*4 = sludges/unknowns*
Field Number: 735B11	*Lab ID* 1183	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B11	*Lab ID* 1183	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B11	*Lab ID* 1183	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B01	*Lab ID* 1184	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B01	*Lab ID* 1184	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B01	*Lab ID* 1184	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B01	*Lab ID* 1184	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B02	*Lab ID* 1185	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B02	*Lab ID* 1185	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes

Kevin Bell

Here by certify that I have Reviewed and approve this data set

2500 Gate Way Centre Blvd., Suite 300 • Morrisville, NC 27560
Telephone: 919-460-8093 • FAX: 919-460-0167

GeoChem, Incorporated

Environmental Laboratories

Certified Analytical Laboratory

NC # 37745 ,NC # 336, NC # 461, EPA ID # 155

ient Project Manager
ff Tyburski
Site Name:
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Summary of requested analytical work

Sample type code #s :	*1 = solid samples;*	*2 = liquid samples;*	*3 = Air samples;*	*4 = sludges/unknowns*
Field Number: 635B02	*Lab ID* 1185	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B02	*Lab ID* 1185	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B03	*Lab ID* 1186	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 35B03	*Lab ID* 1186	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B03	*Lab ID* 1186	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 635B03	*Lab ID* 1186	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes

Here by certify that I have Reviewed and approve this data set

2500 Gate Way Centre Blvd., Suite 300 • Morrisville, NC 27560
Telephone: 919-460-8093 • FAX: 919-460-0167

GeoChem Incorporated Certified Analytical Laboratory

te Name:
498 and 487

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, May 18, 1999

GCI Project # 9905-006

Field ID 735B10 *Date Analyzed: 5/5/99*
Lab ID 1181
8260 soil

	Conc. in ug/kg		*lowest detection on sample* PQL in ug/kg	Dilution Factor
	Dry wt %	83.0		
MTBE	BDL		5.0	1.0
IPE	BDL		5.0	1.0
n-Butylbenzene	BDL		5.0	1.0
Dichlorodifluoromethane	BDL		9.9	1.0
Chloromethane	BDL		9.9	1.0
Vinyl Chloride	BDL		5.0	1.0
Bromomethane	BDL		9.9	1.0
Chloroethane	BDL		9.9	1.0
Trichlorofluoromethane	BDL		9.9	1.0
Acrolein	BDL		99.2	1.0
Acetone	BDL		49.6	1.0
1,1-Dichloroethene	BDL		5.0	1.0
Iodomethane	BDL		5.0	1.0
Carbon Disulfide	BDL		5.0	1.0
Methylene Chloride	BDL		5.0	1.0
Acrylonitrile	BDL		5.0	1.0
trans-1,2-Dichloroethene	BDL		5.0	1.0
1,1-Dichloroethane	BDL		5.0	1.0
Vinyl Acetate	BDL		9.9	1.0
2,2-Dichloropropane	BDL		5.0	1.0
cis-1,2-Dichloroethene	BDL		5.0	1.0
2-Butanone	BDL		49.6	1.0
Bromochloromethane	BDL		5.0	1.0
Chloroform	BDL		5.0	1.0
1,1,1-Trichloroethane	BDL		5.0	1.0
1,1-Dichloropropene	BDL		5.0	1.0
Carbon Tetrachloride	BDL		5.0	1.0
Benzene	BDL		5.0	1.0
1,2-Dichloroethane	BDL		5.0	1.0
Trichloroethene	BDL		5.0	1.0
1,2-Dichloropropane	BDL		5.0	1.0
Dibromomethane	BDL		5.0	1.0
Bromodichloromethane	BDL		5.0	1.0
2-Chloroethylvinylether	BDL		9.9	1.0
cis-1,3-Dichloropropene	BDL		5.0	1.0
4-Methyl-2-pentanone	BDL		49.6	1.0
Toluene	BDL		5.0	1.0
trans-1,3-Dichloropropene	BDL		5.0	1.0
1,1,2-Trichloroethane	BDL		5.0	1.0
Ethylmethacrylate	BDL		5.0	1.0
Tetrachloroethene	BDL		5.0	1.0

GCI Project # 9905-006

		Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
	1,3-Dichloropropane	BDL	5.0	1.0
	2-Hexanone	BDL	49.6	1.0
	Chlorodibromomethane	BDL	5.0	1.0
	1,2-Dibromoethane	BDL	5.0	1.0
	Chlorobenzene	BDL	5.0	1.0
	1,1,1,2-Tetrachloroethane	BDL	5.0	1.0
	Ethylbenzene	BDL	5.0	1.0
	m,p-Xylene	BDL	5.0	1.0
	o-Xylene	BDL	5.0	1.0
	Styrene	BDL	5.0	1.0
	Bromoform	BDL	5.0	1.0
	Isopropylbenzene	BDL	5.0	1.0
	Bromobenzene	BDL	5.0	1.0
	1,2,3-Trichloropropane	BDL	9.9	1.0
	1,1,2,2-Tetrachloroethane	BDL	5.0	1.0
	n-Propylbenzene	BDL	5.0	1.0
	2-Chlorotoluene	BDL	5.0	1.0
	1,4-Dichloro-2-butene	BDL	9.9	1.0
	4-Chlorotoluene	BDL	5.0	1.0
	1,3,5-Trimethylbenzene	BDL	5.0	1.0
	tert-Butylbenzene	BDL	5.0	1.0
	1,2,4-Trimethylbenzene	BDL	5.0	1.0
	sec-Butylbenzene	BDL	5.0	1.0
	1,3-Dichlorobenzene	BDL	5.0	1.0
	1,4-Dichlorobenzene	BDL	5.0	1.0
	4-Isopropyltoluene	BDL	5.0	1.0
	1,2-Dichlorobenzene	BDL	5.0	1.0
	1,2-Dibromo-3-chloropropan	BDL	5.0	1.0
	1,2,4-Trichlorobenzene	BDL	5.0	1.0
	Naphthalene	BDL	5.0	1.0
	Hexachlorobutadiene	BDL	5.0	1.0
	1,2,3-Trichlorobenzene	BDL	5.0	1.0
	End of 8260 soil			
8270 BNA soil				
	n-Nitrosodimethylamine	BQL	500.0	5.0
	Aniline	BQL	500.0	5.0
	Bis(2-chloroethyl)ether	BQL	500.0	5.0
	2-Chlorophenol	BQL	500.0	5.0
	Phenol	BQL	500.0	5.0
	1,3-Dichlorobenzene	BQL	500.0	5.0
	1,4-Dichlorobenzene	BQL	500.0	5.0
	1,2-Dichlorobenzene	BQL	500.0	5.0
	Benzyl Alcohol	BQL	1000.0	5.0
	Bis(2-chloroisopropyl)ether	BQL	500.0	5.0

GeoChem, Incorporated

Environmental Laboratories

Certified Analytical Laboratory

NC # 37745 ,NC # 336, NC # 461, EPA ID # 155

ient Project Manager
.. ff Tyburski
Site Name:
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GCI Project #: 9905-006

Summary of requested analytical work

Sample type code #s :	*1 = solid samples;*	*2 = liquid samples;*	*3 = Air samples;*	*4 = sludges/unknowns*
Field Number: 735B10	*Lab ID* 1181	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B10	*Lab ID* 1181	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B10	*Lab ID* 1181	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B10	*Lab ID* 1181	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B09	*Lab ID* 1182	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B09	*Lab ID* 1182	*Sample Type:* 1	*Date Analyzed:* 5/11/99	*for 8270 BNA soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B09	*Lab ID* 1182	*Sample Type:* 1	*Date Analyzed:* 5/12/99	*for EPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B09	*Lab ID* 1182	*Sample Type:* 1	*Date Analyzed:* 5/6/99	*for VPH soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes
Field Number: 735B11	*Lab ID* 1183	*Sample Type:* 1	*Date Analyzed:* 5/5/99	*for 8260 soil*
Date Sampled 5/4/99			*Proper Preservation*	Yes

Here by certify that I have Reviewed and approve this data set

2500 Gate Way Centre Blvd., Suite 300 • Morrisville, NC 27560
Telephone: 919-460-8093 • FAX: 919-460-0167

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155

Tuesday, May 18, 1999

e Name:
498 and 487

GCI Project # 9905-006

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	500.0	5.0
Hexachloroethane	BQL	500.0	5.0
n-Nitrosodipropylamine	BQL	500.0	5.0
Nitrobenzene	BQL	500.0	5.0
4-Methylphenol (p-cresol)	BQL	500.0	5.0
Isophorone	BQL	500.0	5.0
2-Nitrophenol	BQL	500.0	5.0
2,4-Dimethylphenol	BQL	500.0	5.0
Bis(2-chloroethoxy)methane	BQL	500.0	5.0
2,4-Dichlorophenol	BQL	500.0	5.0
1,2,4-Trichlorobenzene	BQL	500.0	5.0
Naphthalene	BQL	500.0	5.0
Benzoic acid	BQL	2500.0	5.0
4-Chloroaniline	BQL	500.0	5.0
Hexachlorobutadiene	BQL	500.0	5.0
2-Methylnaphthalene	BQL	500.0	5.0
4-Chloro-3-methylphenol	BQL	1000.0	5.0
Hexachlorocyclopentadiene	BQL	500.0	5.0
2,4,6-Trichlorophenol	BQL	500.0	5.0
2,4,5-Trichlorophenol	BQL	500.0	5.0
2-Chloronaphthalene	BQL	500.0	5.0
2-Nitroaniline	BQL	2500.0	5.0
Acenaphthylene	BQL	500.0	5.0
Dimethylphthalate	BQL	500.0	5.0
2,6-Dinitrotoluene	BQL	500.0	5.0
Acenaphthene	BQL	500.0	5.0
3-Nitroaniline	BQL	2500.0	5.0
2,4-Dinitrophenol	BQL	500.0	5.0
Dibenzofuran	BQL	500.0	5.0
2,4-Dinitrotoluene	BQL	500.0	5.0
4-Nitrophenol	BQL	2500.0	5.0
Fluorene	BQL	500.0	5.0
4-Chlorophenyl Phenyl Ether	BQL	500.0	5.0
Diethylphthalate	BQL	500.0	5.0
4-Nitroaniline	BQL	2500.0	5.0
4,6-Dinitro-2-methylphenol	BQL	500.0	5.0
n-Nitrosodiphenylamine	BQL	500.0	5.0
4-Bromophenyl Phenyl Ether	BQL	500.0	5.0
Hexachlorobenzene	BQL	500.0	5.0
Benzidine	BQL	2500.0	5.0
Pentachlorophenol	BQL	500.0	5.0
Phenanthrene	BQL	500.0	5.0
Anthracene	BQL	500.0	5.0
Di-n-butylphthalate	BQL	500.0	5.0

	Conc. in ug/kg	PQL in ug/kg	Dilution Factor
		lowest detection on sample	
Fluoranthene	BQL	500.0	5.0
Pyrene	BQL	500.0	5.0
Butyl Benzyl Phthalate	BQL	1000.0	5.0
Benzo(a)anthracene	BQL	500.0	5.0
3,3'-Dichlorobenzidine	BQL	1000.0	5.0
Chrysene	BQL	250.0	5.0
Bis(2-ethylhexyl)phthalate	BQL	500.0	5.0
Di-n-octylphthalate	BQL	500.0	5.0
Benzo(b)fluoranthene	BQL	500.0	5.0
Benzo(k)fluoranthene	BQL	500.0	5.0
Benzo(a)pyrene	BQL	500.0	5.0
Indeno(1,2,3-cd)pyrene	BQL	500.0	5.0
Dibenz(a,h)anthracene	BQL	500.0	5.0
Benzo(g,h,i)perylene	BQL	500.0	5.0

End of 8270 BNA soil

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155

Tuesday, May 18, 1999

e Name:
498 and 487

GCI Project # 9905-006

Field ID 735B09 *Date Analyzed: 5/5/99* Dry wt % 85.6

Lab ID 1182

8260 soil

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
MTBE	BDL	5.1	1.0
IPE	BDL	5.1	1.0
n-Butylbenzene	BDL	5.1	1.0
Dichlorodifluoromethane	BDL	10.1	1.0
Chloromethane	BDL	10.1	1.0
Vinyl Chloride	BDL	5.1	1.0
Bromomethane	BDL	10.1	1.0
Chloroethane	BDL	10.1	1.0
Trichlorofluoromethane	BDL	10.1	1.0
Acrolein	BDL	101.0	1.0
Acetone	BDL	50.5	1.0
1,1-Dichloroethene	BDL	5.1	1.0
Iodomethane	BDL	5.1	1.0
Carbon Disulfide	BDL	5.1	1.0
Methylene Chloride	BDL	5.1	1.0
Acrylonitrile	BDL	5.1	1.0
trans-1,2-Dichloroethene	BDL	5.1	1.0
1,1-Dichloroethane	BDL	5.1	1.0
Vinyl Acetate	BDL	10.1	1.0
2,2-Dichloropropane	BDL	5.1	1.0
cis-1,2-Dichloroethene	BDL	5.1	1.0
2-Butanone	BDL	50.5	1.0
Bromochloromethane	BDL	5.1	1.0
Chloroform	BDL	5.1	1.0
1,1,1-Trichloroethane	BDL	5.1	1.0
1,1-Dichloropropene	BDL	5.1	1.0
Carbon Tetrachloride	BDL	5.1	1.0
Benzene	BDL	5.1	1.0
1,2-Dichloroethane	BDL	5.1	1.0
Trichloroethene	BDL	5.1	1.0
1,2-Dichloropropane	BDL	5.1	1.0
Dibromomethane	BDL	5.1	1.0
Bromodichloromethane	BDL	5.1	1.0
2-Chloroethylvinylether	BDL	10.1	1.0
cis-1,3-Dichloropropene	BDL	5.1	1.0
4-Methyl-2-pentanone	BDL	50.5	1.0
Toluene	BDL	5.1	1.0
trans-1,3-Dichloropropene	BDL	5.1	1.0
1,1,2-Trichloroethane	BDL	5.1	1.0
Ethylmethacrylate	BDL	5.1	1.0
Tetrachloroethene	BDL	5.1	1.0

GCI Project # 9905-006

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	BDL	5.1	1.0
2-Hexanone	BDL	50.5	1.0
Chlorodibromomethane	BDL	5.1	1.0
1,2-Dibromoethane	BDL	5.1	1.0
Chlorobenzene	BDL	5.1	1.0
1,1,1,2-Tetrachloroethane	BDL	5.1	1.0
Ethylbenzene	BDL	5.1	1.0
m,p-Xylene	BDL	5.1	1.0
o-Xylene	BDL	5.1	1.0
Styrene	BDL	5.1	1.0
Bromoform	BDL	5.1	1.0
Isopropylbenzene	BDL	5.1	1.0
Bromobenzene	BDL	5.1	1.0
1,2,3-Trichloropropane	BDL	10.1	1.0
1,1,2,2-Tetrachloroethane	BDL	5.1	1.0
n-Propylbenzene	BDL	5.1	1.0
2-Chlorotoluene	BDL	5.1	1.0
1,4-Dichloro-2-butene	BDL	10.1	1.0
4-Chlorotoluene	BDL	5.1	1.0
1,3,5-Trimethylbenzene	BDL	5.1	1.0
tert-Butylbenzene	BDL	5.1	1.0
1,2,4-Trimethylbenzene	BDL	5.1	1.0
sec-Butylbenzene	BDL	5.1	1.0
1,3-Dichlorobenzene	BDL	5.1	1.0
1,4-Dichlorobenzene	BDL	5.1	1.0
4-Isopropyltoluene	BDL	5.1	1.0
1,2-Dichlorobenzene	BDL	5.1	1.0
1,2-Dibromo-3-chloropropan	BDL	5.1	1.0
1,2,4-Trichlorobenzene	BDL	5.1	1.0
Naphthalene	BDL	5.1	1.0
Hexachlorobutadiene	BDL	5.1	1.0
1,2,3-Trichlorobenzene	BDL	5.1	1.0

End of 8260 soil

8270 BNA soil

n-Nitrosodimethylamine	BQL	500.0	5.0
Aniline	BQL	500.0	5.0
Bis(2-chloroethyl)ether	BQL	500.0	5.0
2-Chlorophenol	BQL	500.0	5.0
Phenol	BQL	500.0	5.0
1,3-Dichlorobenzene	BQL	500.0	5.0
1,4-Dichlorobenzene	BQL	500.0	5.0
1,2-Dichlorobenzene	BQL	500.0	5.0
Benzyl Alcohol	BQL	1000.0	5.0
Bis(2-chloroisopropyl)ether	BQL	500.0	5.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	500.0	5.0
Hexachloroethane	BQL	500.0	5.0
n-Nitrosodipropylamine	BQL	500.0	5.0
Nitrobenzene	BQL	500.0	5.0
4-Methylphenol (p-cresol)	BQL	500.0	5.0
Isophorone	BQL	500.0	5.0
2-Nitrophenol	BQL	500.0	5.0
2,4-Dimethylphenol	BQL	500.0	5.0
Bis(2-chloroethoxy)methane	BQL	500.0	5.0
2,4-Dichlorophenol	BQL	500.0	5.0
1,2,4-Trichlorobenzene	BQL	500.0	5.0
Naphthalene	BQL	500.0	5.0
Benzoic acid	BQL	2500.0	5.0
4-Chloroaniline	BQL	500.0	5.0
Hexachlorobutadiene	BQL	500.0	5.0
2-Methylnaphthalene	BQL	500.0	5.0
4-Chloro-3-methylphenol	BQL	1000.0	5.0
Hexachlorocyclopentadiene	BQL	500.0	5.0
2,4,6-Trichlorophenol	BQL	500.0	5.0
2,4,5-Trichlorophenol	BQL	500.0	5.0
2-Chloronaphthalene	BQL	500.0	5.0
2-Nitroaniline	BQL	2500.0	5.0
Acenaphthylene	BQL	500.0	5.0
Dimethylphthalate	BQL	500.0	5.0
2,6-Dinitrotoluene	BQL	500.0	5.0
Acenaphthene	BQL	500.0	5.0
3-Nitroaniline	BQL	2500.0	5.0
2,4-Dinitrophenol	BQL	500.0	5.0
Dibenzofuran	BQL	500.0	5.0
2,4-Dinitrotoluene	BQL	500.0	5.0
4-Nitrophenol	BQL	2500.0	5.0
Fluorene	BQL	500.0	5.0
4-Chlorophenyl Phenyl Ether	BQL	500.0	5.0
Diethylphthalate	BQL	500.0	5.0
4-Nitroaniline	BQL	2500.0	5.0
4,6-Dinitro-2-methylphenol	BQL	500.0	5.0
n-Nitrosodiphenylamine	BQL	500.0	5.0
4-Bromophenyl Phenyl Ether	BQL	500.0	5.0
Hexachlorobenzene	BQL	500.0	5.0
Benzidine	BQL	2500.0	5.0
Pentachlorophenol	BQL	500.0	5.0
Phenanthrene	BQL	500.0	5.0
Anthracene	BQL	500.0	5.0
Di-n-butylphthalate	BQL	500.0	5.0

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
Fluoranthene	**BQL**	500.0	5.0
Pyrene	**BQL**	500.0	5.0
Butyl Benzyl Phthalate	**BQL**	1000.0	5.0
Benzo(a)anthracene	**BQL**	500.0	5.0
3,3'-Dichlorobenzidine	**BQL**	1000.0	5.0
Chrysene	**BQL**	250.0	5.0
Bis(2-ethylhexyl)phthalate	**BQL**	500.0	5.0
Di-n-octylphthalate	**BQL**	500.0	5.0
Benzo(b)fluoranthene	**BQL**	500.0	5.0
Benzo(k)fluoranthene	**BQL**	500.0	5.0
Benzo(a)pyrene	**BQL**	500.0	5.0
Indeno(1,2,3-cd)pyrene	**BQL**	500.0	5.0
Dibenz(a,h)anthracene	**BQL**	500.0	5.0
Benzo(g,h,i)perylene	**BQL**	500.0	5.0

*End of **8270 BNA soil***

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155

Tuesday, May 18, 1999

e Name:
498 and 487

GCI Project # 9905-006

eld ID 735B11
Lab ID 1183
8260 soil

Date Analyzed: 5/5/99

	Conc. in ug/kg		*lowest detection on sample* PQL in ug/kg	Dilution Factor
	Dry wt %	86.8		
MTBE	BDL		5.1	1.0
IPE	BDL		5.1	1.0
n-Butylbenzene	BDL		5.1	1.0
Dichlorodifluoromethane	BDL		10.1	1.0
Chloromethane	BDL		10.1	1.0
Vinyl Chloride	BDL		5.1	1.0
Bromomethane	BDL		10.1	1.0
Chloroethane	BDL		10.1	1.0
Trichlorofluoromethane	BDL		10.1	1.0
Acrolein	BDL		101.0	1.0
Acetone	BDL		50.5	1.0
1,1-Dichloroethene	BDL		5.1	1.0
Iodomethane	BDL		5.1	1.0
Carbon Disulfide	BDL		5.1	1.0
Methylene Chloride	BDL		5.1	1.0
Acrylonitrile	BDL		5.1	1.0
trans-1,2-Dichloroethene	BDL		5.1	1.0
1,1-Dichloroethane	BDL		5.1	1.0
Vinyl Acetate	BDL		10.1	1.0
2,2-Dichloropropane	BDL		5.1	1.0
cis-1,2-Dichloroethene	BDL		5.1	1.0
2-Butanone	BDL		50.5	1.0
Bromochloromethane	BDL		5.1	1.0
Chloroform	BDL		5.1	1.0
1,1,1-Trichloroethane	BDL		5.1	1.0
1,1-Dichloropropene	BDL		5.1	1.0
Carbon Tetrachloride	BDL		5.1	1.0
Benzene	BDL		5.1	1.0
1,2-Dichloroethane	BDL		5.1	1.0
Trichloroethene	BDL		5.1	1.0
1,2-Dichloropropane	BDL		5.1	1.0
Dibromomethane	BDL		5.1	1.0
Bromodichloromethane	BDL		5.1	1.0
2-Chloroethylvinylether	BDL		10.1	1.0
cis-1,3-Dichloropropene	BDL		5.1	1.0
4-Methyl-2-pentanone	BDL		50.5	1.0
Toluene	BDL		5.1	1.0
trans-1,3-Dichloropropene	BDL		5.1	1.0
1,1,2-Trichloroethane	BDL		5.1	1.0
Ethylmethacrylate	BDL		5.1	1.0
Tetrachloroethene	BDL		5.1	1.0

		Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
	1,3-Dichloropropane	BDL	5.1	1.0
	2-Hexanone	BDL	50.5	1.0
	Chlorodibromomethane	BDL	5.1	1.0
	1,2-Dibromoethane	BDL	5.1	1.0
	Chlorobenzene	BDL	5.1	1.0
	1,1,1,2-Tetrachloroethane	BDL	5.1	1.0
	Ethylbenzene	BDL	5.1	1.0
	m,p-Xylene	BDL	5.1	1.0
	o-Xylene	BDL	5.1	1.0
	Styrene	BDL	5.1	1.0
	Bromoform	BDL	5.1	1.0
	Isopropylbenzene	BDL	5.1	1.0
	Bromobenzene	BDL	5.1	1.0
	1,2,3-Trichloropropane	BDL	10.1	1.0
	1,1,2,2-Tetrachloroethane	BDL	5.1	1.0
	n-Propylbenzene	BDL	5.1	1.0
	2-Chlorotoluene	BDL	5.1	1.0
	1,4-Dichloro-2-butene	BDL	10.1	1.0
	4-Chlorotoluene	BDL	5.1	1.0
	1,3,5-Trimethylbenzene	BDL	5.1	1.0
	tert-Butylbenzene	BDL	5.1	1.0
	1,2,4-Trimethylbenzene	BDL	5.1	1.0
	sec-Butylbenzene	BDL	5.1	1.0
	1,3-Dichlorobenzene	BDL	5.1	1.0
	1,4-Dichlorobenzene	BDL	5.1	1.0
	4-Isopropyltoluene	BDL	5.1	1.0
	1,2-Dichlorobenzene	BDL	5.1	1.0
	1,2-Dibromo-3-chloropropan	BDL	5.1	1.0
	1,2,4-Trichlorobenzene	BDL	5.1	1.0
	Naphthalene	BDL	5.1	1.0
	Hexachlorobutadiene	BDL	5.1	1.0
	1,2,3-Trichlorobenzene	BDL	5.1	1.0
		End of 8260 soil		
270 BNA soil				
	n-Nitrosodimethylamine	BQL	500.0	5.0
	Aniline	BQL	500.0	5.0
	Bis(2-chloroethyl)ether	BQL	500.0	5.0
	2-Chlorophenol	BQL	500.0	5.0
	Phenol	BQL	500.0	5.0
	1,3-Dichlorobenzene	BQL	500.0	5.0
	1,4-Dichlorobenzene	BQL	500.0	5.0
	1,2-Dichlorobenzene	BQL	500.0	5.0
	Benzyl Alcohol	BQL	1000.0	5.0
	Bis(2-chloroisopropyl)ether	BQL	500.0	5.0

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, May 18, 1999

: Name:
198 and 487

GCI Project # 9905-006

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	500.0	5.0
Hexachloroethane	BQL	500.0	5.0
n-Nitrosodipropylamine	BQL	500.0	5.0
Nitrobenzene	BQL	500.0	5.0
4-Methylphenol (p-cresol)	BQL	500.0	5.0
Isophorone	BQL	500.0	5.0
2-Nitrophenol	BQL	500.0	5.0
2,4-Dimethylphenol	BQL	500.0	5.0
Bis(2-chloroethoxy)methane	BQL	500.0	5.0
2,4-Dichlorophenol	BQL	500.0	5.0
1,2,4-Trichlorobenzene	BQL	500.0	5.0
Naphthalene	BQL	500.0	5.0
Benzoic acid	BQL	2500.0	5.0
4-Chloroaniline	BQL	500.0	5.0
Hexachlorobutadiene	BQL	500.0	5.0
2-Methylnaphthalene	BQL	500.0	5.0
4-Chloro-3-methylphenol	BQL	1000.0	5.0
Hexachlorocyclopentadiene	BQL	500.0	5.0
2,4,6-Trichlorophenol	BQL	500.0	5.0
2,4,5-Trichlorophenol	BQL	500.0	5.0
2-Chloronaphthalene	BQL	500.0	5.0
2-Nitroaniline	BQL	2500.0	5.0
Acenaphthylene	BQL	500.0	5.0
Dimethylphthalate	BQL	500.0	5.0
2,6-Dinitrotoluene	BQL	500.0	5.0
Acenaphthene	BQL	500.0	5.0
3-Nitroaniline	BQL	2500.0	5.0
2,4-Dinitrophenol	BQL	500.0	5.0
Dibenzofuran	BQL	500.0	5.0
2,4-Dinitrotoluene	BQL	500.0	5.0
4-Nitrophenol	BQL	2500.0	5.0
Fluorene	BQL	500.0	5.0
4-Chlorophenyl Phenyl Ether	BQL	500.0	5.0
Diethylphthalate	BQL	500.0	5.0
4-Nitroaniline	BQL	2500.0	5.0
4,6-Dinitro-2-methylphenol	BQL	500.0	5.0
n-Nitrosodiphenylamine	BQL	500.0	5.0
4-Bromophenyl Phenyl Ether	BQL	500.0	5.0
Hexachlorobenzene	BQL	500.0	5.0
Benzidine	BQL	2500.0	5.0
Pentachlorophenol	BQL	500.0	5.0
Phenanthrene	BQL	500.0	5.0
Anthracene	BQL	500.0	5.0
Di-n-butylphthalate	BQL	500.0	5.0

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
Fluoranthene	BQL	500.0	5.0
Pyrene	BQL	500.0	5.0
Butyl Benzyl Phthalate	BQL	1000.0	5.0
Benzo(a)anthracene	BQL	500.0	5.0
3,3'-Dichlorobenzidine	BQL	1000.0	5.0
Chrysene	BQL	250.0	5.0
Bis(2-ethylhexyl)phthalate	BQL	500.0	5.0
Di-n-octylphthalate	BQL	500.0	5.0
Benzo(b)fluoranthene	BQL	500.0	5.0
Benzo(k)fluoranthene	BQL	500.0	5.0
Benzo(a)pyrene	BQL	500.0	5.0
Indeno(1,2,3-cd)pyrene	BQL	500.0	5.0
Dibenz(a,h)anthracene	BQL	500.0	5.0
Benzo(g,h,i)perylene	BQL	500.0	5.0

End of 8270 BNA soil

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, May 18, 1999

: Name:
198 and 487

GCI Project # 9905-006

Field ID **635B01**
Lab ID 1184
8260 soil

Date Analyzed: 5/5/99

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
	Dry wt % 87.2		
MTBE	BQL	500.0	100.0
IPE	BQL	500.0	100.0
n-Butylbenzene	BQL	500.0	100.0
Dichlorodifluoromethane	BQL	1000.0	100.0
Chloromethane	BQL	1000.0	100.0
Vinyl Chloride	BQL	500.0	100.0
Bromomethane	BQL	1000.0	100.0
Chloroethane	BQL	1000.0	100.0
Trichlorofluoromethane	BQL	1000.0	100.0
Acrolein	BQL	10000.0	100.0
Acetone	BQL	5000.0	100.0
1,1-Dichloroethene	BQL	500.0	100.0
Iodomethane	BQL	500.0	100.0
Carbon Disulfide	BQL	500.0	100.0
Methylene Chloride	BQL	500.0	100.0
Acrylonitrile	BQL	500.0	100.0
trans-1,2-Dichloroethene	BQL	500.0	100.0
1,1-Dichloroethane	BQL	500.0	100.0
Vinyl Acetate	BQL	1000.0	100.0
2,2-Dichloropropane	BQL	500.0	100.0
cis-1,2-Dichloroethene	BQL	500.0	100.0
2-Butanone	BQL	5000.0	100.0
Bromochloromethane	BQL	500.0	100.0
Chloroform	BQL	500.0	100.0
1,1,1-Trichloroethane	BQL	500.0	100.0
1,1-Dichloropropene	BQL	500.0	100.0
Carbon Tetrachloride	BQL	500.0	100.0
Benzene	BQL	500.0	100.0
1,2-Dichloroethane	BQL	500.0	100.0
Trichloroethene	BQL	500.0	100.0
1,2-Dichloropropane	BQL	500.0	100.0
Dibromomethane	BQL	500.0	100.0
Bromodichloromethane	BQL	500.0	100.0
2-Chloroethylvinylether	BQL	1000.0	100.0
cis-1,3-Dichloropropene	BQL	500.0	100.0
4-Methyl-2-pentanone	BQL	5000.0	100.0
Toluene	BQL	500.0	100.0
trans-1,3-Dichloropropene	BQL	500.0	100.0
1,1,2-Trichloroethane	BQL	500.0	100.0
Ethylmethacrylate	BQL	500.0	100.0
Tetrachloroethene	BQL	500.0	100.0

GCI Project # 9905-006

		Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
	1,3-Dichloropropane	BQL	500.0	100.0
	2-Hexanone	BQL	5000.0	100.0
	Chlorodibromomethane	BQL	500.0	100.0
	1,2-Dibromoethane	BQL	500.0	100.0
	Chlorobenzene	BQL	500.0	100.0
	1,1,1,2-Tetrachloroethane	BQL	500.0	100.0
	Ethylbenzene	BQL	500.0	100.0
	m,p-Xylene	BQL	500.0	100.0
	o-Xylene	BQL	500.0	100.0
	Styrene	BQL	500.0	100.0
	Bromoform	BQL	500.0	100.0
	Isopropylbenzene	BQL	500.0	100.0
	Bromobenzene	BQL	500.0	100.0
	1,2,3-Trichloropropane	BQL	1000.0	100.0
	1,1,2,2-Tetrachloroethane	BQL	500.0	100.0
	n-Propylbenzene	BQL	500.0	100.0
	2-Chlorotoluene	BQL	500.0	100.0
	1,4-Dichloro-2-butene	BQL	1000.0	100.0
	4-Chlorotoluene	BQL	500.0	100.0
	1,3,5-Trimethylbenzene	BQL	500.0	100.0
	tert-Butylbenzene	BQL	500.0	100.0
	1,2,4-Trimethylbenzene	BQL	500.0	100.0
	sec-Butylbenzene	BQL	500.0	100.0
	1,3-Dichlorobenzene	BQL	500.0	100.0
	1,4-Dichlorobenzene	BQL	500.0	100.0
	4-Isopropyltoluene	BQL	500.0	100.0
	1,2-Dichlorobenzene	BQL	500.0	100.0
	1,2-Dibromo-3-chloropropan	BQL	500.0	100.0
	1,2,4-Trichlorobenzene	BQL	500.0	100.0
	Naphthalene	BQL	500.0	100.0
	Hexachlorobutadiene	BQL	500.0	100.0
	1,2,3-Trichlorobenzene	BQL	500.0	100.0

*End of **8260 soil***

270 BNA soil

	n-Nitrosodimethylamine	BQL	1000.0	10.0
	Aniline	BQL	1000.0	10.0
	Bis(2-chloroethyl)ether	BQL	1000.0	10.0
	2-Chlorophenol	BQL	1000.0	10.0
	Phenol	BQL	1000.0	10.0
	1,3-Dichlorobenzene	BQL	1000.0	10.0
	1,4-Dichlorobenzene	BQL	1000.0	10.0
	1,2-Dichlorobenzene	BQL	1000.0	10.0
	Benzyl Alcohol	BQL	2000.0	10.0
	Bis(2-chloroisopropyl)ether	BQL	1000.0	10.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	1000.0	10.0
Hexachloroethane	BQL	1000.0	10.0
n-Nitrosodipropylamine	BQL	1000.0	10.0
Nitrobenzene	BQL	1000.0	10.0
4-Methylphenol (p-cresol)	BQL	1000.0	10.0
Isophorone	BQL	1000.0	10.0
2-Nitrophenol	BQL	1000.0	10.0
2,4-Dimethylphenol	BQL	1000.0	10.0
Bis(2-chloroethoxy)methane	BQL	1000.0	10.0
2,4-Dichlorophenol	BQL	1000.0	10.0
1,2,4-Trichlorobenzene	BQL	1000.0	10.0
Naphthalene	BQL	1000.0	10.0
Benzoic acid	BQL	5000.0	10.0
4-Chloroaniline	BQL	1000.0	10.0
Hexachlorobutadiene	BQL	1000.0	10.0
2-Methylnaphthalene	BQL	1000.0	10.0
4-Chloro-3-methylphenol	BQL	2000.0	10.0
Hexachlorocyclopentadiene	BQL	1000.0	10.0
2,4,6-Trichlorophenol	BQL	1000.0	10.0
2,4,5-Trichlorophenol	BQL	1000.0	10.0
2-Chloronaphthalene	BQL	1000.0	10.0
2-Nitroaniline	BQL	5000.0	10.0
Acenaphthylene	BQL	1000.0	10.0
Dimethylphthalate	BQL	1000.0	10.0
2,6-Dinitrotoluene	BQL	1000.0	10.0
Acenaphthene	BQL	1000.0	10.0
3-Nitroaniline	BQL	5000.0	10.0
2,4-Dinitrophenol	BQL	1000.0	10.0
Dibenzofuran	BQL	1000.0	10.0
2,4-Dinitrotoluene	BQL	1000.0	10.0
4-Nitrophenol	BQL	5000.0	10.0
Fluorene	BQL	1000.0	10.0
4-Chlorophenyl Phenyl Ether	BQL	1000.0	10.0
Diethylphthalate	BQL	1000.0	10.0
4-Nitroaniline	BQL	5000.0	10.0
4,6-Dinitro-2-methylphenol	BQL	1000.0	10.0
n-Nitrosodiphenylamine	BQL	1000.0	10.0
4-Bromophenyl Phenyl Ether	BQL	1000.0	10.0
Hexachlorobenzene	BQL	1000.0	10.0
Benzidine	BQL	5000.0	10.0
Pentachlorophenol	BQL	1000.0	10.0
Phenanthrene	BQL	1000.0	10.0
Anthracene	BQL	1000.0	10.0
Di-n-butylphthalate	BQL	1000.0	10.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
Fluoranthene	BQL	1000.0	10.0
Pyrene	BQL	1000.0	10.0
Butyl Benzyl Phthalate	BQL	2000.0	10.0
Benzo(a)anthracene	BQL	1000.0	10.0
3,3'-Dichlorobenzidine	BQL	2000.0	10.0
Chrysene	BQL	500.0	10.0
Bis(2-ethylhexyl)phthalate	BQL	1000.0	10.0
Di-n-octylphthalate	BQL	1000.0	10.0
Benzo(b)fluoranthene	BQL	1000.0	10.0
Benzo(k)fluoranthene	BQL	1000.0	10.0
Benzo(a)pyrene	BQL	1000.0	10.0
Indeno(1,2,3-cd)pyrene	BQL	1000.0	10.0
Dibenz(a,h)anthracene	BQL	1000.0	10.0
Benzo(g,h,i)perylene	BQL	1000.0	10.0

End of 8270 BNA soil

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, May 18, 1999

Name:
198 and 487

GCI Project # 9905-006

Field ID 635B02
Lab ID 1185
3260 soil

Date Analyzed: 5/5/99

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
	Dry wt % 88.9		
MTBE	BDL	5.0	1.0
IPE	BDL	5.0	1.0
n-Butylbenzene	BDL	5.0	1.0
Dichlorodifluoromethane	BDL	10.0	1.0
Chloromethane	BDL	10.0	1.0
Vinyl Chloride	BDL	5.0	1.0
Bromomethane	BDL	10.0	1.0
Chloroethane	BDL	10.0	1.0
Trichlorofluoromethane	BDL	10.0	1.0
Acrolein	BDL	100.2	1.0
Acetone	BDL	50.1	1.0
1,1-Dichloroethene	BDL	5.0	1.0
Iodomethane	BDL	5.0	1.0
Carbon Disulfide	BDL	5.0	1.0
Methylene Chloride	BDL	5.0	1.0
Acrylonitrile	BDL	5.0	1.0
trans-1,2-Dichloroethene	BDL	5.0	1.0
1,1-Dichloroethane	BDL	5.0	1.0
Vinyl Acetate	BDL	10.0	1.0
2,2-Dichloropropane	BDL	5.0	1.0
cis-1,2-Dichloroethene	BDL	5.0	1.0
2-Butanone	BDL	50.1	1.0
Bromochloromethane	BDL	5.0	1.0
Chloroform	BDL	5.0	1.0
1,1,1-Trichloroethane	BDL	5.0	1.0
1,1-Dichloropropene	BDL	5.0	1.0
Carbon Tetrachloride	BDL	5.0	1.0
Benzene	BDL	5.0	1.0
1,2-Dichloroethane	BDL	5.0	1.0
Trichloroethene	BDL	5.0	1.0
1,2-Dichloropropane	BDL	5.0	1.0
Dibromomethane	BDL	5.0	1.0
Bromodichloromethane	BDL	5.0	1.0
2-Chloroethylvinylether	BDL	10.0	1.0
cis-1,3-Dichloropropene	BDL	5.0	1.0
4-Methyl-2-pentanone	BDL	50.1	1.0
Toluene	BDL	5.0	1.0
trans-1,3-Dichloropropene	BDL	5.0	1.0
1,1,2-Trichloroethane	BDL	5.0	1.0
Ethylmethacrylate	BDL	5.0	1.0
Tetrachloroethene	BDL	5.0	1.0

		Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
	1,3-Dichloropropane	BDL	5.0	1.0
	2-Hexanone	BDL	50.1	1.0
	Chlorodibromomethane	BDL	5.0	1.0
	1,2-Dibromoethane	BDL	5.0	1.0
	Chlorobenzene	BDL	5.0	1.0
	1,1,1,2-Tetrachloroethane	BDL	5.0	1.0
	Ethylbenzene	BDL	5.0	1.0
	m,p-Xylene	BDL	5.0	1.0
	o-Xylene	BDL	5.0	1.0
	Styrene	BDL	5.0	1.0
	Bromoform	BDL	5.0	1.0
	Isopropylbenzene	BDL	5.0	1.0
	Bromobenzene	BDL	5.0	1.0
	1,2,3-Trichloropropane	BDL	10.0	1.0
	1,1,2,2-Tetrachloroethane	BDL	5.0	1.0
	n-Propylbenzene	BDL	5.0	1.0
	2-Chlorotoluene	BDL	5.0	1.0
	1,4-Dichloro-2-butene	BDL	10.0	1.0
	4-Chlorotoluene	BDL	5.0	1.0
	1,3,5-Trimethylbenzene	BDL	5.0	1.0
	tert-Butylbenzene	BDL	5.0	1.0
	1,2,4-Trimethylbenzene	BDL	5.0	1.0
	sec-Butylbenzene	BDL	5.0	1.0
	1,3-Dichlorobenzene	BDL	5.0	1.0
	1,4-Dichlorobenzene	BDL	5.0	1.0
	4-Isopropyltoluene	BDL	5.0	1.0
	1,2-Dichlorobenzene	BDL	5.0	1.0
	1,2-Dibromo-3-chloropropan	BDL	5.0	1.0
	1,2,4-Trichlorobenzene	BDL	5.0	1.0
	Naphthalene	BDL	5.0	1.0
	Hexachlorobutadiene	BDL	5.0	1.0
	1,2,3-Trichlorobenzene	BDL	5.0	1.0
		End of 8260 soil		
70 BNA soil				
	n-Nitrosodimethylamine	BQL	500.0	5.0
	Aniline	BQL	500.0	5.0
	Bis(2-chloroethyl)ether	BQL	500.0	5.0
	2-Chlorophenol	BQL	500.0	5.0
	Phenol	BQL	500.0	5.0
	1,3-Dichlorobenzene	BQL	500.0	5.0
	1,4-Dichlorobenzene	BQL	500.0	5.0
	1,2-Dichlorobenzene	BQL	500.0	5.0
	Benzyl Alcohol	BQL	1000.0	5.0
	Bis(2-chloroisopropyl)ether	BQL	500.0	5.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	500.0	5.0
Hexachloroethane	BQL	500.0	5.0
n-Nitrosodipropylamine	BQL	500.0	5.0
Nitrobenzene	BQL	500.0	5.0
4-Methylphenol (p-cresol)	BQL	500.0	5.0
Isophorone	BQL	500.0	5.0
2-Nitrophenol	BQL	500.0	5.0
2,4-Dimethylphenol	BQL	500.0	5.0
Bis(2-chloroethoxy)methane	BQL	500.0	5.0
2,4-Dichlorophenol	BQL	500.0	5.0
1,2,4-Trichlorobenzene	BQL	500.0	5.0
Naphthalene	BQL	500.0	5.0
Benzoic acid	BQL	2500.0	5.0
4-Chloroaniline	BQL	500.0	5.0
Hexachlorobutadiene	BQL	500.0	5.0
2-Methylnaphthalene	BQL	500.0	5.0
4-Chloro-3-methylphenol	BQL	1000.0	5.0
Hexachlorocyclopentadiene	BQL	500.0	5.0
2,4,6-Trichlorophenol	BQL	500.0	5.0
2,4,5-Trichlorophenol	BQL	500.0	5.0
2-Chloronaphthalene	BQL	500.0	5.0
2-Nitroaniline	BQL	2500.0	5.0
Acenaphthylene	BQL	500.0	5.0
Dimethylphthalate	BQL	500.0	5.0
2,6-Dinitrotoluene	BQL	500.0	5.0
Acenaphthene	BQL	500.0	5.0
3-Nitroaniline	BQL	2500.0	5.0
2,4-Dinitrophenol	BQL	500.0	5.0
Dibenzofuran	BQL	500.0	5.0
2,4-Dinitrotoluene	BQL	500.0	5.0
4-Nitrophenol	BQL	2500.0	5.0
Fluorene	BQL	500.0	5.0
4-Chlorophenyl Phenyl Ether	BQL	500.0	5.0
Diethylphthalate	BQL	500.0	5.0
4-Nitroaniline	BQL	2500.0	5.0
4,6-Dinitro-2-methylphenol	BQL	500.0	5.0
n-Nitrosodiphenylamine	BQL	500.0	5.0
4-Bromophenyl Phenyl Ether	BQL	500.0	5.0
Hexachlorobenzene	BQL	500.0	5.0
Benzidine	BQL	2500.0	5.0
Pentachlorophenol	BQL	500.0	5.0
Phenanthrene	BQL	500.0	5.0
Anthracene	BQL	500.0	5.0
Di-n-butylphthalate	BQL	500.0	5.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
Fluoranthene	BQL	500.0	5.0
Pyrene	BQL	500.0	5.0
Butyl Benzyl Phthalate	BQL	1000.0	5.0
Benzo(a)anthracene	BQL	500.0	5.0
3,3'-Dichlorobenzidine	BQL	1000.0	5.0
Chrysene	BQL	250.0	5.0
Bis(2-ethylhexyl)phthalate	BQL	500.0	5.0
Di-n-octylphthalate	BQL	500.0	5.0
Benzo(b)fluoranthene	BQL	500.0	5.0
Benzo(k)fluoranthene	BQL	500.0	5.0
Benzo(a)pyrene	BQL	500.0	5.0
Indeno(1,2,3-cd)pyrene	BQL	500.0	5.0
Dibenz(a,h)anthracene	BQL	500.0	5.0
Benzo(g,h,i)perylene	BQL	500.0	5.0

End of 8270 BNA soil

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, May 18, 1999

e Name:
498 and 487

GCI Project # 9905-006

Field ID 635B03 *Date Analyzed: 5/5/99* Dry wt % 89.7
Lab ID 1186
8260 soil

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
MTBE	BDL	5.0	1.0
IPE	BDL	5.0	1.0
n-Butylbenzene	BDL	5.0	1.0
Dichlorodifluoromethane	BDL	10.0	1.0
Chloromethane	BDL	10.0	1.0
Vinyl Chloride	BDL	5.0	1.0
Bromomethane	BDL	10.0	1.0
Chloroethane	BDL	10.0	1.0
Trichlorofluoromethane	BDL	10.0	1.0
Acrolein	BDL	99.6	1.0
Acetone	BDL	49.8	1.0
1,1-Dichloroethene	BDL	5.0	1.0
Iodomethane	BDL	5.0	1.0
Carbon Disulfide	BDL	5.0	1.0
Methylene Chloride	BDL	5.0	1.0
Acrylonitrile	BDL	5.0	1.0
trans-1,2-Dichloroethene	BDL	5.0	1.0
1,1-Dichloroethane	BDL	5.0	1.0
Vinyl Acetate	BDL	10.0	1.0
2,2-Dichloropropane	BDL	5.0	1.0
cis-1,2-Dichloroethene	BDL	5.0	1.0
2-Butanone	BDL	49.8	1.0
Bromochloromethane	BDL	5.0	1.0
Chloroform	BDL	5.0	1.0
1,1,1-Trichloroethane	BDL	5.0	1.0
1,1-Dichloropropene	BDL	5.0	1.0
Carbon Tetrachloride	BDL	5.0	1.0
Benzene	BDL	5.0	1.0
1,2-Dichloroethane	BDL	5.0	1.0
Trichloroethene	BDL	5.0	1.0
1,2-Dichloropropane	BDL	5.0	1.0
Dibromomethane	BDL	5.0	1.0
Bromodichloromethane	BDL	5.0	1.0
2-Chloroethylvinylether	BDL	10.0	1.0
cis-1,3-Dichloropropene	BDL	5.0	1.0
4-Methyl-2-pentanone	BDL	49.8	1.0
Toluene	BDL	5.0	1.0
trans-1,3-Dichloropropene	BDL	5.0	1.0
1,1,2-Trichloroethane	BDL	5.0	1.0
Ethylmethacrylate	BDL	5.0	1.0
Tetrachloroethene	BDL	5.0	1.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	BDL	5.0	1.0
2-Hexanone	BDL	49.8	1.0
Chlorodibromomethane	BDL	5.0	1.0
1,2-Dibromoethane	BDL	5.0	1.0
Chlorobenzene	BDL	5.0	1.0
1,1,1,2-Tetrachloroethane	BDL	5.0	1.0
Ethylbenzene	BDL	5.0	1.0
m,p-Xylene	BDL	5.0	1.0
o-Xylene	BDL	5.0	1.0
Styrene	BDL	5.0	1.0
Bromoform	BDL	5.0	1.0
Isopropylbenzene	BDL	5.0	1.0
Bromobenzene	BDL	5.0	1.0
1,2,3-Trichloropropane	BDL	10.0	1.0
1,1,2,2-Tetrachloroethane	BDL	5.0	1.0
n-Propylbenzene	BDL	5.0	1.0
2-Chlorotoluene	BDL	5.0	1.0
1,4-Dichloro-2-butene	BDL	10.0	1.0
4-Chlorotoluene	BDL	5.0	1.0
1,3,5-Trimethylbenzene	BDL	5.0	1.0
tert-Butylbenzene	BDL	5.0	1.0
1,2,4-Trimethylbenzene	BDL	5.0	1.0
sec-Butylbenzene	BDL	5.0	1.0
1,3-Dichlorobenzene	BDL	5.0	1.0
1,4-Dichlorobenzene	BDL	5.0	1.0
4-Isopropyltoluene	BDL	5.0	1.0
1,2-Dichlorobenzene	BDL	5.0	1.0
1,2-Dibromo-3-chloropropan	BDL	5.0	1.0
1,2,4-Trichlorobenzene	BDL	5.0	1.0
Naphthalene	BDL	5.0	1.0
Hexachlorobutadiene	BDL	5.0	1.0
1,2,3-Trichlorobenzene	BDL	5.0	1.0

*End of **8260 soil***

70 BNA soil

n-Nitrosodimethylamine	BQL	500.0	5.0
Aniline	BQL	500.0	5.0
Bis(2-chloroethyl)ether	BQL	500.0	5.0
2-Chlorophenol	BQL	500.0	5.0
Phenol	BQL	500.0	5.0
1,3-Dichlorobenzene	BQL	500.0	5.0
1,4-Dichlorobenzene	BQL	500.0	5.0
1,2-Dichlorobenzene	BQL	500.0	5.0
Benzyl Alcohol	BQL	1000.0	5.0
Bis(2-chloroisopropyl)ether	BQL	500.0	5.0

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
2-Methylphenol (o-cresol)	BQL	500.0	5.0
Hexachloroethane	BQL	500.0	5.0
n-Nitrosodipropylamine	BQL	500.0	5.0
Nitrobenzene	BQL	500.0	5.0
4-Methylphenol (p-cresol)	BQL	500.0	5.0
Isophorone	BQL	500.0	5.0
2-Nitrophenol	BQL	500.0	5.0
2,4-Dimethylphenol	BQL	500.0	5.0
Bis(2-chloroethoxy)methane	BQL	500.0	5.0
2,4-Dichlorophenol	BQL	500.0	5.0
1,2,4-Trichlorobenzene	BQL	500.0	5.0
Naphthalene	BQL	500.0	5.0
Benzoic acid	BQL	2500.0	5.0
4-Chloroaniline	BQL	500.0	5.0
Hexachlorobutadiene	BQL	500.0	5.0
2-Methylnaphthalene	BQL	500.0	5.0
4-Chloro-3-methylphenol	BQL	1000.0	5.0
Hexachlorocyclopentadiene	BQL	500.0	5.0
2,4,6-Trichlorophenol	BQL	500.0	5.0
2,4,5-Trichlorophenol	BQL	500.0	5.0
2-Chloronaphthalene	BQL	500.0	5.0
2-Nitroaniline	BQL	2500.0	5.0
Acenaphthylene	BQL	500.0	5.0
Dimethylphthalate	BQL	500.0	5.0
2,6-Dinitrotoluene	BQL	500.0	5.0
Acenaphthene	BQL	500.0	5.0
3-Nitroaniline	BQL	2500.0	5.0
2,4-Dinitrophenol	BQL	500.0	5.0
Dibenzofuran	BQL	500.0	5.0
2,4-Dinitrotoluene	BQL	500.0	5.0
4-Nitrophenol	BQL	2500.0	5.0
Fluorene	BQL	500.0	5.0
4-Chlorophenyl Phenyl Ether	BQL	500.0	5.0
Diethylphthalate	BQL	500.0	5.0
4-Nitroaniline	BQL	2500.0	5.0
4,6-Dinitro-2-methylphenol	BQL	500.0	5.0
n-Nitrosodiphenylamine	BQL	500.0	5.0
4-Bromophenyl Phenyl Ether	BQL	500.0	5.0
Hexachlorobenzene	BQL	500.0	5.0
Benzidine	BQL	2500.0	5.0
Pentachlorophenol	BQL	500.0	5.0
Phenanthrene	BQL	500.0	5.0
Anthracene	BQL	500.0	5.0
Di-n-butylphthalate	BQL	500.0	5.0

	Conc. in ug/kg	PQL in ug/kg	Dilution Factor
		lowest detection on sample	
Fluoranthene	BQL	500.0	5.0
Pyrene	BQL	500.0	5.0
Butyl Benzyl Phthalate	BQL	1000.0	5.0
Benzo(a)anthracene	BQL	500.0	5.0
3,3'-Dichlorobenzidine	BQL	1000.0	5.0
Chrysene	BQL	250.0	5.0
Bis(2-ethylhexyl)phthalate	BQL	500.0	5.0
Di-n-octylphthalate	BQL	500.0	5.0
Benzo(b)fluoranthene	BQL	500.0	5.0
Benzo(k)fluoranthene	BQL	500.0	5.0
Benzo(a)pyrene	BQL	500.0	5.0
Indeno(1,2,3-cd)pyrene	BQL	500.0	5.0
Dibenz(a,h)anthracene	BQL	500.0	5.0
Benzo(g,h,i)perylene	BQL	500.0	5.0

End of 8270 BNA soil

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155

Tuesday, May 18, 1999

GCI Project 9905-006

Site Name:

4 3 and 487

		Conc. in mg/kg	PQL in mg/kg	Dilution Factor
Field ID **735B10**	*Lab ID 1181*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.83*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**BDL**	12.051	1.0
	C19-C36 Aliphatics	**BDL**	12.051	1.0
	C11-C22 Aromatics	**BDL**	12.051	1.0
Field ID **735B09**	*Lab ID 1182*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.86*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**BDL**	11.684	1.0
	C19-C36 Aliphatics	**62.1**	11.684	1.0
	C11-C22 Aromatics	**12.3**	11.684	1.0
Field ID **735B11**	*Lab ID 1183*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.87*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**BDL**	11.516	1.0
	C19-C36 Aliphatics	**49.9**	11.516	1.0
	C11-C22 Aromatics	**17.4**	11.516	1.0
Field ID **635B01**	*Lab ID 1184*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.87*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**1,053.5**	11.467	1.0
	C19-C36 Aliphatics	**451.6**	11.467	1.0
	C11-C22 Aromatics	**443.9**	11.467	1.0
Field ID **635B02**	*Lab ID 1185*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.89*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**BDL**	11.247	1.0
	C19-C36 Aliphatics	**BDL**	11.247	1.0
	C11-C22 Aromatics	**BDL**	11.247	1.0
Field ID **635B03**	*Lab ID 1186*			
Date Analyzed: 5/12/99	*Dry Wt %: 0.9*			
	Analysis:	**EPH soil**		
	C9-C18 Aliphatics	**BDL**	11.15	1.0
	C19-C36 Aliphatics	**BDL**	11.15	1.0
	C11-C22 Aromatics	**BDL**	11.15	1.0

GeoChem Incorporated Certified Analytical Laboratory

NC # 37745 , NC # 336, EPA ID # 155

Tuesday, May 18, 1999

GCI Project 9905-006

Site Name:

8 and 487

		Conc. in mg/kg	PQL in mg/kg	Dilution Factor
Field ID **735B10**	*Lab ID 1181*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.83*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	12.051	1.0
	C9-C12 Aliphatics	**BQL**	12.051	1.0
	C9-C10 Aromatics	**BQL**	12.051	1.0
Field ID **735B09**	*Lab ID 1182*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.86*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	11.684	1.0
	C9-C12 Aliphatics	**BQL**	11.684	1.0
	C9-C10 Aromatics	**BQL**	11.684	1.0
Field ID **735B11**	*Lab ID 1183*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.87*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	11.516	1.0
	C9-C12 Aliphatics	**BQL**	11.516	1.0
	C9-C10 Aromatics	**BQL**	11.516	1.0
Field ID **635B01**	*Lab ID 1184*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.87*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	11.467	1.0
	C9-C12 Aliphatics	**BQL**	11.467	1.0
	C9-C10 Aromatics	**BQL**	11.467	1.0
Field ID **635B02**	*Lab ID 1185*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.89*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	11.247	1.0
	C9-C12 Aliphatics	**BQL**	11.247	1.0
	C9-C10 Aromatics	**BQL**	11.247	1.0
Field ID **635B03**	*Lab ID 1186*			
Date Analyzed: 5/6/99	*Dry Wt %: 0.9*			
	VPH soil			
	C5-C8 Aliphatics	**BQL**	11.15	1.0
	C9-C12 Aliphatics	**BQL**	11.15	1.0
	C9-C10 Aromatics	**BQL**	11.15	1.0

GeoChem Incorporated Quality Control Results

NC # 37745 , NC # 336, EPA ID # 155

GCI Project # 9905-006

Tuesday, May 18, 1999

	Percent Recovery	Lab Blank:	*lowest detection @ ideal conditions* MDL. in ug/l
8260 soil			
1,1-Dichloroethene	**87**	0	0.88
Benzene	**100**	0	0.72
Trichloroethene	**97**	0	0.71
Toluene	**101**	0	0.64
Chlorobenzene	**102**	0	0.49
	End of 8260 soil		
8270 BNA soil			
2-Chlorophenol	**83**	0	2.39
Phenol	**68**	0	2.44
1,4-Dichlorobenzene	**95**	0	2.96
n-Nitrosodipropylamine	**95**	0	4.77
1,2,4-Trichlorobenzene	**88**	0	2.68
4-Chloro-3-methylphenol	**82**	0	2.45
Acenaphthene	**67**	0	6.83
2,4-Dinitrotoluene	**100**	0	2.48
4-Nitrophenol	**95**	0	6.65
Pentachlorophenol	**117**	0	2.4
Pyrene	**92**	0	3.34
	End of 8270 BNA soil		

GeoChem Incorporated Quality Control Results

NC # 37745 , NC # 336, EPA ID # 155

905-006

Tuesday, May 18, 1999

VPH soil	*Percent Recovery*	*Lab Blank*	*MDL in mg/kg*
C5-C8 Aliphatics	**86.7**	0	0.013
C9-C12 Aliphatics	**111.1**	0	0.004
C9-C10 Aromatics	**124.3**	0	0.003

GeoChem, Incorporated

Environmental Laboratories

2500 Gate Way Centre Blvd., Suite 300
Morrisville, NC 27560

Report To:
JEFF Tyburski
LAW Raleigh
3301 ATLANTIC AVE
Raleigh, NC 27604

Bill To: SAME

Chain of Custody Record

PROJECT SITE NUMBER: 30740-6-0000
PO#:
GEOCHEM PROJECT #: 9905-006
SITE NAME: 498 & 487
DATE DUE:
COLLECTED BY (Signature): [signature]
VERBAL/FAX/HARDCOPY:

FIELD SAMPLE ID	TURNAROUND IN DAYS	SAMPLE MATRIX	DATE AND TIME COLLECTED	NO. OF CONTAINERS PER LOCATION	MADEP EPH	EPH & VPH	8260 (BN SHG)	8270 (BN SHG)							REMARKS	LAB ID NO. (for lab use only)
73SB10	STD	Soil	5/4/99 9:30 AM	2	X	X	X	X							ANY QUESTIONS	1181
73SB09	STD	Soil	5/4/99 11:00 AM		X	X	X	X							CALL JEFF Tyburski	1182
73SB11	STD	Soil	5/4/99 12:10 PM		X	X	X	X							1-800-648-8928	1183
																~~1184~~
63SB01	STD	Soil	5/4/99 1:50 PM		X	X	X	X								1184
63SB02	STD	Soil	5/4/99 2:30 PM		X	X	X	X								1185
63SB03	STD	Soil	5/4/99 3:00 PM		X	X	X	X								1186

REMARKS	RELINQUISHED BY:	DATE	TIME
	[signature]		

RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME
FEDERAL Express	5/4/99	4:30				[signature]	5/5/99	11:00			

This Chain of Custody is considered a written contract to perform the services requested in the analyses section of this document.

APPENDIX C

HISTORICAL GROUNDWATER CHEMISTRY DATA

QUARTERLY SAMPLING REPORT

MCAS CHERRY POINT

JST SITE: Tank 487
) NITORING WELL IDENTIFICATION: 63GW01
:..TE SAMPLE WAS TAKEN: 09/15/95
ANALYSES RUN: EPA Methods 602, 610 and 625

ANALYTE	UNITS	Initial Analytical Results* (1/13/93)	1ST** QUARTER (7/21/93)	2ND QUARTER (1/21/94)	3RD QUARTER (3/15/94)	4TH QUARTER (6/10/94)	5TH QUARTER (10/24/94)	6TH QUARTER (01/18/95)	7TH QUARTER (06/05/95)	8TH QUARTER (08/15/95)	DET. LIMIT	REG. LIMIT
EPA Method 602	ug\L	ND	NA	NA	ND	ND	ND	ND	ND	ND	—	—
PA Meth. 610\625												
cenaphthene	ug/L	NA	NA	ND	3.0	ND	ND	ND	ND	ND	2.0	2.0
Fluoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.6	1.6
uorene	ug/L	NA	ND	ND	1.1	ND	ND	ND	ND	ND	1.8	280
1-Methylnaphthalene	ug/L	NA	NA	ND	2.1	ND	ND	ND	ND	ND	3.4	3.4
2-Methylnaphthalene	ug/L	NA	1.3J	ND	1.7	ND	ND	ND	ND	ND	1.6	1.6
aphthalene	ug/L	NA	1.4J	ND	52	ND	ND	ND	ND	ND	2.1	21.0
4,6-Dinitro-2-methyphenol	ug/L	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
s (2-hylhexyl)phthalate	ug/L	NA	3.2JB	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	ug/L	NA	ND	ND	ND	ND	0.59	ND	ND	1.18	0.57	0.57

*Analytical results from the Initial GTI Site Check Investigation (Report dated February 12, 1993). Analysis by EPA Method 602 only.
** Analytical results from GTI report entitled "Additional Groundwater Sampling at Building 487", dated August 16, 1993.
ND = None Detected
NA = Not Analyzed
ug/L = Micrograms per liter
— = Not applicable, standard does not exist or no analyses were detected for the specified method.
Reg. Limit = Regulatory Limit
Det. Limit = Detection Limit
J indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the quantitation limit, but greater than zero, or when reporting an estimated concentration for a tentatively identified compound.
B indicates that the analyte was found in the blank as well as the sample.

NOTE: Listed analytes include those detected in current or previous investigations and/or quarterly sampling reports.
Regulatory limits for fluorene and naphthalene are in accordance with interim maximum allowable concentrations, effective December 23, 1993.

QUARTERLY SAMPLING REPORT

MCAS CHERRY POINT

JST SITE: Tank 487
VONITORING WELL IDENTIFICATION: 63GW02
: TE SAMPLE WAS TAKEN: 08/15/95
ANALYSES RUN: EPA Methods 602, 610 and 625

ANALYTE	UNITS	Initial Analytical Results* (1/31/93)	1ST** QUARTER (7/21/93)	2ND QUARTER (1/21/94)	3RD QUARTER (3/15/94)	4TH QUARTER (6/10/94)	5TH QUARTER (10/24/94)	6TH QUARTER (01/18/95)	7TH QUARTER (06/5/95)	8TH QUARTER (08/15/95)	DET. LIMIT	REG. LIMIT
PA Method 602												
1,2-Dichlorobenzene	ug/L	ND	NA	NA	NA	0.17	ND	ND	ND	ND	0.13	0.13
MTBE	ug/L	ND	NA	NA	NA	0.25	ND	ND	ND	ND	0.13	200
PA Method 610												
Acenaphthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.0	1.0
enzo[k]fluoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	3.00	1.0	1.0
Fluoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.0	1.0
Fluorene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.0	280
-Methylnaphthalene	ug/L	NA	NA	ND	ND	ND	ND	ND	ND	ND	0.8	0.8
2-Methylnaphthalene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	0.8	0.8
aphthalene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.0	21.0
,6-Dinitro-2-methyphenol	ug/L	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA
is (2-thylhexyl)phthalate	ug/L	NA	3.1JB	NA	ND	NA	NA	NA	NA	NA	NA	NA

nalytical results from the Initial GTI Site Check Investigation (Report dated February 12, 1993). Analysis by EPA Method 602 only.
Analytical results from GTI report entitled "Additional Groundwater Sampling at Building 487", dated August 16, 1993.
ND = None Detected
NA = Not Analyzed
UG/L = Micrograms per liter
Reg. Limit = Regulatory Limit
Det. Limit = Detection Limit
J indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the quantitation limit, but greater than zero, or when reporting an estimated concentration for a tentatively identified compound.
B indicates that the analyte was found in the blank as well as the sample.

NOTE: Listed analytes include those detected in current or previous investigations and/or quarterly sampling reports.
Regulatory limits for fluorene and naphthalene are in accordance with the interim maximum allowable concentrations, effective December 23, 1993.

QUARTERLY SAMPLING REPORT

MCAS CHERRY POINT

JST SITE: Tank 487
V ONITORING WELL IDENTIFICATION: 63GW03
D TE SAMPLE WAS TAKEN: 08/15/95
ANALYSES RUN: EPA Methods 602, 610 and 625

NALYTE	UNITS	Initial Analytical Results* (1/31/93)	1ST** QUARTER (7/21/93)	2ND QUARTER (1/21/94)	3RD QUARTER (3/15/94)	4TH QUARTER (6/14/94)	5TH QUARTER (10/24/94)	6TH QUARTER (01/18/95)	7TH QUARTER (06/5/95)	8TH QUARTER (08/15/95)	DET. LIMIT	REG. LIMIT
EPA Method 602												
MTBE	ug/L	NA	NA	NA	NA	0.77	ND	1.1	ND	ND	0.13	200
PA Meth. 610/625												
Acenaphthene	ug/L	NA	4.3J	2.5	ND	ND	2.7	ND	ND	0.936	1.9	1.9
enzo(k)fluoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	2.16	1.0	1.0
luoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.5
Fluorene	ug/L	NA	ND	1.6	ND	ND	ND	ND	ND	ND	1.7	280
-Methylnaphthalene	ug/L	NA	NA	NA	ND	ND	ND	ND	ND	ND	3.4	3.4
2-Methylnaphthalene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	1.5	1.5
laphthalene	ug/L	NA	7.7J	2.9	ND	ND	ND	ND	ND	ND	2.0	21.0
,6-Dinitro-2-methyphenol	ug/L	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA
is (2-thylhexyl)phthalate	ug/L	NA	3.4JB	NA	ND	NA	NA	NA	NA	NA	NA	NA

*Analytical results from the Initial GTI Site Check Investigation (Report dated February 12, 1993). Analysis by EPA Method 602 only.
** Analytical results from GTI report entitled "Additional Groundwater Sampling at Building 487", dated August 16, 1993.
ND = None Detected
NA = Not Analyzed
ug/L = Micrograms per liter
Reg. Limit = Regulatory Limit
Det. Limit = Detection Limit
J indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the quantitation limit, but greater than zero, or when reporting an estimated concentration for a tentatively identified compound.
B indicates that the analyte was found in the blank as well as the sample.

NOTE: Listed analytes include those detected in current or previous investigations and/or quarterly sampling reports.
Regulatory limits for fluorene and naphthalene are in accordance with the interim maximum allowable concentrations, effective December 23, 1993.

QUARTERLY SAMPLING REPORT

MCAS CHERRY POINT

JST SITE: Tank 487
MONITORING WELL IDENTIFICATION: 63GW13 (Duplicate - 63GW03)
) TE SAMPLE WAS TAKEN: 08/15/95
\..ALYSES RUN: EPA Methods 602, 610 and 625

ANALYTE	UNITS	Initial Analytical Results* (1/31/93)	1ST** QUARTER (7/21/93)	2ND QUARTER (1/21/94)	3RD QUARTER (3/15/94)	4TH QUARTER (6/15/94)	5TH QUARTER (10/24/94)	6TH QUARTER (01/18/95)	7TH QUARTER (06/5/95)	8TH QUARTER (08/15/95)	DET. LIMIT	REG. LIMIT
'A Method 602												
MTBE	ug/L	NA	NA	NA	NA	ND	ND	1.1	ND	ND	0.13	200
'A Method 610												
Acenaphthene	ug/L	NA	NA	2.5	ND	ND	2.6	NA[1]	ND	1.08	1.9	1.9
ɔnzo[k]fluoranthene	ug/L	NA	NA	ND	ND	ND	ND	ND	ND	1.38	1.0	1.0
uoranthene	ug/L	NA	NA	ND	ND	ND	ND	NA	ND	ND	1.5	1.5
Fluorene	ug/L	NA	NA	1.2	ND	ND	ND	NA	ND	ND	1.7	280
Methylnaphthalene	ug/L	NA	NA	ND	ND	ND	ND	NA	ND	ND	3.3	3.3
2-Methylnaphthalene	ug/L	NA	NA	ND	ND	ND	ND	NA	ND	ND	1.5	1.5
Naphthalene	ug/L	NA	NA	2.6	ND	ND	ND	NA	ND	ND	2.0	21.0
6-Dinitro-2-methyphenol	ug/L	NA	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA
bis (2-Ethylhexyl)phthalate	ug/L	NA	NA	NA	NA	NA	ND	NA	ND	ND	NA	NA

*Analytical results from the Initial GTI Site Check Investigation (Report dated February 12, 1993). Analysis by EPA Method 602 only.
**Analytical results from GTI report entitled "Additional Groundwater Sampling at Building 487", dated August 16, 1993.
[1] The duplicate sample was inadvertently not analyzed for this parameter.
\ = None Detected
NA = Not Analyzed
ug/L = Micrograms per liter
. Limit = Regulatory Limit
. Limit = Detection Limit
J indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the quantitation limit, but greater than zero, or when reporting an estimated concentration for a tentatively identified compound.
indicates that the analyte was found in the blank as well as the sample.

NOTE: Listed analytes include those detected in current or previous investigations and/or quarterly sampling reports.
Regulatory limits for fluorene and naphthalene are in accordance with the interim maximum allowable concentrations, effective December 23, 1993.

QUARTERLY SAMPLING REPORT

MCAS CHERRY POINT

IST SITE: Tank 487
)ONITORING WELL IDENTIFICATION: 63GW04
) TE SAMPLE WAS TAKEN: 08/15/95
\..ALYSES RUN: EPA Methods 602, 610 and 625

ANALYTE	UNITS	Initial Analytical Results* (1/31/93)	1ST** QUARTER (7/21/93)	2ND QUARTER (1/21/94)	3RD QUARTER (3/15/94)	4TH QUARTER (6/10/94)	5TH QUARTER (10/24/94)	6TH QUARTER (01/18/95)	7TH QUARTER (06/5/95)	8TH QUARTER (08/15/95)	DET. LIMIT	REG. LIMIT
A METHOD 602												
Ethylbenzene	ug/L	ND[1]	NA	NA	NA	0.21	ND	ND	0.217	ND	0.19	29.0
luene	ug/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	0.2	100.0
Xylenes (total)	ug/L	ND[1]	NA	NA	NA	0.46	ND	ND	ND	ND	0.36	530
nzene	ug/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	0.17	1.0
TBE	ug/L	NA	NA	NA	NA	1.6	ND	ND	0.321	ND	0.13	200
EPA METHOD 610												
enaphthene	ug/L	NA	3.5J	7.6	ND	10.0	13	ND	14.1	9.85	1.9	1.9
enzo[k]fluoranthene	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	2.95	1.0	1.0
Fluoranthene	ug/L	NA	ND	ND	ND	1.5	ND	ND	1.69	0.601	1.5	1.5
orene	ug/L	NA	ND	4.0	ND	4.7	5.9	3.1	6.67	4.80	1.7	280
1-Methylnaphthalene	ug/L	NA	NA	3.6	ND	7.5	8.1	ND	8.53	6.33	3.4	3.4
Methylnaphthalene	ug/L	NA	1.3J	1.8	ND	4.4	5.5	ND	3.97	1.79	1.5	1.5
aphthalene	ug/L	NA	33	59	ND	130.0	140.0	55	167	94.2	4.1	21.0
4,6-Dinitro-2-ethyphenol	ug/L	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA
s (2-Ethylhexyl)phthalate	ug/L	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA
henanthrene	ug/L	NA	ND	ND	ND	ND	1.8	ND	ND	NA	1.6	210

*Analytical results from the Initial GTI Site Check Investigation (Report dated February 12, 1993). Analysis by EPA Method 602 only.
**Analytical results from GTI report entitled "Additional Groundwater Sampling at Building 487", dated August 16, 1993.
ND = None Detected
ND[1] = None detected at detection limit of 0.8 ug/l (ethylbenzene) and 1.7 ug/l (xylenes)
NA = Not Analyzed
ug/L = Micrograms per liter
Reg. Limit = Regulatory Limit
Det. Limit = Detection Limit
J indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the quantitation limit, but greater than zero, or when reporting an estimated concentration for a tentatively identified compound.
B indicates that the analyte was found in the blank as well as the sample.

NOTE: Listed analytes include those detected in current or previous investigations and/or quarterly sampling reports.
Regulatory limits for fluorene and naphthalene are in accordance with the interim maximum allowable concentrations, effective December 23, 1993.