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MCAS CHERRY POINT
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REQUEST FOR NO FURTHER ACTION STATUS FOR BUILDING 3904 UNDERGROUND
STORAGE TANK WITH TRANSMITTAL MCAS CHERRY POINT NC
10/24/2000
CATLIN ENGINEERS AND SCIENTISTS

REQUEST
FOR
“NO FURTHER ACTION” STATUS
BUILDING 3904 UST
NCDENR INCIDENT NO. 15120
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA

OCTOBER 24, 2000

Contract No.: N62470-95-D-6009
Delivery Order No. 0087
CATLIN Project No. 200-103



Prepared By:

CATLIN Engineers and Scientists
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October 25, 2000

Commander
LANTNAVFACENGCOM
Attn: Charles R. Hilton
EV21-CRH
1510 Gilbert Street
Norfolk, Virginia 23511-2699

RE: Contract No. N62470-95-D-6009
Delivery Order No. 0087
CATLIN Project No. 200-103-20

Dear Mr. Hilton:

Please find enclosed the FINAL report, *Request for "No Further Action" Status, Building 3904 UST, MCAS, Cherry Point, North Carolina*. One copy of the final report is included for your files.

The attached pages contain a written response to comments concerning the above referenced report.

If you have any questions or require any additional information, please do not hesitate to contact us at (910) 452-5861. CATLIN appreciates the opportunity to provide you with environmental services.

Sincerely,

A handwritten signature in cursive script that reads "Teri M. Piver".

Teri M. Piver, P.G.
Project Manager

A handwritten signature in cursive script that reads "Michael E. Mason for".

Michael E. Mason, P.E.
CATLIN Program Manager

TWL/TMP/ss

Enclosure

cc: John Myers, MCAS EAD (w/3 encl.)
Christine Foskey, LANTNAVFACENGCOM, Code 02134 (letter only)

20103TP02_ltr

6. **Page 4, 5.0, 6th paragraph – Please add the following sentence: A subsequent gauging event of well 79GW05 on October 19, 2000 by the Environmental Affairs Department staff did not reveal the presence of free product.**

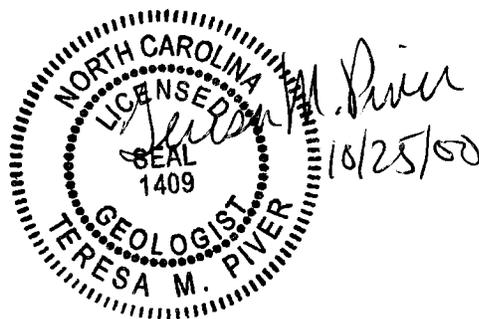
Acknowledged. The sentence has been added to the paragraph.

REQUEST
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**REQUEST
FOR
"NO FURTHER ACTION" STATUS
BUILDING 3904 UST**

1.0 INTRODUCTION

Site Name: Building 3904 UST

Location: Marine Corps Air Station
Cherry Point, North Carolina

NCDENR Incident No.: 15120

Responsible Party: Marine Corps Air Station
Cherry Point, North Carolina

Contact: Mr. John Myers

Address: Environmental Affairs Department
PSC Box 8006
Marine Corps Air Station
Cherry Point, North Carolina 28533

Telephone: (252) 466-4903

Environmental Consultant: CATLIN Engineers and Scientists

Contact: Ms. Teri M. Piver, P.G.

Address: P.O. Box 10279
Wilmington, North Carolina 28405

Telephone (910) 452-5861

2.0 BACKGROUND

Contaminant Type: Diesel Fuel

Source: 1,000-gallon UST

Quantity Released: Uncertain

Date of Release Discovery: August 1995

Cause of Release: Uncertain

Initial Abatement/Remedial Actions: Removal of the UST System in August 1995

List of Previous Environmental Reports:

Report No.	Report Title	Author	Date
1	Three Plus One Additional Well Site Check, Former UST Location 3904/3905	R. E. Wright Environmental, Inc.	September 1996
2	Periodic Monitoring Report MCAS Cherry Point December 1997-February 1998	CATLIN Engineers and Scientists	November 13, 1998
3	Periodic Monitoring Report MCAS Cherry Point Monitoring Event – November 1998	CATLIN Engineers and Scientists	April 12, 1999
4	Periodic Monitoring Report MCAS Cherry Point First Semester (January – June 1999)	CATLIN Engineers and Scientists	January 10, 2000
5	Project Close-Out Report Building 3904 Site Remediation MCAS Cherry Point	McLaren/Hart, Inc.	April 14, 2000

3.0 SECONDARY CONTAMINANT SOURCES:

3.1 *Free Product*

Evidence of free product was not identified at the site until November 1998. Free product appeared in well 79GW04 following a large demolition project directly adjacent to site. The use of heavy equipment in close proximity to the site appeared to liberate free product into the well from the surrounding soil. Product thickness has ranged from 0.44 foot (11/98) to 0.43 foot (3/99).

3.2 *Soil Contamination*

Reportedly, soil samples analyzed as part of UST closure in August 1995 revealed total petroleum hydrocarbon (TPH) - diesel concentrations of 4,480 parts per million (ppm) and 954 ppm of TPH – gasoline from the east end of the excavation. The TPH-gasoline concentration is considered to be a *false positive*.

There is no known source at the site that the TPH-gasoline could be attributed to. In addition, subsequent soil analysis did not detect TPH-gasoline in any of the soil samples.

Subsequently, R.E. Wright Environmental, Inc. (REWEI) performed a three plus one additional well site check at the former UST location in June 1996. Two soil samples were collected from each borehole for laboratory analysis of TPH-diesel and TPH-gasoline. Sample selection included the interval exhibiting the highest organic vapor content and the interval directly above the water table. Concentrations of TPH-diesel were identified in sample 79GW03 (4-6 feet) at 8.5 ppm, sample 79GW04 (6-8 feet) at 9.3 ppm, and 79GW04 (10-12 feet) at 550 ppm. There was no detection of TPH-gasoline from any of the soil samples analyzed. Depth to ground water was approximately 10 feet below ground surface.

4.0 GROUND WATER QUALITY

As part of the site check performed in June 1996 by REWEI, four monitoring wells were installed to the south, east, north, and west of the former UST basin. Ground water analysis included: EPA Method 602 (Volatiles), EPA Method 625 (Semi-volatiles), and EPA Method 200.7 (lead). No target compounds were identified from wells 79GW01, 79GW02, 79GW03, and 79GW04.

Ground water samples have been collected periodically from this site as part of Cherry Point's long term monitoring program. There has been no detection of target compounds from wells 79GW02, 79GW03, and 79GW04 from the periodic monitoring events (January 1998, November 1998, and March 1999). Well 79GW01 was removed in 1997 during a demolition project.

5.0 REMEDIATION

During November 1999, McLaren/Hart, Inc. performed remediation activities of the former UST basin, which included excavation of contaminated soil, verification sampling, backfilling, and installation of a replacement monitoring well. Clean overburden soils were first removed and stockpiled for later backfilling purposes. The excavation process was guided by visual observations and organic vapor screening. Excavated contaminated soils were temporarily staged prior to off-site disposal. Approximately 170.77 tons of soil was transported to Oak Hill Farms in Autryville, North Carolina for disposal under permit (#SR 0600039). The excavation dimensions were approximately 30 feet by 30 feet with depths of four feet (west end) to 14 feet (east end).

During the excavation, a six-inch diameter tile drain pipe was encountered at approximately 10 feet below land surface at the southern edge. The drain appeared inactive and unconnected to other piping. The exposed end of the pipe was clogged with a black, tar-like material. The material was removed and placed with the potentially

contaminated soils. Approximately 1,500 gallons of nuisance water from the excavation was collected, transported, and discharged to the Building 4075 treatment system.

A total of seven verification samples were collected from the sidewalls and bottom of the excavation. The samples were analyzed by EPA Methods 8260, 8270, and the Massachusetts Department of Environmental Protection (MADEP) petroleum hydrocarbon fractions.

Results of the analyses revealed below quantitation limits (BQL) for all target analytes. The results are summarized in Tables 1 through 4. Laboratory data is provided in Appendix A.

Subsequent to the soil excavation, one ground water monitoring well (79GW05) was installed (February 2, 2000) to replace monitoring wells (79GW02, 79GW03, and 79GW04) which were removed during excavation activities. Well 79GW05 is located near the previous location of 79GW04. The well was installed to a depth of 25 feet below land surface. The monitoring well was constructed of four-inch diameter PVC riser and screened from 10-25 feet. A ground water sample was collected from this well (February 14, 2000) and analyzed for volatiles (EPA Method 602) and polynuclear aromatic hydrocarbons (EPA Method 610). There was no evidence of free product accumulation at the time of sampling.

Results of the analyses revealed BQL for all target analytes. The laboratory results are summarized in Tables 5 and 6. Laboratory data is provided in Appendix A. Free product was not found in replacement well 79GW05 when gauged on February 14, 2000. A subsequent gauging event of well 79GW05 on October 19, 2000 by the Environmental Affairs Department Staff did not reveal the presence of free product.

6.0 RISK CLASSIFICATION AND LAND USE EVALUATION

NCDENR "Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater" Volume II, Petroleum Underground Storage Tanks January 2, 1998

Limited Site Assessment Risk Classification and Land Use Form

Part I - Groundwater/Surface Water/Vapor Impacts

High Risk

1. Has the discharge or release contaminated any water supply well including any used for non-drinking purposes? **YES/NO**
If yes, explain.

No. There is no documentation of a dissolved ground water contamination plume at this site. Based on the "Wellhead Protection Program" map provided by MCAS Cherry Point, no water supply wells are located in this area.

2. Is a water supply well used for drinking water located within 1000 feet of the source area the discharge or release? YES/NO

No. Based on the "Wellhead Protection Program" map provided by MCAS Cherry Point, the nearest drinking water well is located approximately 3,500 feet to the southwest of the subject site.

3. 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? YES/NO

No. Based on the "Wellhead Protection Program" map provided by MCAS Cherry Point, the nearest supply well is located 3,500 feet to the southwest of the site.

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

No. There are an adequate number of locations for additional water supply wells to be installed on other portions of the Base.

5. 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? YES/NO
If yes, explain.

No. Review of previous environmental reports does not provide evidence to suggest the potential threat of explosion because of accumulation of vapors in a confined space or pose any other serious threat to public health, public safety, or the environment.

6. 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? YES/NO
If yes, explain.

No. Review of previous environmental reports does not provide evidence to suggest other factors that would cause the discharge or release to pose an imminent danger to public safety, public health or the environment.

Intermediate Risk

7. Is a surface water body located within 500 feet of the source area of the discharge or release? YES/NO

Yes. Slocum Creek is located within 500 feet of the source area.

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?

YES/NO

No. Based on review of environmental reports, there has been no detection of target compounds from ground water sampling analysis.

8. Is the source area of the discharge or release located within a designated wellhead protection area as defined in 42 USC 300h-7(e)? YES/NO

If yes, explain.

No. Wellhead protection areas have not been designated by the State for this area. However, MCAS Cherry Point has identified proposed wellhead protection areas on the Base. The site is not located in a proposed wellhead protection area.

9. 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? YES/NO

YES/NO

Yes. The site is located in the Coastal Plain physiographic region.

If yes, is the source area of the discharge or release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? YES/NO

If yes, explain.

While there is likely recharge to the unconfined surficial aquifer, this aquifer is not used for water supply. Deep aquifers may obtain a portion of recharge from the surficial aquifer; however, the amount of recharge provided by the surficial aquifer is expected to be substantially limited due to the presence of confining units. Additionally, dissolved petroleum constituents were not detected at concentration above the North Carolina Groundwater Quality Standards from the monitoring wells at this site.

10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels established (See Table 7) by the Department. YES/NO

No. A review of previous environmental reports does not identify the presence of components in excess of the gross contaminant levels.

Part II - Land Use

Property Containing Source Area of Discharge or Release

The questions below pertain to the property containing the source area of the release.

1. Does the property contain one or more primary or secondary residences (permanent or temporary)? YES/NO
Explain.

No. The site is located in a sparsely developed area of the MCAS, where residences are not located.

2. Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly? YES/NO
Explain.

No. The site is located in a sparsely developed area of the MCAS and does not include a school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly.

3. Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped? YES/NO
Explain.

Yes. The site is used for operation of an adjacent aboveground storage tank and generator.

4. Do children visit the property? YES/NO
Explain.

No. The site is located in a secured area used for MCAS operations. Children are not permitted in this area.

5. Is access to the property reliably restricted consistent with its use (e.g., fences, security personnel or both)? YES/NO
Explain.

Yes. The site is located within a secured area related to MCAS operations. Unauthorized personnel are not permitted in the area.

6. Do pavement, buildings, or other structures cap the contaminated soil? YES/NO
Explain.

No. The site is covered with grass.

If yes, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future?

7. What is the zoning status of the property?

MCAS Cherry Point is not subject to local or county zoning requirements.

8. Is the use of the property likely to change in the next 20 years? YES/NO
Explain.

No. The designated use of the facility at the MCAS is not likely to change in the foreseeable future.

Property Surrounding Source Area of Discharge or Release

The questions below pertain to the area within 1500 feet of the source area of the discharge or release (excludes property containing source area of the release):

11. What is the distance from the source area of the release to the nearest primary or secondary residence (permanent or temporary)?

Based on a review of maps and aerial photographs, there appears to be no residential structures within 1,500 feet of the site.

12. What is the distance from the source area of the release to the nearest school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?

Based on a review of maps and aerial photographs there appears to be no places of public assembly within 1,500 feet of the site.

13. What is the zoning status of properties in the surrounding area?

MCAS Cherry Point is not subject to local or county zoning requirements. However, the surrounding area is primarily undeveloped.

14. Briefly characterize the use and activities of the land in the surrounding area.

Undeveloped land with a large electric substation approximately 500 feet to the west.

7.0 CONCLUSIONS/RECOMMENDATIONS

The information presented above demonstrates that secondary sources of petroleum contamination (soil and free product) are no longer present at the site. Soil excavation with confirmation sampling (soil and ground water) performed in November 1999 and February 2000 in accordance with the "Risk Based Corrective Action Rule" and Groundwater Section "Guidelines for the Investigation and Remediation of Soil and Groundwater, Volume II did not indicate the presence of soil or ground water contamination above the laboratory practical quantitation limits. Free product was not measured in monitoring well 79GW05 on February 14, 2000 following the November 1999 excavation activities.

Given this data, Marine Corps Air Station Cherry Point requests that the Building 3904 site, Incident No. 15120 be granted "No Further Action" status.

TABLES

**TABLE 1
(PAGE 1 OF 2)**

**SUMMARY OF LABORATORY RESULTS* - SOIL
HALOGENATED AND AROMATIC VOLATILES - EPA METHOD 8260B**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	Residential MSCC	Industrial/ Commercial MSCC	STGW MSCC	North Bottom	North Side	West Side
DATE SAMPLED				11/19/99	11/19/99	11/19/99
COMPOUND						
All Compounds**	Varies	Varies	Varies	BQL	BQL	BQL

* All results in ug/Kg (ppb).

** All compounds listed in attached laboratory analytical results.

BQL = Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

MSCC Maximum Soil Contaminant Concentrations. Converted to ppb for data comparison.

STGW = Soil to Ground Water.

NE = None Established.

Shaded areas indicate concentrations above the lowest of the MSCCs.

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

TABLE 1
(PAGE 2 OF 2)

SUMMARY OF LABORATORY RESULTS* - SOIL
HALOGENATED AND AROMATIC VOLATILES - EPA METHOD 8260B

BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA

	Residential MSCC	Industrial/ Commercial MSCC	STGW MSCC	South Bottom	South Side	East Side	South Side II
DATE SAMPLED				11/19/99	11/19/99	11/19/99	11/19/99
COMPOUND							
All Compounds**	Varies	Varies	Varies	BQL	BQL	BQL	BQL

* All results in ug/Kg (ppb).

** All compounds listed in attached laboratory analytical results.

BQL = Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

MSCC Maximum Soil Contaminant Concentrations. Converted to ppb for data comparison.

STGW = Soil to Ground Water.

NE = None Established.

Shaded areas indicate concentrations above the lowest of the MSCCs.

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

**TABLE 2
(PAGE 1 OF 2)**

**SUMMARY OF LABORATORY RESULTS* - SOIL
BASE/NEUTRAL EXTRACTABLES - EPA METHOD 8270**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	Residential MSCC	Industrial/ Commercial MSCC	STGW MSCC	North Bottom	North Side	West Side
DATE SAMPLED				11/19/99	11/19/99	11/19/99
COMPOUND						
All Compounds**	Varies	Varies	Varies	BQL	BQL	BQL

* All results in ug/Kg (ppb).

** All compounds listed in attached laboratory analytical results.

BQL = Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

MSCC Maximum Soil Contaminant Concentrations. Converted to ppb for data comparison.

STGW = Soil to Ground Water.

NE = None Established.

Shaded areas indicate concentrations above the lowest of the MSCCs.

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

**TABLE 2
(PAGE 2 OF 2)**

**SUMMARY OF LABORATORY RESULTS* - SOIL
BASE/NEUTRAL EXTRACTABLES - EPA METHOD 8270**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	Residential MSCC	Industrial/ Commercial MSCC	STGW MSCC	South Bottom	South Side	East Side
DATE SAMPLED				11/19/99	11/19/99	11/19/99
COMPOUND						
All Compounds**	Varies	Varies	Varies	BQL	BQL	BQL

* All results in ug/Kg (ppb).

** All compounds listed in attached laboratory analytical results.

BQL = Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

MSCC Maximum Soil Contaminant Concentrations. Converted to ppb for data comparison.

STGW = Soil to Ground Water.

NE = None Established.

Shaded areas indicate concentrations above the lowest of the MSCCs.

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

TABLE 3

**SUMMARY OF LABORATORY RESULTS - SOIL
MADEP VPH/EPH**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	North Bottom	North Side	West Side	South Bottom	South Side	South Side II	East Side
DATE SAMPLED	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99	11/19/99
VPH (ug/Kg)							
C5-C8 Aliphatics	<500	<500	<500	<500	<500	<500	<500
C9-C12 Aliphatics	<500	<500	<500	<500	<500	<500	<500
C9-C10 Aromatics	<500	<500	<500	<500	<500	<500	<500
EPH (mg/Kg)							
C9-C18 Aliphatics	<10	<10	<10	<10	<10	NA	<10
C19-C36 Aliphatics	<10	<10	<10	<10	<10	NA	<10
C11-C22 Aromatics	<10	<10	<10	<10	<10	NA	<10

NA = Not Analyzed

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

**TABLE 4
(PAGE 1 OF 2)**

**SUMMARY OF LABORATORY RESULTS - SOIL
MADEP VPH/EPH*
AS COMPARED TO NCDENR MSCCs**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	Toxicologically Defined Hydrocarbon Fractions	Res. MSCC I/C MSCC STGW MSCC	North Bottom	North Side	West Side
DATE SAMPLED			11/19/99	11/19/99	11/19/99
ANALYTICAL FRACTIONS					
C5-C8 Aliphatics	C5-C8 Aliphatics	939 24,528 72	<0.5	<0.5	<0.5
C9-C12 Aliphatics C9-C18 Aliphatics	C9-C18 Aliphatics	9,386 245,280 3,255	<10.5	<10.5	<10.5
C19-C36 Aliphatics	C19-C36 Aliphatics	93,860 Health-Based Level (>100%) Considered Immobile	<10	<10	<10
C9-C10 Aromatics C11-C22 Aromatics	C9-C22 Aromatics	469 12,264 34	<10.5	<10.5	<10.5

* = Sum of VPH and EPH concentrations in mg/Kg (ppm)
 For data comparison, the MSCCs and VPH results have been converted to ppm.
 Res. = Residential
 I/C = Industrial/Commercial
 STGW = Soil to Ground Water
 MSCC = Maximum Soil Contaminant Concentration
 Shaded areas indicated concentration above lowest of the MSCCs.
 < = Less than practical quantitation limit
 All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

**TABLE 4
(PAGE 2 OF 2)**

**SUMMARY OF LABORATORY RESULTS - SOIL
MADEP VPH/EPH*
AS COMPARED TO NCDENR MSCCs**

**BUILDING 3904
MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA**

	Toxicologically Defined Hydrocarbon Fractions	Res. MSCC I/C MSCC STGW MSCC	South Bottom	South Side	South Side II	East Side
DATE SAMPLED			11/19/99	11/19/99	11/19/99	11/19/99
ANALYTICAL FRACTIONS						
C5-C8 Aliphatics	C5-C8 Aliphatics	939 24,528 72	<0.5	<0.5	<0.5	<0.5
C9-C12 Aliphatics C9-C18 Aliphatics	C9-C18 Aliphatics	9,386 245,280 3,255	<10.5	<10.5	<0.5	<10.5
C19-C36 Aliphatics	C19-C36 Aliphatics	93,860 Health-Based Level (>100%) Considered Immobile	<10	<10	NA	<10
C9-C10 Aromatics C11-C22 Aromatics	C9-C22 Aromatics	469 12,264 34	<10.5	<10.5	<10.5	<10.5

* = Sum of VPH and EPH concentrations in mg/Kg (ppm)

MSCC = Maximum Soil Contaminant Concentration

Shaded areas indicated concentration above lowest of the MSCCs.

< = Less than practical quantitation limit

For data comparison, the MSCCs and VPH results have been converted to ppm.

All samples collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

Res. = Residential

I/C = Industrial/Commercial

STGW = Soil to Ground Water

NA = Not Analyzed

TABLE 5 SUMMARY OF LABORATORY RESULTS - GROUND WATER* PURGEABLE AROMATICS - EPA METHOD 602** BUILDING 3904 MARINE CORPS AIR STATION CHERRY POINT, NORTH CAROLINA			
	GCL	NC GROUND WATER STANDARD	79GW05
DATE SAMPLED			2/14/00
ANALYTE			
All Compounds**	Varies	Varies	BQL

* All results in ug/L (ppb)

** All target compounds listed in Laboratory analytical results in Appendix A.

GCL Gross Contaminant Level, January 2, 1998 NCDENR Guidelines

BQL Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

Sample collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

TABLE 6 SUMMARY OF LABORATORY RESULTS - GROUND WATER* POLYNUCLEAR AROMATIC HYDROCARBONS - EPA METHOD 610** BUILDING 3904 MARINE CORPS AIR STATION CHERRY POINT, NORTH CAROLINA			
	GCL	NC GROUND WATER STANDARD	79GW05
DATE SAMPLED			2/14/00
ANALYTE			
All Compounds**	Varies	Varies	BQL

* All results in ug/L (ppb)

** All target compounds listed in Laboratory analytical results in Appendix A.

GCL Gross Contaminant Level, January 2, 1998 NCDENR Guidelines

BQL Below Quantitation Limits, refer to laboratory report for compound-specific quantitation limits.

Sample collected by McLaren/Hart and analyzed by Paradigm Analytical Laboratories, Inc.

APPENDIX

APPENDIX A

LABORATORY REPORTS

PARADIGM ANALYTICAL LABORATORIES, INC.

Facsimile Cover Sheet

Results enclosed



TO: Bill Buccelle
Name Company Fax Number

FROM: Ashley
Name

DATE: 4/19/00

RE: _____

COMMENTS

8260's you requested, if you need anything else please let me know.

called
4-20-00
@ 1:30
OK

Thank you
Ashley Z

CAN FR 8270?

Please call (910) 350-1903 regarding any problems with this transmission.

Paradigm Analytical Laboratories
2627 Northchase Parkway SE
Wilmington, NC 28405
Fax: (910) 350-1557

Cover Sheet + _____ Pages

PARADIGM ANALYTICAL LABORATORIES, INC.

acsimile Cover Sheet

Results enclosed

TO: ~~David Miller~~ 412 395-1410
Name Company Fax Number

FROM: Ashley
Name

DATE: 4/29/00

RE: _____

COMMENTS

8270's you registered, if you need anything else please let me know.

Thank you
Ashley

Please call (910) 350-1903 regarding any problems with this transmission.

Paradigm Analytical Laboratories
2627 Northchase Parkway SE
Wilmington, NC 28405
Fax: (910) 350-1557

Cover Sheet + _____ Pages



Paradigm

PAGE 1 OF 2 QUOTE # 449 Springbrook Road Charlotte, NC 28217 P.O. Box 240543 Charlotte, NC 28224-0543 Phone: 704/529-6364 Fax: 704/525-0409

F-457 P-18/19 T-572

Service Analytical & Environmental Solutions

Client: JA Jones/McLaren Hart Physical Address: 6135 Park South Drive Suite 300 Charlotte, NC 28210 Phone: 704-553-3330 Billing Reference: 9063-002-945863-7 Project Name: Building 3904-70103

PRESS DOWN FIRMLY - 3 COPIES

REPORT TO: Name: Bill Beville-McLaren Hart Address: 2 North Trade Suite 100 Pittsburgh, PA 15212 BILL TO: Name: Pittsburgh, PA 15212 Address: Requested Due Date: J.A. Jones

Checklist table with columns YES/NA and rows: Sampled INTACT upon arrival?, Received ON WET ICE? Temp 0.4, PROPER PRESERVATIVES indicated?, Received WITHIN HOLDING TIMES?, CUSTODY SEALS INTACT?, VOLATILES rec'd W/OUT HEADSPACE?, PROPER CONTAINERS used?

State Certification Requested: NC SC Other NA Water Chlorinated: Yes No NA Sample Iced Upon Collection: Yes No

(SEE REVERSE SIDE FOR RUSH TURNAROUND FEES)

9103501557

From-PARADIGM LABS

Nov-29-99 12:55pm

Main data table with columns: CLIENT SAMPLE DESCRIPTION, DATE COLLECTED, TIME COLLECTED MILITARY HOURS, MATRIX (SOIL, WATER OR SLUDGE), SAMPLE CONTAINER (TYPE, NO., SIZE), PRESERVATIVES, ANALYSES REQUESTED (8260, 8210, EPA, VPA), REMARKS, SUB LAB CERT. ID NO., PRISM LAB ID NO.

Sampler's Signature: Willard Whitwell Sampled By (Print Name): Willard Whitwell Affiliation: Engineer

Signature and receipt table with columns: Released By (Signature), Received By (Signature), Date, Military Hours, Received For Prism Laboratories By, Date, Log-In Group No.

Additional Comments: 67182-427

DES: NC, SC, OTHER; UST: NC, SC, OTHER; GROUNDWATER: NC, SC, OTHER; DRINKING WATER: NC, SC, OTHER; SOLID WASTE: NC, SC, OTHER; OTHER: NC, SC, OTHER

CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

9103501557

11-29-99 11:54AM P018 #39



Paradigm

449 Springbrook Road Charlotte, NC 28217
P.O. Box 240543 Charlotte, NC 28224-0543
Phone: 704/529-6364 Fax: 704/525-0409

PRESS DOWN FIRMLY - 3 COPIES

Samples INTACT upon arrival?	YES	NA
Received ON WET ICE? Temp <u>0.4</u>		
PROPER PRESERVATIVES indicated?		
Received WITHIN HOLDING TIMES?		
CUSTODY SEALS INTACT?		
VOLATILES rec'd W/OUT HEADSPACE?		
PROPER CONTAINERS used?		

F-457
P. 18/19
T-572
F-572

Client Name: JA Jones
Physical Address: _____
City: _____
State: _____ Zip: _____
Phone: _____ Fax: _____
Billing Reference: _____
Project Name: _____

REPORT TO: Name _____
Address _____
Name _____
Address _____
Requested Due Date _____

State Certification
Requested NC _____ SC _____ Other _____ NA _____
Water Chlorinated Yes _____ No _____ NA _____
Sample Iced Upon Collection Yes _____ No _____

(SEE REVERSE SIDE FOR RUSH TURNAROUND FEES)

8103501557

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	SUB LAB CERT. ID NO.	PRISM LAB ID NO.
				TYPE SEE BELOW	NO.	SIZE		8260	8270	EPH	YPH			
East Side	11/19/99	9:45	Soil	A	2	4oz	-	X	X	X				
East Side	11/19/99	9:45	Ag	VOA	2	40ml	MFOH				X			
South Side II	11/19/99	12:00	Soil	A	1	4oz	-	X						
South Side II	11/19/99	12:00	Ag	VOA	2	40ml	MFOH				X			

From-PARADIGM LABS

Nov-29-99 12:55pm

Sampler's Signature: Willard Whitecell Sampled By (Print Name): Willard Whitecell Affiliation: Engineer

Relinquished By: (Signature) <u>Willard Whitecell</u>	Received By: (Signature) <u>[Signature]</u>	Date: <u>11/20/99</u>	Military Hours: <u>1015</u>
Relinquished By: (Signature)	Received By: (Signature)	Date:	
Relinquished By: (Signature)	Received For Prism Laboratories By:	Date:	
Method of Shipment		Log-In Group No.	

Additional Comments
6182-427

PDES NC _____ UST: NC _____ GROUNDWATER: NC _____ DRINKING WATER: NC _____ SOLID WASTE: NC _____ OTHER: NC _____
SC _____ SC _____ SC _____ SC _____ SC _____ SC _____
OTHER _____ OTHER _____ OTHER _____ OTHER _____

CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

11-29-99 11:54AM P019 #39

9103501557

R=99%

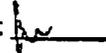
Results for Volatiles
by GCMS 8280B

Client Sample ID: North Bottom
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76392
Lab Project ID: G182-427
Matrix: Soil

%Solids: 78.2

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	64	BQL
Acrolein	130	BQL
Acrylonitrile	130	BQL
Benzene	6.4	BQL
Bromobenzene	6.4	BQL
Bromochloromethane	6.4	BQL
Bromodichloromethane	6.4	BQL
Bromoform	6.4	BQL
Bromomethane	6.4	BQL
2-Butanone	32	BQL
n-Butylbenzene	6.4	BQL
sec-Butylbenzene	6.4	BQL
tert-Butylbenzene	6.4	BQL
Carbon disulfide	6.4	BQL
Carbon tetrachloride	6.4	BQL
Chlorobenzene	6.4	BQL
Chloroethane	6.4	BQL
2-Chloroethyl vinyl ether	6.4	BQL
Chloroform	6.4	BQL
Chloromethane	6.4	BQL
2-Chlorotoluene	6.4	BQL
4-Chlorotoluene	6.4	BQL
Dibromochloromethane	6.4	BQL
1,2-Dibromo-3-chloropropane	6.4	BQL
Dibromomethane	6.4	BQL
1,2-Dibromoethane (EDB)	6.4	BQL
1,2-Dichlorobenzene	6.4	BQL
1,3-Dichlorobenzene	6.4	BQL
1,4-Dichlorobenzene	6.4	BQL
trans-1,4-Dichloro-2-butene	6.4	BQL
1,1-Dichloroethane	6.4	BQL
1,1-Dichloroethene	6.4	BQL
1,2-Dichloroethane	6.4	BQL
cis-1,2-Dichloroethene	6.4	BQL
trans-1,2-dichloroethene	6.4	BQL
1,2-Dichloropropane	6.4	BQL
1,3-Dichloropropane	6.4	BQL
2,2-Dichloropropane	6.4	BQL
1,1-Dichloropropene	6.4	BQL
cis-1,3-Dichloropropene	6.4	BQL
trans-1,3-Dichloropropene	6.4	BQL
Dichlorodifluoromethane	6.4	BQL
Diisopropyl ether (DIPE)	6.4	BQL
Ethylbenzene	6.4	BQL
Hexachlorobutadiene	6.4	BQL
2-Hexanone	6.4	BQL
Iodomethane	6.4	BQL
Isopropylbenzene	6.4	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 1 of 2

PARADIGM ENVIRONMENTAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: North Bottom
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76392
 Lab Project ID: G182-427

Date Analyzed: 11/23/99
 Analyzed By: RNP
 Date Collected: 11/19/99
 Date Received: 11/20/99
 Dilution: 1

Matrix: Soil %Solids: 78.2

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
4-Isopropyltoluene	6.4	BQL
Methylene chloride	26	BQL
4-Methyl-2-pentanone	6.4	BQL
Methyl-tert-butyl ether (MTBE)	6.4	BQL
Naphthalene	6.4	BQL
n-Propyl benzene	6.4	BQL
Styrene	6.4	BQL
1,1,1,2-Tetrachloroethane	6.4	BQL
1,1,2,2-Tetrachloroethane	6.4	BQL
Tetrachloroethene	6.4	BQL
Toluene	6.4	BQL
1,2,3-Trichlorobenzene	6.4	BQL
1,2,4-Trichlorobenzene	6.4	BQL
Trichloroethene	6.4	BQL
1,1,1-Trichloroethane	6.4	BQL
1,1,2-Trichloroethane	6.4	BQL
Trichlorofluoromethane	6.4	BQL
1,2,3-Trichloropropane	6.4	BQL
1,2,4-Trimethylbenzene	6.4	BQL
1,3,5-Trimethylbenzene	6.4	BQL
Vinyl chloride	6.4	BQL
m-,p-Xylene	13	BQL
o-Xylene	6.4	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	50.5	101
1,2-Dichloroethane-d4	50	54.2	108
Toluene-d8	50	50.5	101

Comments:

All results are corrected for dilution.

Reviewed by: hw

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260B

Client Sample ID: West Side
Client Project ID: Building 3904-TO 63
Lab Sample ID: 76393
Lab Project ID: G182-427
Matrix: Soil %Solids: 83.1

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	BQL
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 1 of 2

Results for Volatiles

by GCMS 8260B

Client Sample ID: West Side
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76393
 Lab Project ID: G182-427
 Matrix: Soil

Date Analyzed: 11/23/99
 Analyzed By: RNP
 Date Collected: 11/19/99
 Date Received: 11/20/99
 Dilution: 1

%Solids: 83.1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
4-Isopropyltoluene	6	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	BQL
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	BQL
1,3,5-Trimethylbenzene	6	BQL
Vinyl chloride	6	BQL
m-,p-Xylene	12	BQL
o-Xylene	6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	48.0	96
1,2-Dichloroethane-d4	50	55.3	111
Toluene-d8	50	50.7	101

Comments:

All results are corrected for dilution.

Reviewed by:

Flags: BQL = Below Quantitation Limit

Results for Volatiles
by GCMS 8260B

Client Sample ID: South Bottom
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76394
Lab Project ID: G182-427
Matrix: Soil %Solids: 78.7

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	64	BQL
Acrolein	130	BQL
Acrylonitrile	130	BQL
Benzene	6.4	BQL
Bromobenzene	6.4	BQL
Bromochloromethane	6.4	BQL
Bromodichloromethane	6.4	BQL
Bromoform	6.4	BQL
Bromomethane	6.4	BQL
2-Butanone	32	BQL
n-Butylbenzene	6.4	BQL
sec-Butylbenzene	6.4	BQL
tert-Butylbenzene	6.4	BQL
Carbon disulfide	6.4	BQL
Carbon tetrachloride	6.4	BQL
Chlorobenzene	6.4	BQL
Chloroethane	6.4	BQL
2-Chloroethyl vinyl ether	6.4	BQL
Chloroform	6.4	BQL
Chloromethane	6.4	BQL
2-Chlorotoluene	6.4	BQL
4-Chlorotoluene	6.4	BQL
Dibromochloromethane	6.4	BQL
1,2-Dibromo-3-chloropropane	6.4	BQL
Dibromomethane	6.4	BQL
1,2-Dibromoethane (EDB)	6.4	BQL
1,2-Dichlorobenzene	6.4	BQL
1,3-Dichlorobenzene	6.4	BQL
1,4-Dichlorobenzene	6.4	BQL
trans-1,4-Dichloro-2-butene	6.4	BQL
1,1-Dichloroethane	6.4	BQL
1,1-Dichloroethene	6.4	BQL
1,2-Dichloroethane	6.4	BQL
cis-1,2-Dichloroethene	6.4	BQL
trans-1,2-dichloroethene	6.4	BQL
1,2-Dichloropropane	6.4	BQL
1,3-Dichloropropane	6.4	BQL
2,2-Dichloropropane	6.4	BQL
1,1-Dichloropropene	6.4	BQL
cis-1,3-Dichloropropene	6.4	BQL
trans-1,3-Dichloropropene	6.4	BQL
Dichlorodifluoromethane	6.4	BQL
Diisopropyl ether (DIPE)	6.4	BQL
Ethylbenzene	6.4	BQL
Hexachlorobutadiene	6.4	BQL
2-Hexanone	6.4	BQL
Iodomethane	6.4	BQL
Isopropylbenzene	6.4	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 1 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: South Bottom
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76394
 Lab Project ID: G182-427
 Matrix: Soil %Solids: 78.7

Date Analyzed: 11/23/99
 Analyzed By: RNP
 Date Collected: 11/18/99
 Date Received: 11/20/99
 Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
4-Isopropyltoluene	6.4	BQL
Methylene chloride	25	BQL
4-Methyl-2-pentanone	6.4	BQL
Methyl-tert-butyl ether (MTBE)	6.4	BQL
Naphthalene	6.4	BQL
n-Propyl benzene	6.4	BQL
Styrene	6.4	BQL
1,1,1,2-Tetrachloroethane	6.4	BQL
1,1,1,2,2-Tetrachloroethane	6.4	BQL
Tetrachloroethene	6.4	BQL
Toluene	6.4	BQL
1,2,3-Trichlorobenzene	6.4	BQL
1,2,4-Trichlorobenzene	6.4	BQL
Trichloroethene	6.4	BQL
1,1,1-Trichloroethane	6.4	BQL
1,1,2-Trichloroethane	6.4	BQL
Trichlorofluoromethane	6.4	BQL
1,2,3-Trichloropropane	6.4	BQL
1,2,4-Trimethylbenzene	6.4	BQL
1,3,5-Trimethylbenzene	6.4	BQL
Vinyl chloride	6.4	BQL
m-,p-Xylene	13	BQL
o-Xylene	6.4	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	47.0	94
1,2-Dichloroethane-d4	50	55.2	110
Toluene-d8	50	50.2	100

Comments:

All results are corrected for dilution.

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 2 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: North Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76395
Lab Project ID: G182-427

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/18/99
Date Received: 11/20/99
Dilution: 1

Matrix: Soil %Solids: 84.9

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	59	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.9	BQL
Bromobenzene	5.9	BQL
Bromochloromethane	5.9	BQL
Bromodichloromethane	5.9	BQL
Bromoform	5.9	BQL
Bromomethane	5.9	BQL
2-Butanone	20	BQL
n-Butylbenzene	5.9	BQL
sec-Butylbenzene	5.9	BQL
tert-Butylbenzene	5.9	BQL
Carbon disulfide	5.9	BQL
Carbon tetrachloride	5.9	BQL
Chlorobenzene	5.9	BQL
Chloroethane	5.9	BQL
2-Chloroethyl vinyl ether	5.9	BQL
Chloroform	5.9	BQL
Chloromethane	5.9	BQL
2-Chlorotoluene	5.9	BQL
4-Chlorotoluene	5.9	BQL
Dibromochloromethane	5.9	BQL
1,2-Dibromo-3-chloropropane	5.9	BQL
Dibromomethane	5.9	BQL
1,2-Dibromoethane (EDB)	5.9	BQL
1,2-Dichlorobenzene	5.9	BQL
1,3-Dichlorobenzene	5.9	BQL
1,4-Dichlorobenzene	5.9	BQL
trans-1,4-Dichloro-2-butene	5.9	BQL
1,1-Dichloroethane	5.9	BQL
1,1-Dichloroethene	5.9	BQL
1,2-Dichloroethane	5.9	BQL
cis-1,2-Dichloroethene	5.9	BQL
trans-1,2-dichloroethene	5.9	BQL
1,2-Dichloropropane	5.9	BQL
1,3-Dichloropropane	5.9	BQL
2,2-Dichloropropane	5.9	BQL
1,1-Dichloropropene	5.9	BQL
cis-1,3-Dichloropropene	5.9	BQL
trans-1,3-Dichloropropene	5.9	BQL
Dichlorodifluoromethane	5.9	BQL
Diisopropyl ether (DIPE)	5.9	BQL
Ethylbenzene	5.9	BQL
Hexachlorobutadiene	5.9	BQL
2-Hexanone	5.9	BQL
Iodomethane	5.9	BQL
Isopropylbenzene	5.9	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

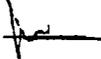
Page 1 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: South Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76396
Lab Project ID: G182-427
Matrix: Soil %Solids: 83.0

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromofom	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	BQL
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 1 of 2

Results for Volatiles
by GCMS 82608

Client Sample ID: South Side
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76396
 Lab Project ID: G182-427
 Matrix: Soil

%Solids: 83.9

Date Analyzed: 11/23/99
 Analyzed By: RNP
 Date Collected: 11/19/99
 Date Received: 11/20/99
 Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
4-Isopropyltoluene	6	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	BQL
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	BQL
1,3,5-Trimethylbenzene	6	BQL
Vinyl chloride	6	BQL
m-,p-Xylene	12	BQL
o-Xylene	6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	47.7	95
1,2-Dichloroethane-d4	50	52.4	105
Toluene-d8	50	48.4	99

Comments:

All results are corrected for dilution.

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 2 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: East Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76397
Lab Project ID: G182-427
Matrix: Soil %Solids: 84.2

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	59	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.9	BQL
Bromobenzene	5.9	BQL
Bromochloromethane	5.9	BQL
Bromodichloromethane	5.9	BQL
Bromoform	5.9	BQL
Bromomethane	5.9	BQL
2-Butanone	30	BQL
n-Butylbenzene	5.9	BQL
sec-Butylbenzene	5.9	BQL
tert-Butylbenzene	5.9	BQL
Carbon disulfide	5.9	BQL
Carbon tetrachloride	5.9	BQL
Chlorobenzene	5.9	BQL
Chloroethane	5.9	BQL
2-Chloroethyl vinyl ether	5.9	BQL
Chloroform	5.9	BQL
Chloromethane	5.9	BQL
2-Chlorotoluene	5.9	BQL
4-Chlorotoluene	5.9	BQL
Dibromochloromethane	5.9	BQL
1,2-Dibromo-3-chloropropane	5.9	BQL
Dibromomethane	5.9	BQL
1,2-Dibromoethane (EDB)	5.9	BQL
1,2-Dichlorobenzene	5.9	BQL
1,3-Dichlorobenzene	5.9	BQL
1,4-Dichlorobenzene	5.9	BQL
trans-1,4-Dichloro-2-butene	5.9	BQL
1,1-Dichloroethane	5.9	BQL
1,1-Dichloroethene	5.9	BQL
1,2-Dichloroethane	5.9	BQL
cis-1,2-Dichloroethene	5.9	BQL
trans-1,2-dichloroethene	5.9	BQL
1,2-Dichloropropane	5.9	BQL
1,3-Dichloropropane	5.9	BQL
2,2-Dichloropropane	5.9	BQL
1,1-Dichloropropene	5.9	BQL
cis-1,3-Dichloropropene	5.9	BQL
trans-1,3-Dichloropropene	5.9	BQL
Dichlorodifluoromethane	5.9	BQL
Diisopropyl ether (DIPE)	5.9	BQL
Ethylbenzene	5.9	BQL
Hexachlorobutadiene	5.9	BQL
2-Hexanone	5.9	BQL
Iodomethane	5.9	BQL
Isopropylbenzene	5.9	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

Page 1 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: East Side
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76397
 Lab Project ID: G182-427
 Matrix: Soil %Solids: 84.2

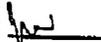
Date Analyzed: 11/23/99
 Analyzed By: RNP
 Date Collected: 11/19/99
 Date Received: 11/20/99
 Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
4-Isopropyltoluene	5.9	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	5.9	BQL
Methyl-tert-butyl ether (MTBE)	5.9	BQL
Naphthalene	5.9	BQL
n-Propyl benzene	5.9	BQL
Styrene	5.9	BQL
1,1,1,2-Tetrachloroethane	5.9	BQL
1,1,2,2-Tetrachloroethane	5.9	BQL
Tetrachloroethene	5.9	BQL
Toluene	5.9	BQL
1,2,3-Trichlorobenzene	5.9	BQL
1,2,4-Trichlorobenzene	5.9	BQL
Trichloroethene	5.9	BQL
1,1,1-Trichloroethane	5.9	BQL
1,1,2-Trichloroethane	5.9	BQL
Trichlorofluoromethane	5.9	BQL
1,2,3-Trichloropropane	5.9	BQL
1,2,4-Trimethylbenzene	5.9	BQL
1,3,5-Trimethylbenzene	5.9	BQL
Vinyl chloride	5.9	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.9	BQL

Surrogate Spike Recoveries	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Compound			
Bromofluorobenzene	50	48.7	97
1,2-Dichloroethane-d4	50	52.4	105
Toluene-d8	50	50.2	100

Comments:

All results are corrected for dilution.

Reviewed by: 

Flags: BQL = Below Quantitation Limit

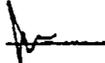
Page 2 of 2

Results for Volatiles
by GCMS 8260B

Client Sample ID: South Side II
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76398
Lab Project ID: G182-427
Matrix: Soil %Solids: 83.9

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	BQL
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL

Reviewed by: 

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC/MS 8260B

Client Sample ID: South Side II
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76398
Lab Project ID: G182-427
Matrix: Soil %Solids: 83.9

Date Analyzed: 11/23/99
Analyzed By: RNP
Date Collected: 11/19/99
Date Received: 11/20/99
Dilution: 1

Table with 3 columns: Compound, Quantitation Limit (ug/KG), and Result (ug/KG). Lists various compounds like 4-Isopropyltoluene, Methylene chloride, etc., with their respective limits and results (mostly BQL).

Surrogate Spike Recoveries

Table with 4 columns: Compound, Spike Added (ug/KG), Surrogate Result (ug/KG), and %Rec. Lists Bromofluorobenzene, 1,2-Dichloroethane-d4, and Toluene-d8.

Comments:

All results are corrected for dilution.

Reviewed by: [Signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles

by GCMS 8270

Client Sample ID: North Bottom

Date Collected: 11/19/99

Client Project ID: Building 3904-T0 63

Date Received: 11/20/99

Lab Sample ID: 76392

Date Analyzed: 11/23/99

Lab Project ID: G182-427

Analyzed By: MRC

Matrix: Soil

%Solids: 78.2

Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	350	BQL
Acenaphthylene	350	BQL
Anthracene	350	BQL
Benzidine	350	BQL
Benzo[a]anthracene	350	BQL
Benzo[a]pyrene	350	BQL
Benzo[b]fluoranthene	350	BQL
Benzo[g,h,i]perylene	350	BQL
Benzo[k]fluoranthene	350	BQL
Benzoic Acid	700	BQL
Bis(2-chloroethoxy)methane	350	BQL
Bis(2-chloroethyl)ether	350	BQL
Bis(2-chloroisopropyl)ether	350	BQL
Bis(2-ethylhexyl)phthalate	350	BQL
4-bromophenyl phenyl ether	350	BQL
Butylbenzylphthalate	350	BQL
4-Chloroaniline	350	BQL
4-Chloro-3-methylphenol	350	BQL
2-Chloronaphthalene	350	BQL
2-Chlorophenol	350	BQL
4-Chlorophenyl phenyl ether	350	BQL
Chrysene	350	BQL
Di-n-Butylphthalate	350	BQL
Di-n-octylphthalate	350	BQL
Dibenzo[a,h]anthracene	350	BQL
Dibenzofuran	350	BQL
1,2-Dichlorobenzene	350	BQL
1,3-Dichlorobenzene	350	BQL
1,4-Dichlorobenzene	350	BQL
3,3'-Dichlorobenzidine	700	BQL
2,4-Dichlorophenol	350	BQL
Diethylphthalate	350	BQL
2,4-Dimethylphenol	350	BQL
Dimethylphthalate	350	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrophenol	1800	BQL
2,4-Dinitrotoluene	350	BQL
2,6-Dinitrotoluene	350	BQL
Fluoranthene	350	BQL
Fluorene	350	BQL

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles

by GCMS 8270

Client Sample ID: North Bottom

Date Collected: 11/19/99

Client Project ID: Building 3904-T0 63

Date Received: 11/20/99

Lab Sample ID: 76392

Date Analyzed: 11/23/99

Lab Project ID: G182-427

Analyzed By: MRC

Matrix: Soil

%Solids: 78.2

Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	350	BQL
Hexachlorobutadiene	350	BQL
Hexachlorocyclopentadiene	700	BQL
Hexachloroethane	350	BQL
Indeno(1,2,3-c,d)pyrene	350	BQL
Isophorone	350	BQL
1-Methylnaphthalene	350	BQL
2-Methylnaphthalene	350	BQL
2-Methylphenol	350	BQL
4-Methylphenol	350	BQL
N-Nitrosodi-n-propylamine	350	BQL
N-Nitrosodiphenylamine	350	BQL
Naphthalene	350	BQL
2-Nitroaniline	350	BQL
3-Nitroaniline	350	BQL
4-Nitroaniline	350	BQL
Nitrobenzene	350	BQL
2-Nitrophenol	350	BQL
4-Nitrophenol	1800	BQL
Pentachlorophenol	1800	BQL
Phenanthrene	350	BQL
Phenol	350	BQL
Pyrene	350	BQL
1,2,4-Trichlorobenzene	350	BQL
2,4,5-Trichlorophenol	350	BQL
2,4,6-Trichlorophenol	350	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.3	83
2-Fluorophenol	10	8.4	84
Nitrobenzene-d5	10	8.5	85
Phenol-d6	10	8.1	81
2,4,6-Tribromophenol	10	9.2	92
4-Terphenyl-d14	10	8.9	89

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: LN

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: West Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76393
Lab Project ID: G182-427
Matrix: Soil

Date Collected: 11/19/99
Date Received: 11/20/99
Date Analyzed: 11/23/99
Analyzed By: MRC
Dilution: 1

%Solids: 83.1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	340	BQL
Acenaphthylene	340	BQL
Anthracene	340	BQL
Benzidine	340	BQL
Benzo[a]anthracene	340	BQL
Benzo[a]pyrene	340	BQL
Benzo[b]fluoranthene	340	BQL
Benzo[g,h,i]perylene	340	BQL
Benzo[k]fluoranthene	340	BQL
Benzoic Acid	680	BQL
Bis(2-chloroethoxy)methane	340	BQL
Bis(2-chloroethyl)ether	340	BQL
Bis(2-chloroisopropyl)ether	340	BQL
Bis(2-ethylhexyl)phthalate	340	BQL
4-bromophenyl phenyl ether	340	BQL
Butylbenzylphthalate	340	BQL
4-Chloroaniline	340	BQL
4-Chloro-3-methylphenol	340	BQL
2-Chloronaphthalene	340	BQL
2-Chlorophenol	340	BQL
4-Chlorophenyl phenyl ether	340	BQL
Chrysene	340	BQL
DI-n-Butylphthalate	340	BQL
DI-n-octylphthalate	340	BQL
Dibenzo[a,h]anthracene	340	BQL
Dibenzofuran	340	BQL
1,2-Dichlorobenzene	340	BQL
1,3-Dichlorobenzene	340	BQL
1,4-Dichlorobenzene	340	BQL
3,3'-Dichlorobenzidine	680	BQL
2,4-Dichlorophenol	340	BQL
Diethylphthalate	340	BQL
2,4-Dimethylphenol	340	BQL
Dimethylphthalate	340	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrophenol	1700	BQL
2,4-Dinitrotoluene	340	BQL
2,6-Dinitrotoluene	340	BQL
Fluoranthene	340	BQL
Fluorene	340	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: West Side

Date Collected: 11/19/99

Client Project ID: Building 3904-T0 63

Date Received: 11/20/99

Lab Sample ID: 76393

Date Analyzed: 11/23/99

Lab Project ID: G182-427

Analyzed By: MRC

Matrix: Soil

%Solids: 83.1

Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	340	BQL
Hexachlorobutadiene	340	BQL
Hexachlorocyclopentadiene	680	BQL
Hexachloroethane	340	BQL
Indeno(1,2,3-c,d)pyrene	340	BQL
Isophorone	340	BQL
1-Methylnaphthalene	340	BQL
2-Methylnaphthalene	340	BQL
2-Methylphenol	340	BQL
4-Methylphenol	340	BQL
N-Nitrosodi-n-propylamine	340	BQL
N-Nitrosodiphenylamine	340	BQL
Naphthalene	340	BQL
2-Nitroaniline	340	BQL
3-Nitroaniline	340	BQL
4-Nitroaniline	340	BQL
Nitrobenzene	340	BQL
2-Nitrophenol	340	BQL
4-Nitrophenol	1700	BQL
Pentachlorophenol	1700	BQL
Phenanthrene	340	BQL
Phenol	340	BQL
Pyrene	340	BQL
1,2,4-Trichlorobenzene	340	BQL
2,4,5-Trichlorophenol	340	BQL
2,4,6-Trichlorophenol	340	BQL

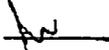
Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.2	92
2-Fluorophenol	10	8.9	89
Nitrobenzene-d5	10	9	90
Phenol-d6	10	8.6	86
2,4,6-Tribromophenol	10	10.4	104
4-Terphenyl-d14	10	10.1	101

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: South Bottom

Date Collected: 11/19/99

Client Project ID: Building 3904-T0 63

Date Received: 11/20/99

Lab Sample ID: 76394

Date Analyzed: 11/23/99

Lab Project ID: G182-427

Analyzed By: MRC

Matrix: Soil

%Solids: 78.7

Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	380	BQL
Acenaphthylene	380	BQL
Anthracene	380	BQL
Benzidine	380	BQL
Benzo[a]anthracene	380	BQL
Benzo[a]pyrene	380	BQL
Benzo[b]fluoranthene	380	BQL
Benzo[g,h,i]perylene	380	BQL
Benzo[k]fluoranthene	380	BQL
Benzoic Acid	770	BQL
Bis(2-chloroethoxy)methane	380	BQL
Bis(2-chloroethyl)ether	380	BQL
Bis(2-chloroisopropyl)ether	380	BQL
Bis(2-ethylhexyl)phthalate	380	BQL
4-bromophenyl phenyl ether	380	BQL
Butylbenzylphthalate	380	BQL
4-Chloroaniline	380	BQL
4-Chloro-3-methylphenol	380	BQL
2-Chloronaphthalene	380	BQL
2-Chlorophenol	380	BQL
4-Chlorophenyl phenyl ether	380	BQL
Chrysene	380	BQL
Di-n-Butylphthalate	380	BQL
Di-n-octylphthalate	380	BQL
Dibenzo[a,h]anthracene	380	BQL
Dibenzofuran	380	BQL
1,2-Dichlorobenzene	380	BQL
1,3-Dichlorobenzene	380	BQL
1,4-Dichlorobenzene	380	BQL
3,3'-Dichlorobenzidine	770	BQL
2,4-Dichlorophenol	380	BQL
Diethylphthalate	380	BQL
2,4-Dimethylphenol	380	BQL
Dimethylphthalate	380	BQL
4,6-Dinitro-2-methylphenol	1900	BQL
2,4-Dinitrophenol	1900	BQL
2,4-Dinitrotoluene	380	BQL
2,6-Dinitrotoluene	380	BQL
Fluoranthene	380	BQL
Fluorene	380	BQL

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: South Bottom
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76394
Lab Project ID: G182-427
Matrix: Soil

%Solids: 78.7

Date Collected: 11/19/99
Date Received: 11/20/99
Date Analyzed: 11/23/99
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	380	BQL
Hexachlorobutadiene	380	BQL
Hexachlorocyclopentadiene	770	BQL
Hexachloroethane	380	BQL
Indeno(1,2,3-c,d)pyrene	380	BQL
Isophorone	380	BQL
1-Methylnaphthalene	380	BQL
2-Methylnaphthalene	380	BQL
2-Methylphenol	380	BQL
4-Methylphenol	380	BQL
N-Nitrosodi-n-propylamine	380	BQL
N-Nitrosodiphenylamine	380	BQL
Naphthalene	380	BQL
2-Nitroaniline	380	BQL
3-Nitroaniline	380	BQL
4-Nitroaniline	380	BQL
Nitrobenzene	380	BQL
2-Nitrophenol	380	BQL
4-Nitrophenol	1900	BQL
Pentachlorophenol	1900	BQL
Phenanthrene	380	BQL
Phenol	380	BQL
Pyrene	380	BQL
1,2,4-Trichlorobenzene	380	BQL
2,4,5-Trichlorophenol	380	BQL
2,4,6-Trichlorophenol	380	BQL

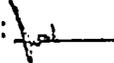
Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8	80
2-Fluorophenol	10	7.2	72
Nitrobenzene-d5	10	7.6	76
Phenol-d6	10	7.7	77
2,4,6-Tribromophenol	10	8.6	86
4-Terphenyl-d14	10	8.6	86

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 

North Carolina Water Quality Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile
by GCMS 6270

Client Sample ID: North Side

Client Project ID: Building 3904-TO 63

Lab Sample ID: 76395

Lab Project ID: G182-427

Matrix: Soil

%Solids: 84.9

Date Collected: 11/19/99

Date Received: 11/20/99

Date Analyzed: 11/23/99

Analyzed By: MRC

Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	330	BQL
Acenaphthylene	330	BQL
Anthracene	330	BQL
Benzidine	330	BQL
Benzo[a]anthracene	330	BQL
Benzo[a]pyrene	330	BQL
Benzo[b]fluoranthene	330	BQL
Benzo[g,h,i]perylene	330	BQL
Benzo[k]fluoranthene	330	BQL
Benzoic Acid	650	BQL
Bis(2-chloroethoxy)methane	330	BQL
Bis(2-chloroethyl)ether	330	BQL
Bis(2-chloroisopropyl)ether	330	BQL
Bis(2-ethylhexyl)phthalate	330	BQL
4-bromophenyl phenyl ether	330	BQL
Butylbenzylphthalate	330	BQL
4-Chloroaniline	330	BQL
4-Chloro-3-methylphenol	330	BQL
2-Chloronaphthalene	330	BQL
2-Chlorophenol	330	BQL
4-Chlorophenyl phenyl ether	330	BQL
Chrysene	330	BQL
Di-n-Butylphthalate	330	BQL
Di-n-octylphthalate	330	BQL
Dibenzo[a,h]anthracene	330	BQL
Dibenzofuran	330	BQL
1,2-Dichlorobenzene	330	BQL
1,3-Dichlorobenzene	330	BQL
1,4-Dichlorobenzene	330	BQL
3,3'-Dichlorobenzidine	650	BQL
2,4-Dichlorophenol	330	BQL
Diethylphthalate	330	BQL
2,4-Dimethylphenol	330	BQL
Dimethylphthalate	330	BQL
4,6-Dinitro-2-methylphenol	1600	BQL
2,4-Dinitrophenol	1600	BQL
2,4-Dinitrotoluene	330	BQL
2,6-Dinitrotoluene	330	BQL
Fluoranthene	330	BQL
Fluorene	330	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: North Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76395
Lab Project ID: G182-427
Matrix: Soil

%Solids: 84.9

Date Collected: 11/19/99
Date Received: 11/20/99
Date Analyzed: 11/23/99
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	330	BQL
Hexachlorobutadiene	330	BQL
Hexachlorocyclopentadiene	650	BQL
Hexachloroethane	330	BQL
Indeno(1,2,3-c,d)pyrene	330	BQL
Isophorone	330	BQL
1-Methylnaphthalene	330	BQL
2-Methylnaphthalene	330	BQL
2-Methylphenol	330	BQL
4-Methylphenol	330	BQL
N-Nitrosodi-n-propylamine	330	BQL
N-Nitrosodiphenylamine	330	BQL
Naphthalene	330	BQL
2-Nitroaniline	330	BQL
3-Nitroaniline	330	BQL
4-Nitroaniline	330	BQL
Nitrobenzene	330	BQL
2-Nitrophenol	330	BQL
4-Nitrophenol	1600	BQL
Pentachlorophenol	1600	BQL
Phenanthrene	330	BQL
Phenol	330	BQL
Pyrene	330	BQL
1,2,4-Trichlorobenzene	330	BQL
2,4,5-Trichlorophenol	330	BQL
2,4,6-Trichlorophenol	330	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9	90
2-Fluorophenol	10	8	80
Nitrobenzene-d5	10	8.7	87
Phenol-d6	10	8	80
2,4,6-Tribromophenol	10	10.6	106
4-Terphenyl-d14	10	10.2	102

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: *[Signature]*

North Carolina Water Quality Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: South Side
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76396
 Lab Project ID: G182-427
 Matrix: Soil

%Solids: 63.9

Date Collected: 11/19/99
 Date Received: 11/20/99
 Date Analyzed: 11/23/99
 Analyzed By: MRC
 Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	340	BQL
Acenaphthylene	340	BQL
Anthracene	340	BQL
Benzidine	340	BQL
Benzo[a]anthracene	340	BQL
Benzo[a]pyrene	340	BQL
Benzo[b]fluoranthene	340	BQL
Benzo[g,h,i]perylene	340	BQL
Benzo[k]fluoranthene	340	BQL
Benzoic Acid	680	BQL
Bis(2-chloroethoxy)methane	340	BQL
Bis(2-chloroethyl)ether	340	BQL
Bis(2-chloroisopropyl)ether	340	BQL
Bis(2-ethylhexyl)phthalate	340	BQL
4-bromophenyl phenyl ether	340	BQL
Butylbenzylphthalate	340	BQL
4-Chloroaniline	340	BQL
4-Chloro-3-methylphenol	340	BQL
2-Chloronaphthalene	340	BQL
2-Chlorophenol	340	BQL
4-Chlorophenyl phenyl ether	340	BQL
Chrysene	340	BQL
Di-n-Butylphthalate	340	BQL
Di-n-octylphthalate	340	BQL
Dibenzo[a,h]anthracene	340	BQL
Dibenzofuran	340	BQL
1,2-Dichlorobenzene	340	BQL
1,3-Dichlorobenzene	340	BQL
1,4-Dichlorobenzene	340	BQL
3,3'-Dichlorobenzidine	680	BQL
2,4-Dichlorophenol	340	BQL
Diethylphthalate	340	BQL
2,4-Dimethylphenol	340	BQL
Dimethylphthalate	340	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrophenol	1700	BQL
2,4-Dinitrotoluene	340	BQL
2,6-Dinitrotoluene	340	BQL
Fluoranthene	340	BQL
Fluorene	340	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: South Side
Client Project ID: Building 3904-T0 6S
Lab Sample ID: 76396
Lab Project ID: G182-427
Matrix: Soil

%Solids: 83.9

Date Collected: 11/19/99
Date Received: 11/20/99
Date Analyzed: 11/23/99
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	340	BQL
Hexachlorobutadiene	340	BQL
Hexachlorocyclopentadiene	680	BQL
Hexachloroethane	340	BQL
Indeno(1,2,3-c,d)pyrene	340	BQL
Isophorone	340	BQL
1-Methylnaphthalene	340	BQL
2-Methylnaphthalene	340	BQL
2-Methylphenol	340	BQL
4-Methylphenol	340	BQL
N-Nitrosodi-n-propylamine	340	BQL
N-Nitrosodiphenylamine	340	BQL
Naphthalene	340	BQL
2-Nitroaniline	340	BQL
3-Nitroaniline	340	BQL
4-Nitroaniline	340	BQL
Nitrobenzene	340	BQL
2-Nitrophenol	340	BQL
4-Nitrophenol	1700	BQL
Pentachlorophenol	1700	BQL
Phenanthrene	340	BQL
Phenol	340	BQL
Pyrene	340	BQL
1,2,4-Trichlorobenzene	340	BQL
2,4,5-Trichlorophenol	340	BQL
2,4,6-Trichlorophenol	340	BQL

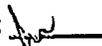
Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.3	93
2-Fluorophenol	10	8.9	89
Nitrobenzene-d5	10	9.2	92
Phenol-d6	10	8.2	82
2,4,6-Tribromophenol	10	9.9	98
4-Terphenyl-d14	10	9.5	95

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID: East Side
 Client Project ID: Building 3904-T0 63
 Lab Sample ID: 76397
 Lab Project ID: G182-427
 Matrix: Soil

Date Collected: 11/19/99
 Date Received: 11/20/99
 Date Analyzed: 11/23/99
 Analyzed By: MRC
 Dilution: 1

%Solids: 84.2

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	350	BQL
Acenaphthylene	350	BQL
Anthracene	350	BQL
Benzidine	350	BQL
Benzo[a]anthracene	350	BQL
Benzo[a]pyrene	350	BQL
Benzo[b]fluoranthene	350	BQL
Benzo[g,h,i]perylene	350	BQL
Benzo[k]fluoranthene	350	BQL
Benzoic Acid	710	BQL
Bis(2-chloroethoxy)methane	350	BQL
Bis(2-chloroethyl)ether	350	BQL
Bis(2-chloroisopropyl)ether	350	BQL
Bis(2-ethylhexyl)phthalate	350	BQL
4-bromophenyl phenyl ether	350	BQL
Butylbenzylphthalate	350	BQL
4-Chloroaniline	350	BQL
4-Chloro-3-methylphenol	350	BQL
2-Chloronaphthalene	350	BQL
2-Chlorophenol	350	BQL
4-Chlorophenyl phenyl ether	350	BQL
Chrysene	350	BQL
Di-n-Butylphthalate	350	BQL
Di-n-octylphthalate	350	BQL
Dibenzo[a,h]anthracene	350	BQL
Dibenzofuran	350	BQL
1,2-Dichlorobenzene	350	BQL
1,3-Dichlorobenzene	350	BQL
1,4-Dichlorobenzene	350	BQL
3,3'-Dichlorobenzidine	710	BQL
2,4-Dichlorophenol	350	BQL
Diethylphthalate	350	BQL
2,4-Dimethylphenol	350	BQL
Dimethylphthalate	350	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrophenol	1800	BQL
2,4-Dinitrotoluene	350	BQL
2,6-Dinitrotoluene	350	BQL
Fluoranthene	350	BQL
Fluorene	350	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 3270

Client Sample ID: East Side
Client Project ID: Building 3904-T0 63
Lab Sample ID: 76397
Lab Project ID: G182-427
Matrix: Soil

%Solids: 84.2

Date Collected: 11/19/99
Date Received: 11/20/99
Date Analyzed: 11/23/99
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobenzene	350	BQL
Hexachlorobutadiene	350	BQL
Hexachlorocyclopentadiene	710	BQL
Hexachloroethane	350	BQL
Indeno(1,2,3-c,d)pyrene	350	BQL
isophorone	350	BQL
1-Methylnaphthalene	350	BQL
2-Methylnaphthalene	350	BQL
2-Methylphenol	350	BQL
4-Methylphenol	350	BQL
N-Nitrosodi-n-propylamine	350	BQL
N-Nitrosodiphenylamine	350	BQL
Naphthalene	350	BQL
2-Nitroaniline	350	BQL
3-Nitroaniline	350	BQL
4-Nitroaniline	350	BQL
Nitrobenzene	350	BQL
2-Nitrophenol	350	BQL
4-Nitrophenol	1800	BQL
Pentachlorophenol	1800	BQL
Phenanthrene	350	BQL
Phenol	350	BQL
Pyrene	350	BQL
1,2,4-Trichlorobenzene	350	BQL
2,4,5-Trichlorophenol	350	BQL
2,4,6-Trichlorophenol	350	BQL

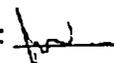
Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9	90
2-Fluorophenol	10	8.7	87
Nitrobenzene-d5	10	8.6	86
Phenol-d6	10	8.1	81
2,4,6-Tribromophenol	10	9.6	96
4-Terphenyl-d14	10	9.5	95

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 

North Carolina Wastewater Certification #481

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: J.A. Jones Environmental Services

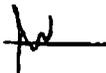
Project Name: Building 3904-TD 63

Sample Information and Analytical Results	
Sample Identification	North Bottom
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	78
Dilution Factor	1
C ₅ -C ₆ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76392

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: J.A. Jones Environmental Services

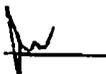
Project Name: Building 3904-TD 63

Sample Information and Analytical Results	
Sample Identification	West Side
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	83
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	120

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76393

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

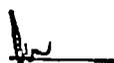
Client Name: J.A. Jones Environmental Services

Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	South Bottom
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	79
Dilution Factor	1
C ₂ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	110
Surrogate % Recovery - FID	110

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.
 ** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76394

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: J.A. Jones Environmental Services

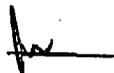
Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	North Side
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	85
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₈ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76395

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: J.A. Jones Environmental Services

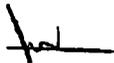
Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	South Side
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	84
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₇ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	120

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76396

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: J.A. Jones Environmental Services

Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	East Side
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	84
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76397

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

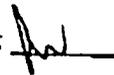
Client Name: J.A. Jones Environmental Services

Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	South Side II
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/23/99
Dry Weight	84
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.
 ** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76398

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

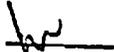
Client Name: J.A. Jones Environmental ServicesProject Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	Trip Blank
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/19/99
Date Analyzed	11/22/99
Dry Weight	100
Dilution Factor	1
C ₅ -C ₈ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₂ Aliphatics**	< 500 (µg/Kg)
C ₉ -C ₁₀ Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	120

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G182-427-76399

Reviewed By: 

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 10/31/99 PID Initial Calibration Date: 10/31/99

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(µg/Kg)	(µg/L)	(µg/Kg)	(µg/L)	(µg/Kg)
C ₅ -C ₈ Aliphatics	2.4	120	7.5	380	10	500
C ₉ -C ₁₂ Aliphatics	1.3	65	4.0	210	10	500
C ₉ -C ₁₀ Aromatics	0.5	25	1.6	80	10	500

Calibration Concentration Levels

Range	Levels		%RSD or CCC	Method of Quantitation
	(µg/L)	(µg/Kg)		
C ₅ -C ₈ Aliphatics	40	2000	12.0	Calibration Factor
	160	8000		
	400	20000		
	1600	80000		
	4000	200000		
C ₉ -C ₁₂ Aliphatics	30	1500	0.987	Linear Regression
	120	6000		
	300	15000		
	1200	60000		
	3000	150000		
C ₉ -C ₁₀ Aromatics	65	3250	22.1	Calibration Factor
	260	13000		
	650	32500		
	2600	130000		
	6500	325000		

Calibration Check Date: 11/22/99

Calibration Check

Range	Levels		RPD
	(µg/L)	(µg/Kg)	
C ₅ -C ₈ Aliphatics	400	20000	24.6
C ₉ -C ₁₂ Aliphatics	300	15000	23.5
C ₉ -C ₁₀ Aromatics	650	32500	19.8

MDL = Method Detection Limit
 ML = Minimum Limit
 RL = Reportable Limit

RPD = Relative Percent Difference
 %RSD = Percent Relative Standard Deviation
 CCC = Correlation Coefficient of Curve

Reviewed By: 

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: J.A. Jones Environmental Services

Project Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	North Bottom
Sample Matrix	Soil
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/24/99
Date Analyzed	11/24/99
Dry Weight	78.2
Dilution Factor	1
C ₉ -C ₁₈ Aliphatics*	< 10 (mg/Kg)
C ₁₈ -C ₃₈ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	69
Aromatic Surrogate % Recovery	84

Comments:

- * = Excludes any surrogates or internal standards.
- Sample did not require fractionation.

Lab info: G182-427-76392

Reviewed By: fw

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: J.A. Jones Environmental ServicesProject Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	West Side
Sample Matrix	Soil
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/24/99
Date Analyzed	11/24/99
Dry Weight	83.1
Dilution Factor	1
C ₉ -C ₁₈ Aliphatics*	< 10 (mg/Kg)
C ₁₉ -C ₃₈ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	72
Aromatic Surrogate % Recovery	85

Comments:

- * = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G182-427-76393

Reviewed By: AW

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: J.A. Jones Environmental ServicesProject Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	South Bottom
Sample Matrix	Soil
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/24/99
Date Analyzed	11/24/99
Dry Weight	78.7
Dilution Factor	1
C ₉ -C ₁₈ Aliphatics*	< 10 (mg/Kg)
C ₁₉ -C ₃₆ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	71
Aromatic Surrogate % Recovery	85

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G182-427-76394

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: J.A. Jones Environmental ServicesProject Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	North Side
Sample Matrix	Soil
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/24/99
Date Analyzed	11/24/99
Dry Weight	84.8
Dilution Factor	1
C ₉ -C ₁₈ Aliphatics*	< 10 (mg/Kg)
C ₁₉ -C ₃₆ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	82
Aromatic Surrogate % Recovery	97

Comments:

- * = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G182-427-76395

Reviewed By: Jan

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: J.A. Jones Environmental ServicesProject Name: Building 3904-T0 63

Sample Information and Analytical Results	
Sample Identification	South Side
Sample Matrix	Soil
Date Collected	11/19/99
Date Received	11/20/99
Date Extracted	11/24/99
Date Analyzed	11/24/99
Dry Weight	83.9
Dilution Factor	1
C ₉ -C ₁₈ Aliphatics*	< 10 (mg/Kg)
C ₁₅ -C ₃₀ Aliphatics*	< 10 (mg/Kg)
C ₁₁ -C ₂₂ Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	76
Aromatic Surrogate % Recovery	82

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G182-427-76396

Reviewed By: JN

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/14/99

Calibration Ranges and Limits

Range	MDL		ML		RL	
	($\mu\text{g/mL}$)	(mg/Kg)	($\mu\text{g/mL}$)	(mg/Kg)	($\mu\text{g/mL}$)	(mg/Kg)
C ₉ -C ₁₈ Aliphatics	0.1	2	0.3	6.5	1	10
C ₁₉ -C ₃₈ Aliphatics	0.1	1	0.3	3.1	1	10
C ₁₁ -C ₂₂ Aromatics	0.2	2.5	0.6	8	1	10

Calibration Concentration Levels

Range	Levels		%RSD or CCC	Method of Quantitation
	($\mu\text{g/mL}$)	(mg/Kg)		
C ₉ -C ₁₈ Aliphatics	0.6	10	1.00	Linear Regression
	1.5	25		
	3	50		
	6	100		
	12	200		
C ₁₉ -C ₃₈ Aliphatics	0.8	13.3	1.0	Linear Regression
	2	33.3		
	4	66.7		
	8	133		
	16	267		
C ₁₁ -C ₂₂ Aromatics	1.2	20	0.996	Linear Regression
	3	50		
	6	100		
	12	200		
	24	400		

Calibration Check Date: 11/24/99

Calibration Check

Range	Levels		RPD
	($\mu\text{g/mL}$)	(mg/Kg)	
C ₉ -C ₁₈ Aliphatics	6	100	11.7
C ₁₉ -C ₃₈ Aliphatics	8	133	18.4
C ₁₁ -C ₂₂ Aromatics	12	200	-3.0

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

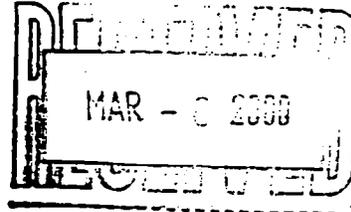
CCC = Correlation Coefficient of Curve

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Bill Buccille
McLaren/Hart
Two North Shore Center Suite 100
Pittsburgh, PA 15212

February 23, 2000

Report Number: G182-473



Dear Mr. Buccille,

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,

Paradigm Analytical Laboratories, Inc.

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.
Facsimile Cover Sheet

TO 63

Results enclosed



TO: Bill Buccille 412 395 1410
Name Company Fax Number

FROM: ERICA
Name

DATE: 2/24

RE: 63

COMMENTS

[Empty rectangular box for comments]

Please call (910) 350-1903 regarding any problems with this transmission.

Paradigm Analytical Laboratories
2627 Northchase Parkway SE
Wilmington, NC 28405
Fax: (910) 350-1557

Cover Sheet + _____ Pages

PARADIGM ANALYTICAL LABORATORIES, INC.
Results for Volatiles
by GC 602

Client Sample ID: 79GW05
Client Project ID: 63
Lab Sample ID: 81204
Lab Project ID: G182-473

Analyzed By: EKR
Date Collected: 02/14/00
Date Received: 02/15/00
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	2/18/00	1	1	BQL
Chlorobenzene	2/18/00	1	1	BQL
1,2-Dichlorobenzene	2/18/00	1	2	BQL
1,3-Dichlorobenzene	2/18/00	1	2	BQL
1,4-Dichlorobenzene	2/18/00	1	2	BQL
Ethylbenzene	2/18/00	1	1	BQL
Methyl-tert-butyl ether (MTBE)	2/18/00	1	2	BQL
Toluene	2/18/00	1	1	BQL
m/p-Xylene	2/18/00	1	2	BQL
o-Xylene	2/18/00	1	2	BQL

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	41	103

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: 

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 602

Client Sample ID: Duplicate
 Client Project ID: 63
 Lab Sample ID: 81205
 Lab Project ID: G182-473

Analyzed By: EKR
 Date Collected: 02/14/00
 Date Received: 02/15/00
 Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	2/18/00	1	1	BQL
Chlorobenzene	2/18/00	1	1	BQL
1,2-Dichlorobenzene	2/18/00	1	2	BQL
1,3-Dichlorobenzene	2/18/00	1	2	BQL
1,4-Dichlorobenzene	2/18/00	1	2	BQL
Ethylbenzene	2/18/00	1	1	BQL
Methyl-tert-butyl ether (MTBE)	2/18/00	1	2	BQL
Toluene	2/18/00	1	1	BQL
m/p-Xylene	2/18/00	1	2	BQL
o-Xylene	2/18/00	1	2	BQL

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	41	102

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: 

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Polynuclear Aromatic Hydrocarbons
EPA 610 by GCMS 625

Client Sample ID: 79GW05
Client Project ID: 63
Lab Sample ID: 81204
Lab Project ID: G182-473
Matrix: Water

Date Collected: 2/14/00
Date Received: 2/15/00
Date Analyzed: 2/19/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acenaphthene	10	BQL
Acenaphthylene	10	BQL
Anthracene	10	BQL
Benzo[a]anthracene	10	BQL
Benzo[a]pyrene	10	BQL
Benzo[b]fluoranthene	10	BQL
Benzo[g,h,i]perylene	10	BQL
Benzo[k]fluoranthene	10	BQL
Chrysene	10	BQL
Dibenzo[a,h]anthracene	10	BQL
Fluoranthene	10	BQL
Fluorene	10	BQL
Indeno(1,2,3-c,d)pyrene	10	BQL
1-Methylnaphthalene	10	BQL
2-Methylnaphthalene	10	BQL
Naphthalene	10	BQL
Phenanthrene	10	BQL
Pyrene	10	BQL

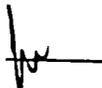
Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.1	91
Nitrobenzene-d5	10	8.5	85
4-Terphenyl-d14	10	10.2	102

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Polynuclear Aromatic Hydrocarbons
EPA 610 by GCMS 625

Client Sample ID: Field Blank
Client Project ID: 63
Lab Sample ID: 81206
Lab Project ID: G182-473
Matrix: Water

Date Collected: 2/14/00
Date Received: 2/15/00
Date Analyzed: 2/19/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/L)	Result (ug/L)
Acenaphthene	10	BQL
Acenaphthylene	10	BQL
Anthracene	10	BQL
Benzo[a]anthracene	10	BQL
Benzo[a]pyrene	10	BQL
Benzo[b]fluoranthene	10	BQL
Benzo[g,h,i]perylene	10	BQL
Benzo[k]fluoranthene	10	BQL
Chrysene	10	BQL
Dibenzo[a,h]anthracene	10	BQL
Fluoranthene	10	BQL
Fluorene	10	BQL
Indeno(1,2,3-c,d)pyrene	10	BQL
1-Methylnaphthalene	10	BQL
2-Methylnaphthalene	10	BQL
Naphthalene	10	BQL
Phenanthrene	10	BQL
Pyrene	10	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.8	98
Nitrobenzene-d5	10	9.1	91
4-Terphenyl-d14	10	10.1	101

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: 